

Economic Incentives for Halting Deforestation in the Amazon

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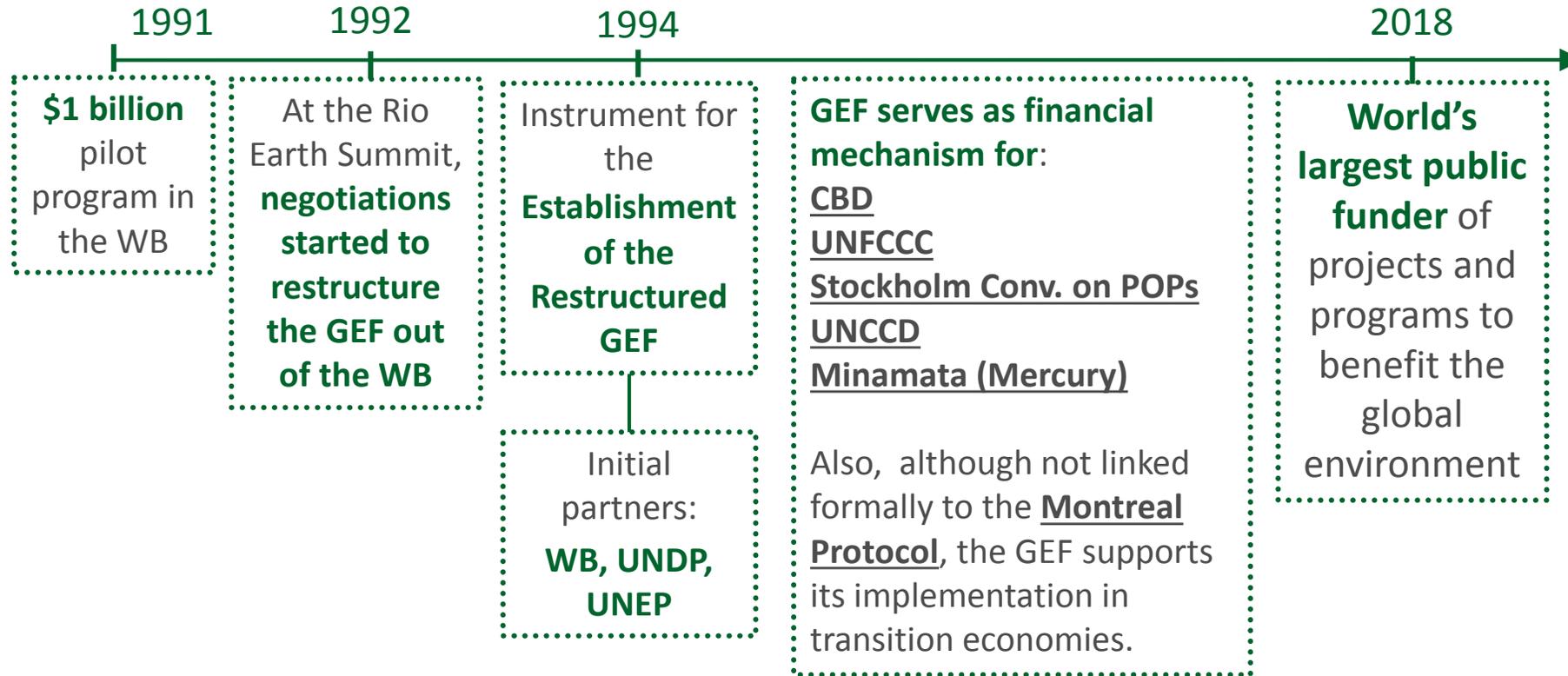
