



Earth
Innovation
Institute

ANNUAL REPORT

TWO YEARS | FISCAL YEARS 2013 AND 2014 | JULY 1, 2012 THRU JUNE 30, 2014



+ **BRAZIL** | DEFORESTATION
DECLINED FROM A TEN-YEAR
AVERAGE OF 19,500 KM²
THROUGH 2005 TO 5,843 KM²
IN 2013, A 70% REDUCTION.



MESSAGE FROM THE PRESIDENT

I recently accompanied our Indonesia team as they brought to fruition a delicate agreement between a palm oil company and a District Bupati from Borneo. Palm oil companies are the major drivers of deforestation in Indonesia. But some of them are ready to do business in a new way that leaves the forest standing and its orangutan residents thriving, while giving local communities a bigger role in growing this lucrative crop. This is the basis of this novel accord between a company and powerful governmental leader—to make palm oil the engine of sustainable development instead of the bulldozer of rainforest destruction.

The Earth Innovation Institute strives to forge agreements among unlikely allies throughout the Tropics. We do this in the places where our experts live and work—Indonesia, Brazil and Colombia—and with our partners in other critical regions—Peru, Mexico and Kenya. As scientists and researchers, we have a special opportunity and obligation to act as midwives for social change. We approach the task of sustainable development with a thorough understanding of the culture, policies, politics, economies and ecosystems that are at play in a State, District or Province. We find the levers that can tilt the balance of rural development towards a pathway that reduces greenhouse gas emissions, maintains and restores native ecosystems, and improves the livelihoods of rural people.

And once we find these levers, we try to pull them.

I'm proud to present this report on our work over the two-year period ending in June 2014. We began this period as the International Program of the independent Brazilian research institute "IPAM". Now, IPAM—the Amazon Environmental Research Institute that a small group of us founded in 1995—has put a new international research center into the world—Earth Innovation Institute—with headquarters in San Francisco, California.

With decades of experience working in unruly tropical forest frontiers, the Earth Innovation Institute is a very new kind of organization. We are convinced that climate change, food shortages, the depletion of fisheries and the destruction of tropical rainforests can all be solved through a new model of rural development that begins in the Tropics.

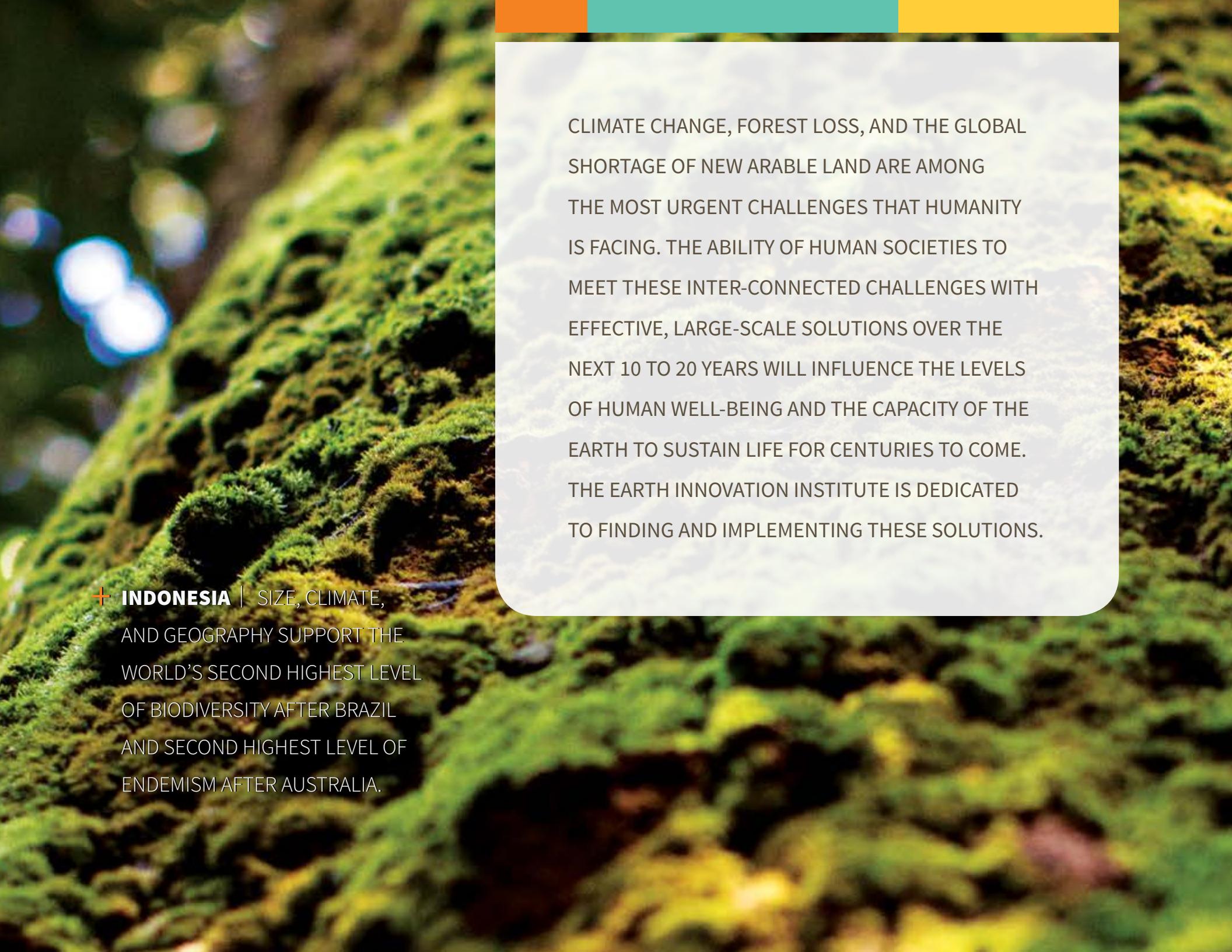
The Earth Innovation Institute is a response to a world that is desperately in need of innovation to keep the climate stable, the rivers healthy, and the land fertile.