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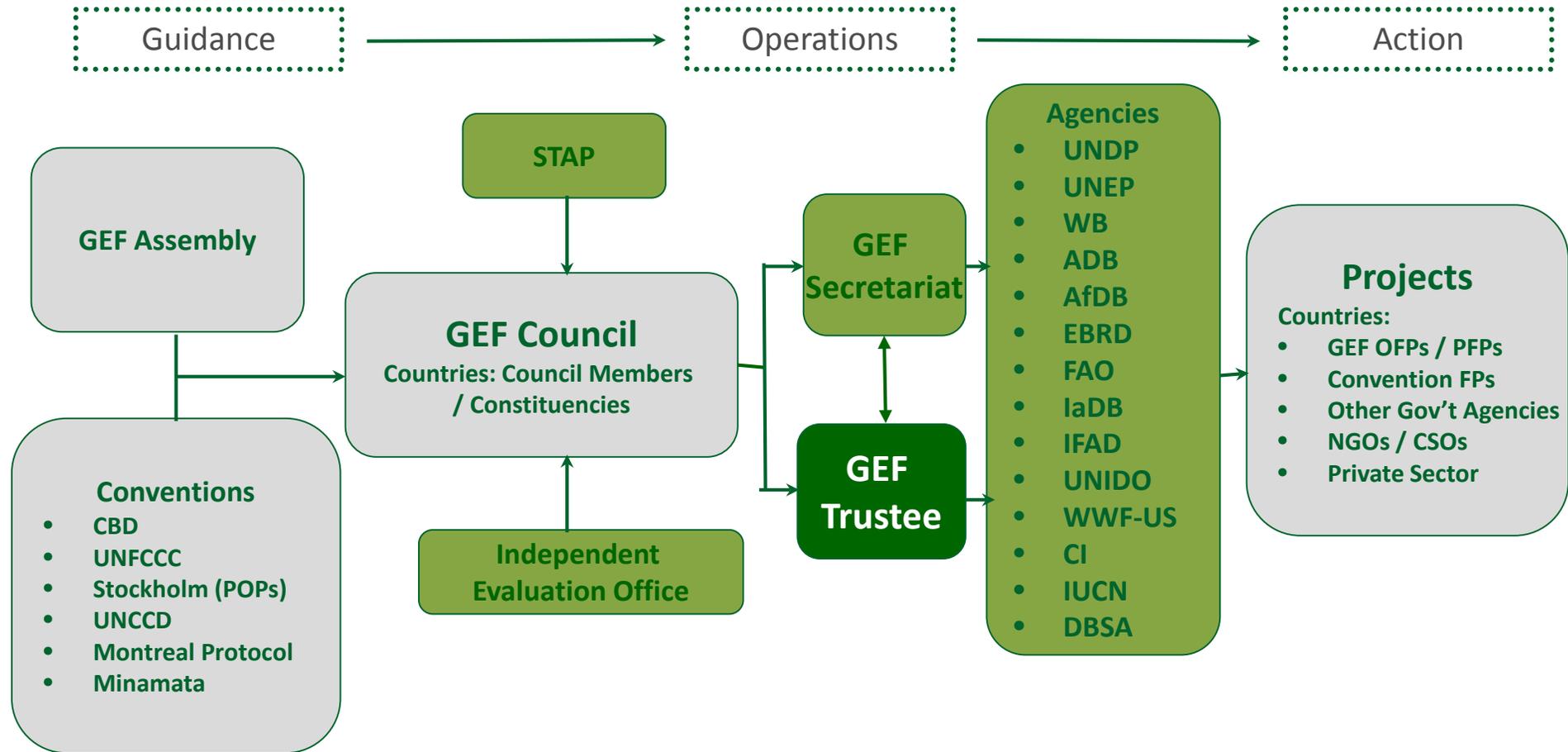
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History of the GEF



GEF Partnership

Institutional Framework

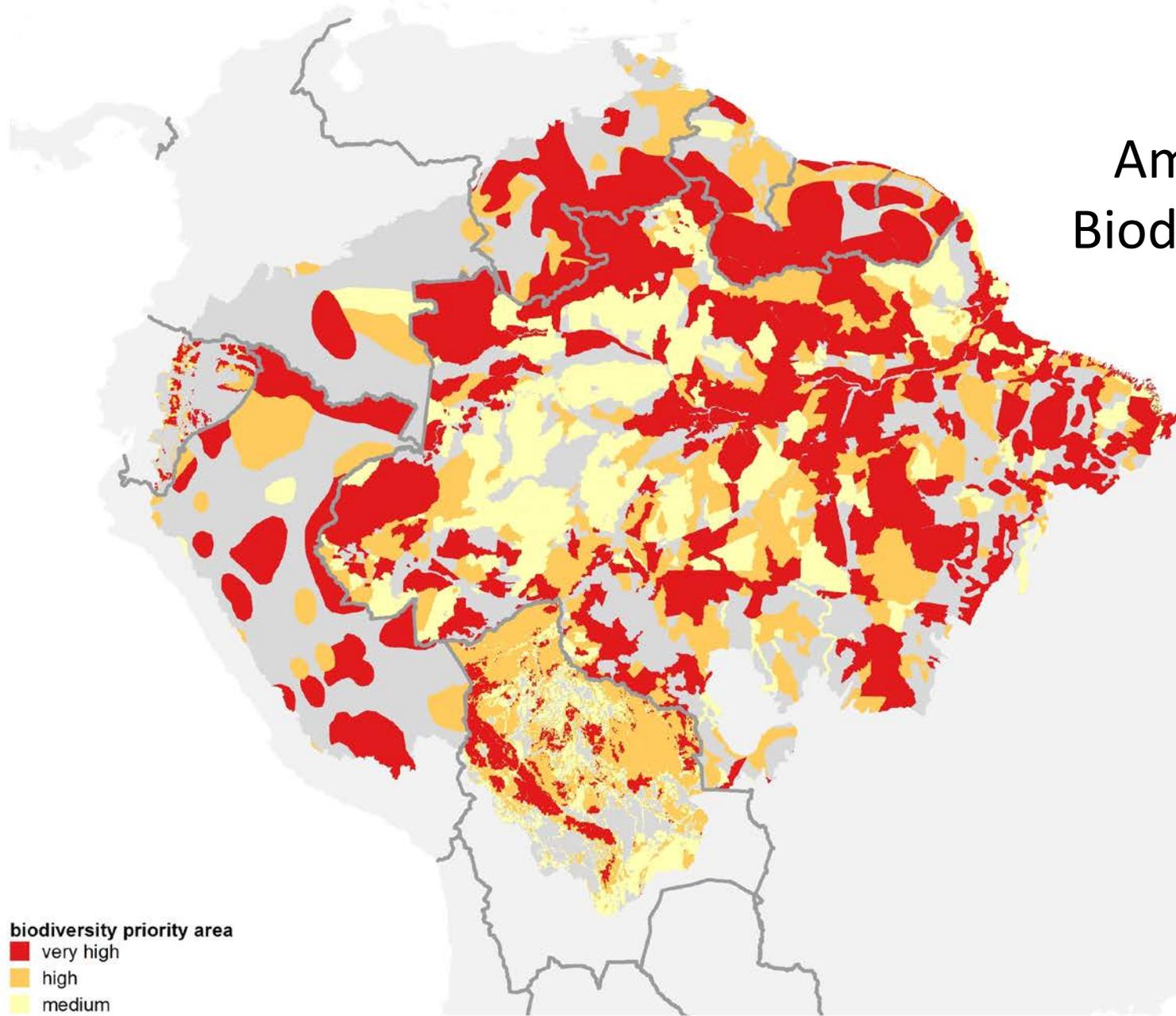


THE AMAZON BIOME



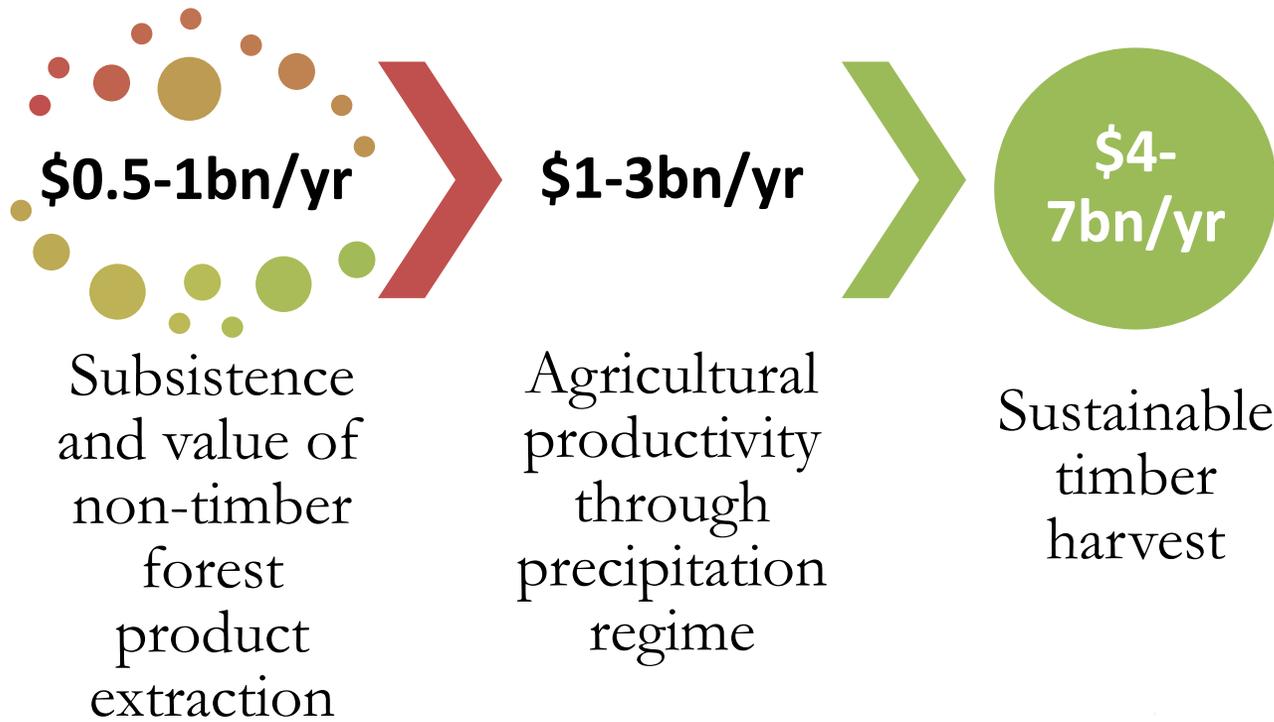
- ▶ 6.70 million km²
- ▶ Shared by 8 countries
- ▶ World's largest tropical wilderness and most biologically diverse place
- ▶ 40% of the planet's remaining rainforest
- ▶ World's largest freshwater system (6,600 km³)
- ▶ Contains 90-140 billion metric tons of carbon
- ▶ 610 PAs and 2,344 indigenous territories that cover 45% of the basin