Please join us in this mission.

Sincerely,

A handwritten signature in black ink, appearing to read "D. C. Nepstad".

Daniel Nepstad, PhD
Senior Scientist & President



+ INDONESIA | SIZE, CLIMATE,
AND GEOGRAPHY SUPPORT THE
WORLD'S SECOND HIGHEST LEVEL
OF BIODIVERSITY AFTER BRAZIL
AND SECOND HIGHEST LEVEL OF
ENDEMISM AFTER AUSTRALIA.

CLIMATE CHANGE, FOREST LOSS, AND THE GLOBAL SHORTAGE OF NEW ARABLE LAND ARE AMONG THE MOST URGENT CHALLENGES THAT HUMANITY IS FACING. THE ABILITY OF HUMAN SOCIETIES TO MEET THESE INTER-CONNECTED CHALLENGES WITH EFFECTIVE, LARGE-SCALE SOLUTIONS OVER THE NEXT 10 TO 20 YEARS WILL INFLUENCE THE LEVELS OF HUMAN WELL-BEING AND THE CAPACITY OF THE EARTH TO SUSTAIN LIFE FOR CENTURIES TO COME. THE EARTH INNOVATION INSTITUTE IS DEDICATED TO FINDING AND IMPLEMENTING THESE SOLUTIONS.



WE BELIEVE IN LASTING SOLUTIONS, NOT SILVER BULLETS

We appreciate the complexity of the problems and systems we are trying to change, and recognize that the transition to a new, low-emission rural development model will not be easy or swift.

WE BELIEVE IN BOTTOM-UP, MULTI-STAKEHOLDER PROCESSES

We work with small producers, businesses, government, and civil society to craft and implement locally authentic, consensus-based solutions to resource management issues.

WE BELIEVE IN PARTNERSHIP AND ALLIANCES

We collaborate with a full range of local partners to develop appropriate solutions at the jurisdictional level, and with peer institutions and enterprises from around the world to influence global markets and policies.

WE BELIEVE IN LARGE-SCALE RESPONSES TO THE CLIMATE CRISIS

We are running out of time to change the arc of development in the tropics, lending urgency to our work and leading us to focus on achieving results at scale.

WE BELIEVE IN PRAGMATIC, FACT-BASED APPROACHES

We are non-partisan politically, committed to rigorous science and policy analysis, and firmly grounded in the realities of the places where we work.



INDONESIA | EARTH INNOVATION INSTITUTE SUPPORTS GOVERNOR IN ROADMAP TO CURB DEFORESTATION

"If we wanted to have a palm oil industry free of deforestation, what would that look like?"

The Governor of Indonesia's Central Kalimantan province posed this question to Silvia Irawan and Dan Nepstad in 2012, after hearing about our work in Brazil. Excited by his interest, our team in Indonesia set out to understand how Governor Narang could work with both the international palm oil industry and local farmers to develop a zero deforestation industry.

This wasn't an easy question to answer. Central Kalimantan is the third biggest province in Indonesia. Only about half of its more than 33 million acres of tropical forests remain standing, and these forests face increasing pressure from development. The province is also one of the largest - and fastest growing - palm oil producers in the world.

Could Governor Narang actually protect the province's remaining forests without sacrificing the economic benefits of this growth?

Knowing that the best solutions stem from deep understanding of the social, economic, and political context in the region, Earth Innovation Institute's Indonesia team – led by Dr. Silvia Irawan and Alue Dohong – partnered with local districts and the University of Palangka Raya. They conducted in-depth surveys and research to gain insights into the underlying issues driving deforestation and how it might be curbed.

What they learned was daunting. The government had no reliable way to monitor where all of the palm oil plantations were located, how big they were, or who had rights to these lands. Without this information, it was impossible to enforce deforestation regulations or understand how local farmers were involved in palm oil production. Permits had been issued in areas that were supposed to be protected. The system was also not working for companies; it took years to get proper licenses.

Silvia and Alue also saw great opportunity. The region could actually increase palm oil production while reducing poverty and sparing forests. To do this, the government would need to streamline data in a new monitoring system, require production on already degraded lands rather than clearing more forest, and work with both companies and local farmers to create market rewards and financing incentives for sustainable practices.