Amazon Biodiversity



Data sources: Conservation International 2015 collection from multiple sources. Guiana Shield: Bernard, C., A. Upgren, and M. Honzak. 2011. Review of the Guiana Shield Priority Setting Outcomes: Narrative Report. Conservation International, Georgetown, Guyana; Bolivia: Araujo, N., R. Müller, C. Nowicki & P. Ibisch. 2010. Prioridades de conservación de la biodiversidad en Bolivia. MMAyA & SERNAP. La Paz, Bolivia; *Brazil*: MMA 2015; *Ecuador*: Cuesta, F., Perlavo, M., Ganzenmüller, A., Sáenz, M., Novoa, J., Riofrío, G. y K. Beltrán. 2006. Identificación de vacíos y prioridades de conservación para la biodiversidad terrestre en el Ecuador Continental. Reporte Técnico. Fundación EcoCiencia, The Nature Conservancy, Conservación Internacional y Ministerio del Ambiente del Ecuador. Quito; *Peru*: INRENA, 2008

Amazon ecosystem services deliver sustainable benefits



Free-rider conundrum. Most ecosystem benefits are global and regional public goods.

BRAZILIAN PRODUCTION AND EXPORT RANKING

AT WHAT COST?



Source: Valor Setorial Agronegócio, 2014

DEFORESTATION IN ATLANTIC RAINFOREST 85%

DEFORESTATION IN CERRADO 51%

DEFORESTATION IN AMAZON 15%

Amazon and the Paris Agreement

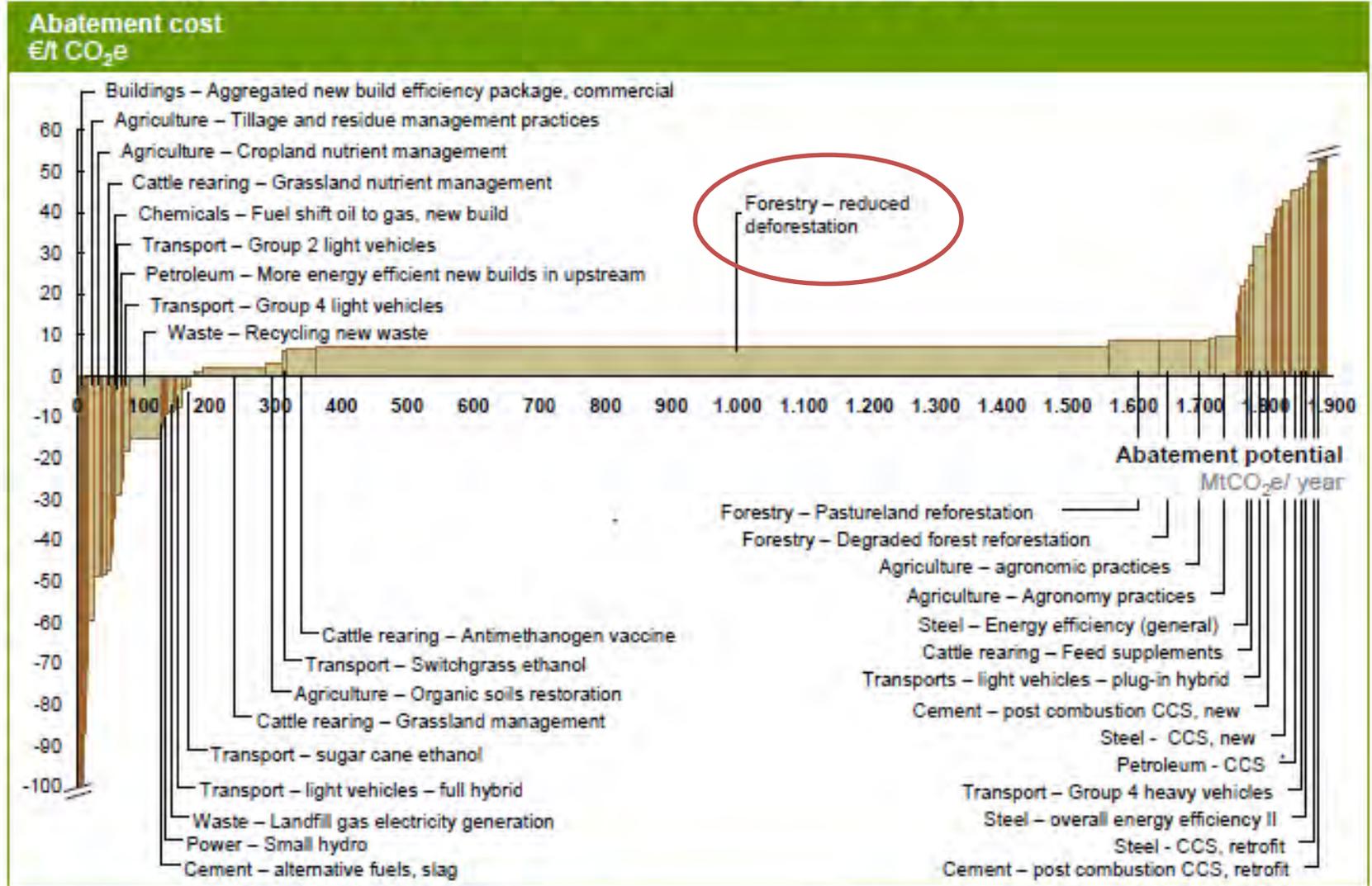
- Brazil's Nationally Determined Contribution (NDC) under the Paris Agreement commits to reducing GHG emissions by 37 percent by 2025 and 43% by 2030 (baseline: 2005 levels).
- 46% of Brazil's GHG emissions (2015) comes from land use change and forests.
- Key NDC commitments:
 - ✓ Achieve zero illegal deforestation in the Amazon rainforest by 2030;
 - ✓ Restore and reforest 12 million hectares (29.6 million acres) by 2030; and
 - ✓ Restore 15 million hectares of degraded pastureland and enhance 5 million hectares of integrated cropland-livestock-forestry systems by 2030.

→ *Amazon biome is decisive for success of Paris Agreement*



Where can
Brazil achieve
cost-effective
GHG
emission?

Brazilian greenhouse gas abatement cost curve in 2030



SOURCE: Global Abatement Cost Curve v2.0. "Pathways to a Low-Carbon Economy for Brazil"

→ Amazon biome has potential to deliver extensive GHG reductions that are significant for global emission goals, at comparatively low average cost

Where can
Brazil achieve
cost-effective
GHG
emission?

- Annual cost of abating forestry-led GHG emissions in Brazil ~ \$2.1 billion over next 20 years for initiatives directly related to curbing deforestation.
- This figure increases to \$4.8 billion if initiatives are included that are required to increase socio-economic development of rural population most affected by deforestation.
- Implies a cost of carbon of ~\$6.5 per tCO₂e

→ *Amazon biome has potential to deliver extensive GHG reductions that are significant for global emission goals, at comparatively low average cost*