This research provided the basis of a response to Governor Narang's question posed in 2012. At the Governor's request, the team developed a roadmap of practical recommendations for the province that he launched in May of 2013.

The Governor publicly announced the roadmap as his plan for reducing deforestation, setting the goal of curbing deforestation 80% by 2020. This commitment was the first of its kind in Indonesia, and he invited the public to hold him accountable for making the proposed changes a reality.

Silvia, Alue and the rest of the Earth Innovation team continue to support the Governor as he implements the roadmap. Earth Innovation Institute developed a plantation monitoring system that, with one click, allows officials to view a plantation, see who owns it, track new deforestation and forest fires, and monitor the plantation's productivity. It provides essential data needed to achieve 80% reduction in deforestation within six years. Our monitoring system will allow the government to make informed policy decisions about development and deforestation, and the Governor is ready to scale it for greater use.

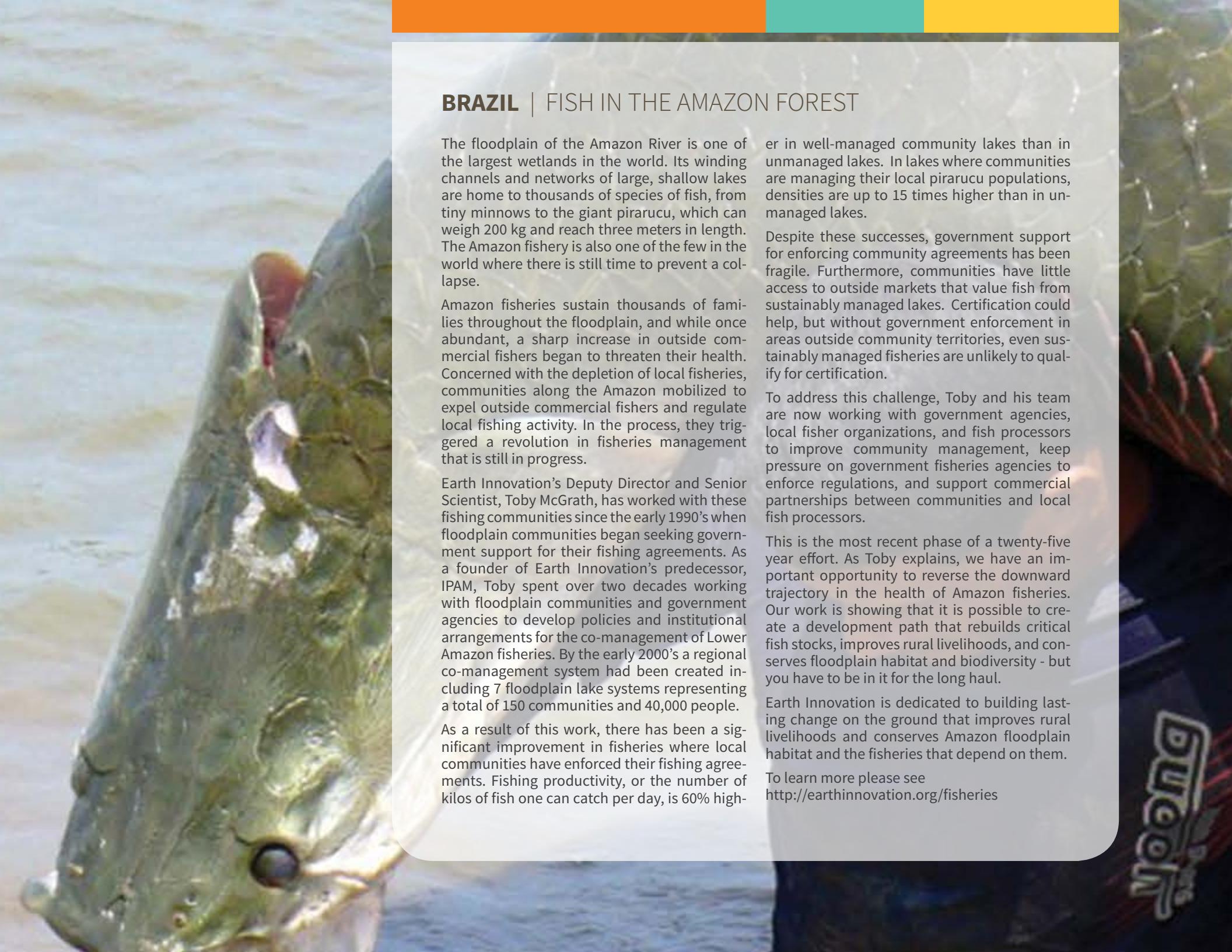
As Silvia explains, "We influence the decision making process right at the core of the issues. Having a government willing to use strong science and have their actions watched by civil society – that's a big achievement. If we keep making these changes, province by province, we'll change the future of the country."