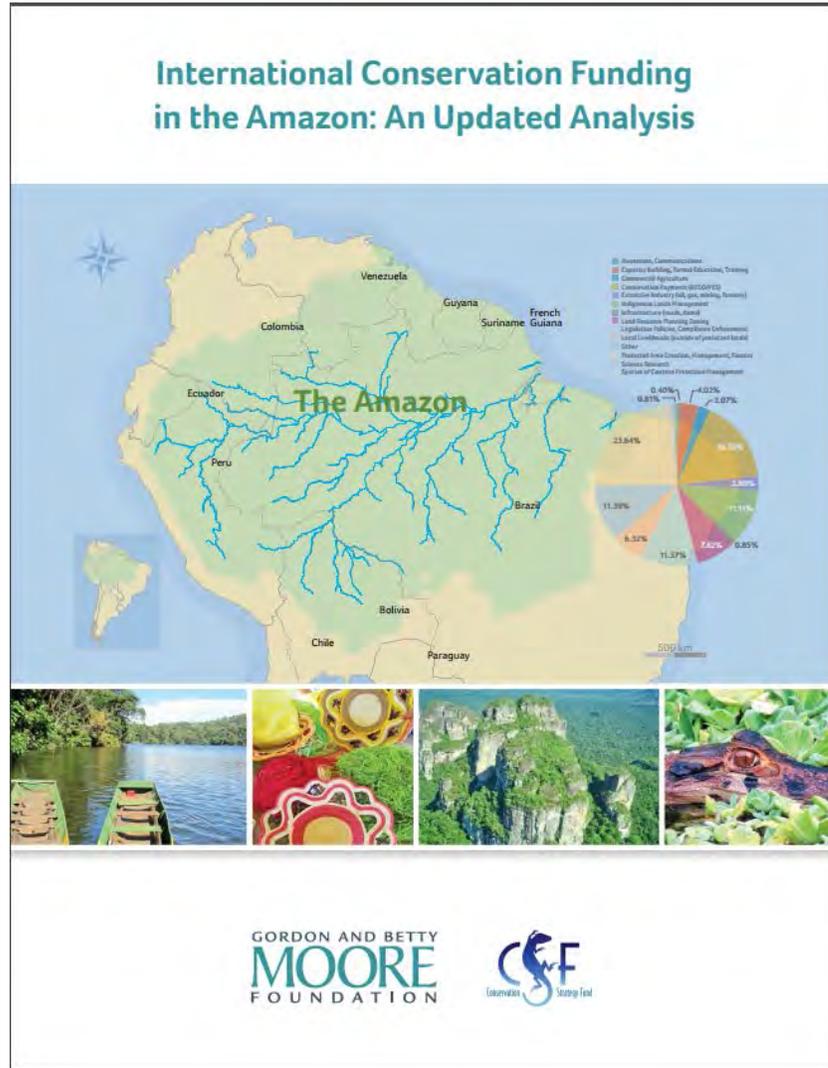
Paris Agreement Article 6

- Governments exploring carbon pricing.
- Over 30 major Brazilian companies leading with a simulation of an emissions trading scheme (ETS), including:
 - ✓ Auctioning and bonds markets
 - ✓ Assessment of company emissions submissions
 - ✓ Penalties for non-compliance.
- Based on simulation, companies issued a communique to the government on principles for carbon pricing policy design.
- Companies in India are now also pursuing simulation.

→ *Carbon schemes potentially catalytic, but not yet at scale*



International Funding for the Amazon – 2012-15



- **Amazon Fund established in 2008:**

- ✓ Managed by BNDES (Brazilian Development Bank)
- ✓ Donations and net returns from financial investments

- **Amazon Fund supports projects related to:**

- ✓ Management of public forests and protected areas;
- ✓ Environmental control, monitoring and inspection;
- ✓ Sustainable forest management;
- ✓ Economic activities created with sustainable use of the vegetation;
- ✓ Ecological and economic zoning, territorial arrangement and agricultural regulation;
- ✓ Preservation and sustainable use of biodiversity; and
- ✓ Recovery of deforested areas

Economic incentives



- **Norway payment for performance agreement (Brazil, Peru):**

- ✓ Brazil signed agreement with Norway in 2008 for 5-year period, with Norwegian pledge of up to \$1 billion to be donated to Amazon Fund
- ✓ Norway paid average of 925 million crowns (\$113M) in period 2009-2016
- ✓ Decreased to 350 million crowns (\$42.9M) for Brazil's performance in 2016 due to increase in deforestation rate
- ✓ In December 2013, Brazil/Norway expanded and extended the agreement to December 2021
- ✓ Norway remains largest donor, but Germany and Petrobras also contribute

Economic incentives



...more incentives to halt deforestation

- Carbon price expected to increase over time...
- Most deforestation in Brazil is illegal and untaxed, robbing the government and most people of revenue.
- Price difference of up to 40% between legal and illegal wood, so GDP and value can be created through adequate law enforcement (Global Forest Watch)
- Recreation, ecotourism, NTFPs, pharmaceuticals and phytotherapeutics, bioprospecting.

→ Economic incentives to halt deforestation are multifold, yet socio-economic dynamics, lack of law enforcement and market price fluctuations pose issues