To learn more please see <http://earthinnovation.org/ckal>

A photograph of a traditional floating market. In the foreground, several wooden boats are docked at a wooden pier. One boat has a large pile of green vegetables on its deck. In the background, more boats are visible, along with people standing on the pier and some small buildings. The scene is bathed in warm sunlight.

+ INDONESIA | HAS COMMITTED
TO REDUCING GREENHOUSE GAS
EMISSIONS BY 26% BY 2020.





BRAZIL | FISH IN THE AMAZON FOREST

The floodplain of the Amazon River is one of the largest wetlands in the world. Its winding channels and networks of large, shallow lakes are home to thousands of species of fish, from tiny minnows to the giant pirarucu, which can weigh 200 kg and reach three meters in length. The Amazon fishery is also one of the few in the world where there is still time to prevent a collapse.

Amazon fisheries sustain thousands of families throughout the floodplain, and while once abundant, a sharp increase in outside commercial fishers began to threaten their health. Concerned with the depletion of local fisheries, communities along the Amazon mobilized to expel outside commercial fishers and regulate local fishing activity. In the process, they triggered a revolution in fisheries management that is still in progress.

Earth Innovation's Deputy Director and Senior Scientist, Toby McGrath, has worked with these fishing communities since the early 1990's when floodplain communities began seeking government support for their fishing agreements. As a founder of Earth Innovation's predecessor, IPAM, Toby spent over two decades working with floodplain communities and government agencies to develop policies and institutional arrangements for the co-management of Lower Amazon fisheries. By the early 2000's a regional co-management system had been created including 7 floodplain lake systems representing a total of 150 communities and 40,000 people.

As a result of this work, there has been a significant improvement in fisheries where local communities have enforced their fishing agreements. Fishing productivity, or the number of kilos of fish one can catch per day, is 60% high-

er in well-managed community lakes than in unmanaged lakes. In lakes where communities are managing their local pirarucu populations, densities are up to 15 times higher than in unmanaged lakes.

Despite these successes, government support for enforcing community agreements has been fragile. Furthermore, communities have little access to outside markets that value fish from sustainably managed lakes. Certification could help, but without government enforcement in areas outside community territories, even sustainably managed fisheries are unlikely to qualify for certification.

To address this challenge, Toby and his team are now working with government agencies, local fisher organizations, and fish processors to improve community management, keep pressure on government fisheries agencies to enforce regulations, and support commercial partnerships between communities and local fish processors.

This is the most recent phase of a twenty-five year effort. As Toby explains, we have an important opportunity to reverse the downward trajectory in the health of Amazon fisheries. Our work is showing that it is possible to create a development path that rebuilds critical fish stocks, improves rural livelihoods, and conserves floodplain habitat and biodiversity - but you have to be in it for the long haul.

Earth Innovation is dedicated to building lasting change on the ground that improves rural livelihoods and conserves Amazon floodplain habitat and the fisheries that depend on them.

To learn more please see
<http://earthinnovation.org/fisheries>

A close-up photograph of a man's hands holding a massive, iridescent green and blue Pirarucu fish. The fish's scales are highly reflective, catching the light. The man is wearing a blue patterned shirt and a white cap. In the background, the calm water of a river or lake is visible.

+ **BRAZIL** | PIRARUCU (ARAPAIMA SPP.), ONE OF THE MOST IMPORTANT FISH SPECIES FOR LOCAL COMMUNITIES IN THE LOWER AMAZON, CAN REACH EIGHT FEET AND WEIGH OVER 400 POUNDS.