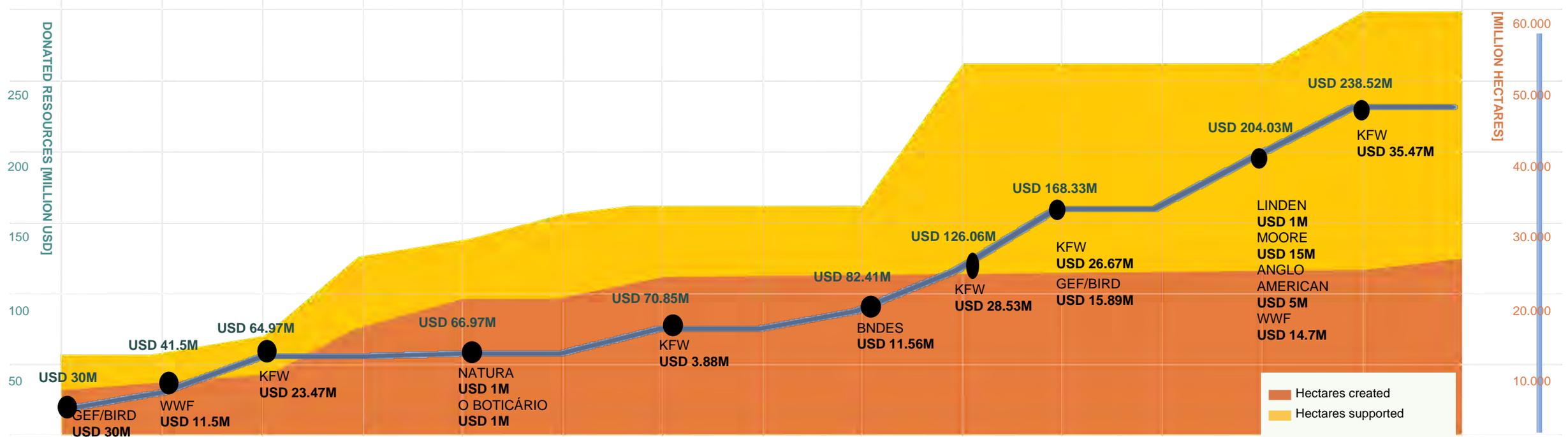
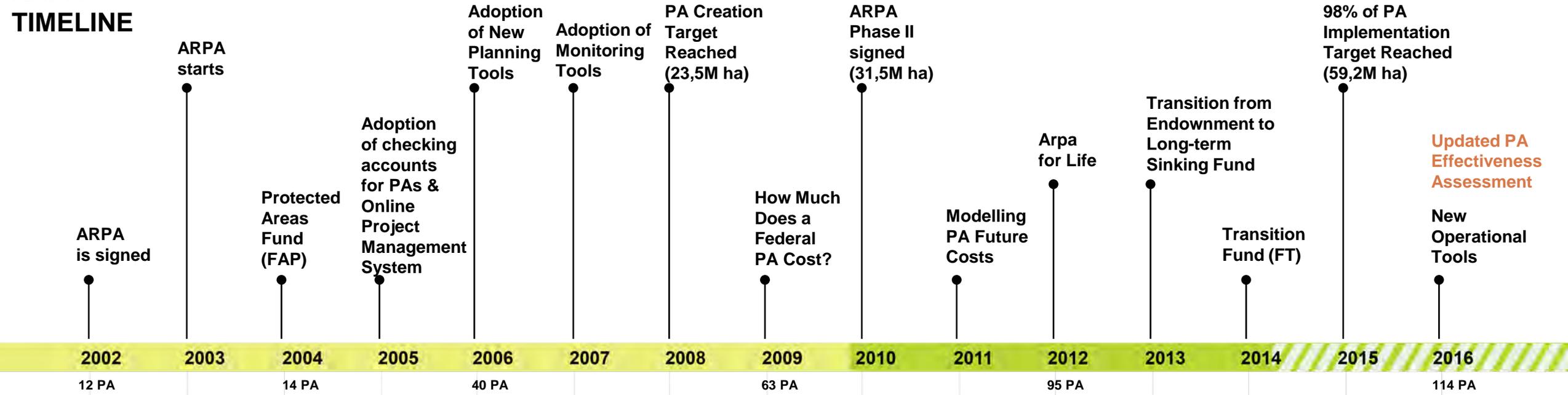
Amazon Region Protected Areas Program (ARPA)

- ARPA's starting goal was to create new Protected Areas (PAs) and consolidate existing ones in the Brazilian Amazon to extend protection to 50 million hectares.
- Target was raised to 60 million hectares, twice the size of Germany.
- GEF support entailed three main objectives:
 - ✓ Identify and create new strict PAs;
 - ✓ Effective establishment of these new areas; and
 - ✓ Develop long-term sustainable management tools and mechanisms for effective protection within all Amazonian strict PAs.
- FUNBIO, Brazilian Biodiversity Fund, manages ARPA's financial resources.

→ GEF grant funding acts as seed capital to catalyze additional funds from other partners (see next slide).