IN-COUNTRY EXPERTS

IMPLEMENTING PARTNERS

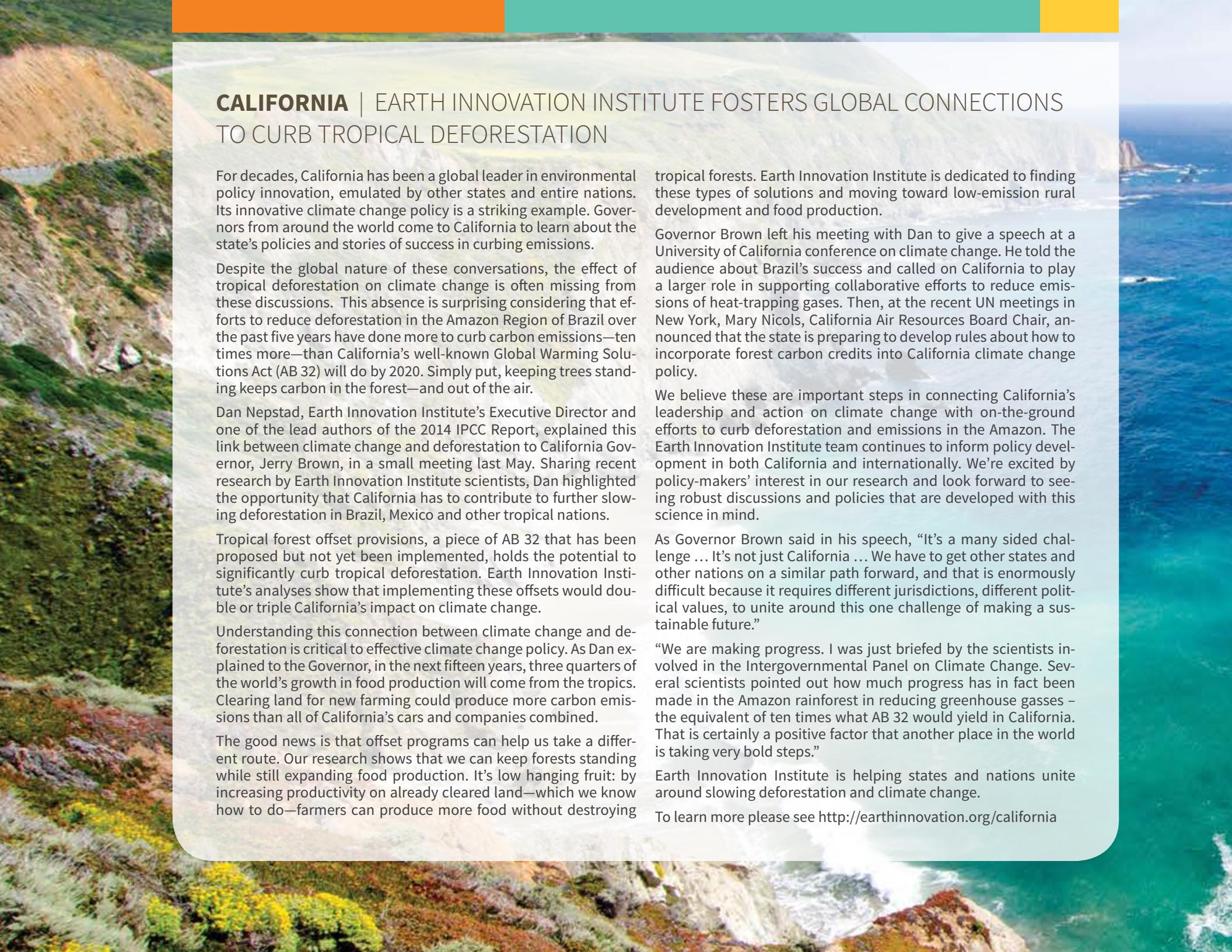
Bonsucro
Forest Trends
Foundation for International Environmental Law and Development
Fundación Natura Colombia
Global Roundtable for Sustainable Beef
Governors' Climate & Forests Task Force
Green Belt Movement
Instituto de Pesquisa Ambiental da Amazônia
Instituto del Bien Común
ProNatura Sur
Roundtable on Responsible Palm Oil
Roundtable on Responsible Soy

SAPOEMA – Sociedade para
a Pesquisa e Proteção do Meio
Ambiente
Solidaridad
Unilever
Woods Hole Research Center
WWF

TARGET COUNTRIES

IMPLEMENTING REGIONS





CALIFORNIA | EARTH INNOVATION INSTITUTE FOSTERS GLOBAL CONNECTIONS TO CURB TROPICAL DEFORESTATION

For decades, California has been a global leader in environmental policy innovation, emulated by other states and entire nations. Its innovative climate change policy is a striking example. Governors from around the world come to California to learn about the state's policies and stories of success in curbing emissions.

Despite the global nature of these conversations, the effect of tropical deforestation on climate change is often missing from these discussions. This absence is surprising considering that efforts to reduce deforestation in the Amazon Region of Brazil over the past five years have done more to curb carbon emissions—ten times more—than California's well-known Global Warming Solutions Act (AB 32) will do by 2020. Simply put, keeping trees standing keeps carbon in the forest—and out of the air.

Dan Nepstad, Earth Innovation Institute's Executive Director and one of the lead authors of the 2014 IPCC Report, explained this link between climate change and deforestation to California Governor, Jerry Brown, in a small meeting last May. Sharing recent research by Earth Innovation Institute scientists, Dan highlighted the opportunity that California has to contribute to further slowing deforestation in Brazil, Mexico and other tropical nations.

Tropical forest offset provisions, a piece of AB 32 that has been proposed but not yet been implemented, holds the potential to significantly curb tropical deforestation. Earth Innovation Institute's analyses show that implementing these offsets would double or triple California's impact on climate change.

Understanding this connection between climate change and deforestation is critical to effective climate change policy. As Dan explained to the Governor, in the next fifteen years, three quarters of the world's growth in food production will come from the tropics. Clearing land for new farming could produce more carbon emissions than all of California's cars and companies combined.

The good news is that offset programs can help us take a different route. Our research shows that we can keep forests standing while still expanding food production. It's low hanging fruit: by increasing productivity on already cleared land—which we know how to do—farmers can produce more food without destroying

tropical forests. Earth Innovation Institute is dedicated to finding these types of solutions and moving toward low-emission rural development and food production.

Governor Brown left his meeting with Dan to give a speech at a University of California conference on climate change. He told the audience about Brazil's success and called on California to play a larger role in supporting collaborative efforts to reduce emissions of heat-trapping gases. Then, at the recent UN meetings in New York, Mary Nichols, California Air Resources Board Chair, announced that the state is preparing to develop rules about how to incorporate forest carbon credits into California climate change policy.

We believe these are important steps in connecting California's leadership and action on climate change with on-the-ground efforts to curb deforestation and emissions in the Amazon. The Earth Innovation Institute team continues to inform policy development in both California and internationally. We're excited by policy-makers' interest in our research and look forward to seeing robust discussions and policies that are developed with this science in mind.

As Governor Brown said in his speech, "It's a many sided challenge ... It's not just California ... We have to get other states and other nations on a similar path forward, and that is enormously difficult because it requires different jurisdictions, different political values, to unite around this one challenge of making a sustainable future."

"We are making progress. I was just briefed by the scientists involved in the Intergovernmental Panel on Climate Change. Several scientists pointed out how much progress has in fact been made in the Amazon rainforest in reducing greenhouse gasses – the equivalent of ten times what AB 32 would yield in California. That is certainly a positive factor that another place in the world is taking very bold steps."

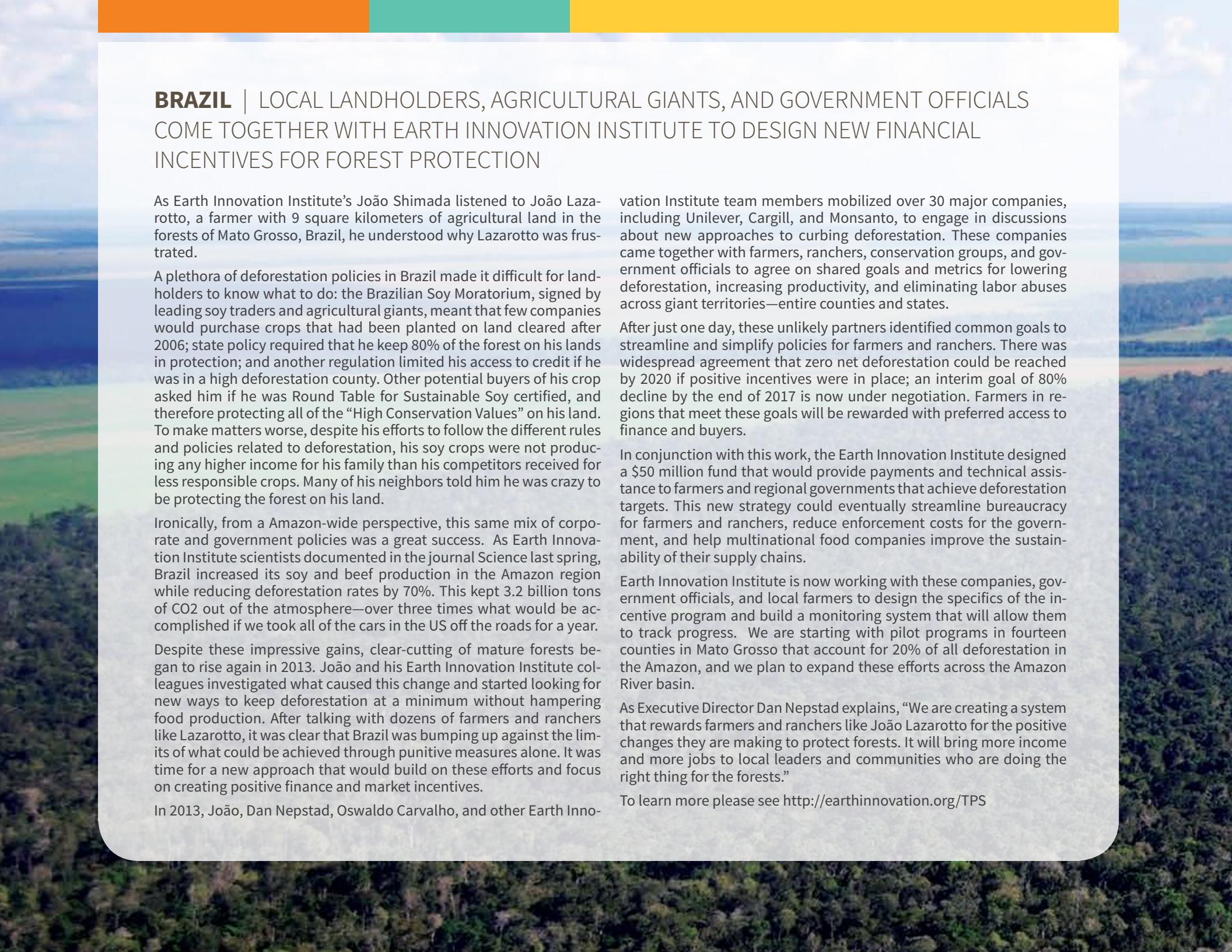
Earth Innovation Institute is helping states and nations unite around slowing deforestation and climate change.

To learn more please see <http://earthinnovation.org/california>



+ **CALIFORNIA** | HAS COMMITTED
TO REDUCE EMISSIONS TO 1990
LEVELS, A 16% DECREASE BELOW
BUSINESS-AS-USUAL.





BRAZIL | LOCAL LANDHOLDERS, AGRICULTURAL GIANTS, AND GOVERNMENT OFFICIALS COME TOGETHER WITH EARTH INNOVATION INSTITUTE TO DESIGN NEW FINANCIAL INCENTIVES FOR FOREST PROTECTION

As Earth Innovation Institute's João Shimada listened to João Lazarotto, a farmer with 9 square kilometers of agricultural land in the forests of Mato Grosso, Brazil, he understood why Lazarotto was frustrated.

A plethora of deforestation policies in Brazil made it difficult for landholders to know what to do: the Brazilian Soy Moratorium, signed by leading soy traders and agricultural giants, meant that few companies would purchase crops that had been planted on land cleared after 2006; state policy required that he keep 80% of the forest on his lands in protection; and another regulation limited his access to credit if he was in a high deforestation county. Other potential buyers of his crop asked him if he was Round Table for Sustainable Soy certified, and therefore protecting all of the "High Conservation Values" on his land. To make matters worse, despite his efforts to follow the different rules and policies related to deforestation, his soy crops were not producing any higher income for his family than his competitors received for less responsible crops. Many of his neighbors told him he was crazy to be protecting the forest on his land.

Ironically, from a Amazon-wide perspective, this same mix of corporate and government policies was a great success. As Earth Innovation Institute scientists documented in the journal *Science* last spring, Brazil increased its soy and beef production in the Amazon region while reducing deforestation rates by 70%. This kept 3.2 billion tons of CO₂ out of the atmosphere—over three times what would be accomplished if we took all of the cars in the US off the roads for a year.

Despite these impressive gains, clear-cutting of mature forests began to rise again in 2013. João and his Earth Innovation Institute colleagues investigated what caused this change and started looking for new ways to keep deforestation at a minimum without hampering food production. After talking with dozens of farmers and ranchers like Lazarotto, it was clear that Brazil was bumping up against the limits of what could be achieved through punitive measures alone. It was time for a new approach that would build on these efforts and focus on creating positive finance and market incentives.

In 2013, João, Dan Nepstad, Oswaldo Carvalho, and other Earth Inno-

vation Institute team members mobilized over 30 major companies, including Unilever, Cargill, and Monsanto, to engage in discussions about new approaches to curbing deforestation. These companies came together with farmers, ranchers, conservation groups, and government officials to agree on shared goals and metrics for lowering deforestation, increasing productivity, and eliminating labor abuses across giant territories—entire counties and states.

After just one day, these unlikely partners identified common goals to streamline and simplify policies for farmers and ranchers. There was widespread agreement that zero net deforestation could be reached by 2020 if positive incentives were in place; an interim goal of 80% decline by the end of 2017 is now under negotiation. Farmers in regions that meet these goals will be rewarded with preferred access to finance and buyers.

In conjunction with this work, the Earth Innovation Institute designed a \$50 million fund that would provide payments and technical assistance to farmers and regional governments that achieve deforestation targets. This new strategy could eventually streamline bureaucracy for farmers and ranchers, reduce enforcement costs for the government, and help multinational food companies improve the sustainability of their supply chains.

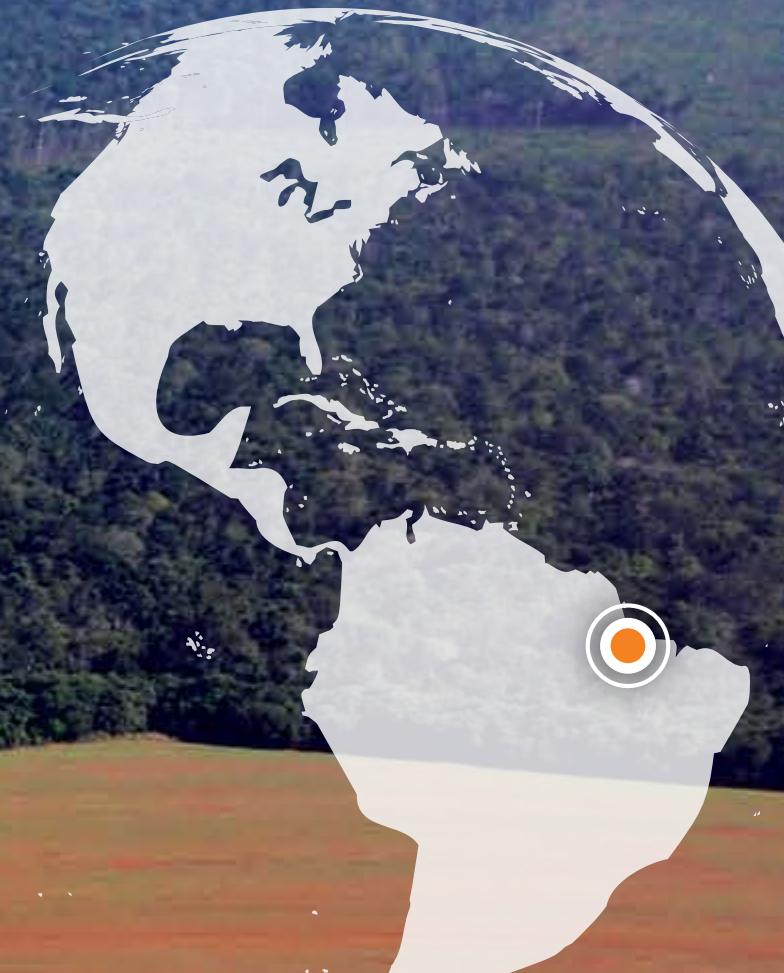
Earth Innovation Institute is now working with these companies, government officials, and local farmers to design the specifics of the incentive program and build a monitoring system that will allow them to track progress. We are starting with pilot programs in fourteen counties in Mato Grosso that account for 20% of all deforestation in the Amazon, and we plan to expand these efforts across the Amazon River basin.

As Executive Director Dan Nepstad explains, "We are creating a system that rewards farmers and ranchers like João Lazarotto for the positive changes they are making to protect forests. It will bring more income and more jobs to local leaders and communities who are doing the right thing for the forests."

To learn more please see <http://earthinnovation.org/TPS>

The background image shows a vast, dense green forest in the foreground, transitioning into agricultural fields and water bodies in the distance under a cloudy sky.

+ THE DECELERATION OF
DEFORESTATION HAS AVOIDED
THE EMISSIONS OF 3.2 GTCO₂
TO THE ATMOSPHERE.



A wide-angle photograph looking up through the dense canopy of a tropical forest. The scene is filled with various shades of green from different leafy plants and trees. Sunlight filters through the leaves, creating bright highlights and deep shadows. The perspective is from a low angle, looking upwards towards the sky.

+ BRAZIL | OVER 11,000 FAMILIES HAVE
BENEFITED FROM EARTH INNOVATION'S
LOWER AMAZON WORK

FINANCIAL SUMMARY

FOR THE YEARS ENDING JUNE 30, 2014* AND JUNE 30, 2013

OPERATING REVENUE AND EXPENSES

REVENUE	2014 TOTAL	2013 TOTAL
Grants and Contributions	\$4,411,056	\$4,339,606
Contract Revenue	\$660,843	\$326,345
In-Kind and Other Revenue	\$27,098	\$19,691
Total Revenue and Support	\$5,098,997	\$4,685,642

EXPENSES	2014	2013
Program Grants and Services	\$4,624,801	\$4,536,616
General & Administrative	\$245,736	\$97,096
Fundraising	\$13,987	\$50,465
Total Expenses	\$4,884,523	\$4,684,177
Change in Unrestricted Net Assets	\$214,473	\$1,465
Unrestricted Net Assets at Beginning of Year	\$193,034	\$191,569
Unrestricted Net Assets at End of Year	\$405,707	\$193,034

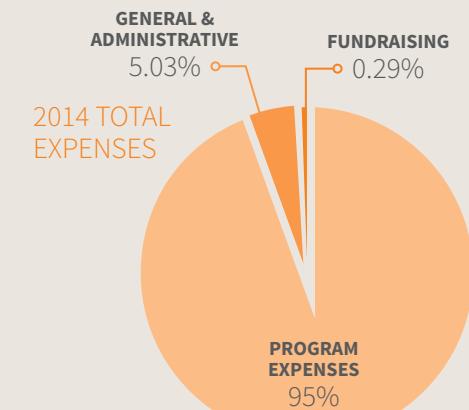


STATEMENT OF FINANCIAL POSITION

ASSETS	2014	2013
Cash and Cash Equivalents	\$1,410,875	\$1,350,644
Grants Receivable	\$2,656,446	\$1,427,600
Accounts Receivables	\$177,885	\$160,072
Other Assets	\$253,985	\$110,334
Total Assets	\$4,499,191	\$3,048,650

LIABILITIES AND NET ASSETS	2014	2013
Accounts Payable	\$240,490	\$304,656
Grants, Direct Assist Payable	\$437,137	\$387,192
Accrued Liabilities	\$78,980	\$88,993
Deferred Revenue	\$177,049	-
Beginning Assets	\$2,267,809	\$4,628,833
Change in Net Assets	\$1,302,466	\$(2,361,024)
Total Net Assets	\$3,570,275	\$2,267,809

Total Liabilities and Net Assets	2014	2013
	\$4,503,931	\$3,048,650



*Preliminary, unaudited financial statements



+ **COLOMBIA** | DESPITE COVERING LESS THAN 1% OF THE PLANET'S SURFACE, COLOMBIA IS HOME TO MORE THAN 10% OF THE WORLD'S PLANT AND ANIMAL SPECIES.

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*Formerly IPAM International Program (2013)

**Elected in Fiscal Year 2015

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Toby McGrath

Deputy Director & Senior Scientist

Danielle Knight

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Tathiana Bezerra

Research Associate

Maria Teresa Becerra

National Program Coordinator Colombia

Research Associate

Oswaldo Carvalho

Research Associate

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Alue Dohong

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*As of November 2014