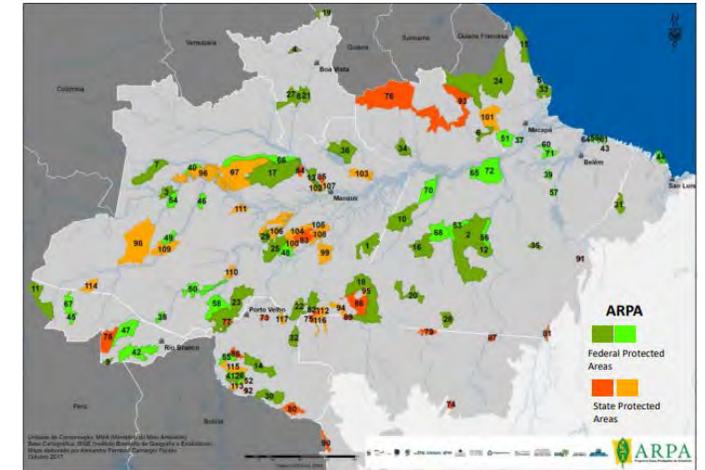
ARPA TIMELINE



Amazon Region Protected Areas Program (ARPA)

- ARPA became only environmental project to win American Treasury's “**Development Impact Honors**” award (2012) – recognizing program as “especially notable and impactful”.
- ARPA-supported PAs **avoided carbon emissions** equivalent to the total amount generated annually through motorized transport worldwide (2005-2015).
- **ARPA achieved 100% of its target in 2017**, with support extended to 117 PAs over 60 million hectares.

→ Benchmark and model for similar programs in Peru, Colombia and beyond.



Sustainable Forest Management

GEF-7 Strategy

- Creating a better enabling environment for forest governance;
- Supporting rational land use planning across mixed-use landscapes;
- Strengthening of protected areas;
- Clarifying land tenure and other relevant policies;
- Supporting the management of commercial and subsistence agriculture lands to reduce pressure on adjoining forests; and
- Utilizing financial mechanisms and incentives for sustainable forest utilization such as markets, REDD+ and other PES



Brazil, Colombia, and Peru = 83% of the Amazon Basin

- **Brazil controls 60%** of the Amazon. In contrast with deforestation rates steadily dropping between 2004 and 2012, the recent weakening of the federal forest code resulted in an increase in the annual deforestation in 2016.
- **Peru controls 13%** of the Amazon. Deforestation rates rising sharply in recent years due to a lack of governance, and a renewed emphasis on development.
- **Colombia holds 10%** of Amazon forests, and has seen a drop in deforestation rates along with a new monitoring system, better protection, and sustainable ranching. However, this past year deforestation increased.

OTHER PARTICIPATING GEF AGENCIES:



BRAZIL

- Amazon Sustainable Landscapes

-

- **\$60.3M**

- Approved

- December 2017



COLOMBIA

- Connectivity and Biodiversity
- Conservation

- **\$ 21M**

- Approved

- September 2017



PERU

- Productive Sustainable Landscape

-

- **\$ 18.3M**

- Approved

- November 2017



PERU

- Securing the future of Protected Areas in Peru

- **\$ 9.01M**

- Approved

- December 2017



Coordination and Learning \$5M Approved August 2017

THEORY OF CHANGE

Objective of ASL Program: Protect globally significant biodiversity and implement policies to foster sustainable land use and restoration of native vegetation cover in the Amazon

Capacity of and regional cooperation between key players improves the protection of significant biodiversity and the integrity ecosystem services of the Amazon region can be achieved

Capacity Building and Regional Cooperation

Integrated amazon protected areas

Integrated landscape management

Policies for protected and productive landscapes

An adequate area of the Amazon is conserved under various regimes (protected areas and indigenous lands)

Agriculture, degraded and forest lands are managed sustainably and with zero illegal deforestation tolerance

National policies and strategies support sustainable development, aiming to minimize deforestation and loss of ecosystem services

Protected Areas

- Creation new protected areas

Improved Management protected areas

Financial sustainability



Landscape Integrated Management

Land use planning/zoning

- Land use plans
- Climate change mitigation/adaptation plans
- Life plans for indigenous communities

Sustainable production

- Sustainable forest Management and restoration
- Productive systems
- Value chains and Green business

Conservation, restoration and sustainable use agreements

Policies/Incentives for protected and productive Landscapes

Legal instruments

Inter-sectoral agreements

Economic and financial incentives for conservation and productive systems

Monitoring of state of the territory and land use

Capacity, Communications and regional cooperation

Capacity strengthening

Project/ Program Coordination

Knowledge exchange

Lessons learned

Communications and sensitization

Project/Program monitoring



Brazil - Amazon Sustainable Landscapes Project



Expand the area under legal protection and improve management of Protected Areas, and increase the area under restoration and sustainable management in the Brazilian Amazon.

Components:

1. Amazon Protected Areas System
2. Integrated Landscape Management
3. Policies for Protection and Recovery of Native Vegetation
4. Capacity Building, Cooperation

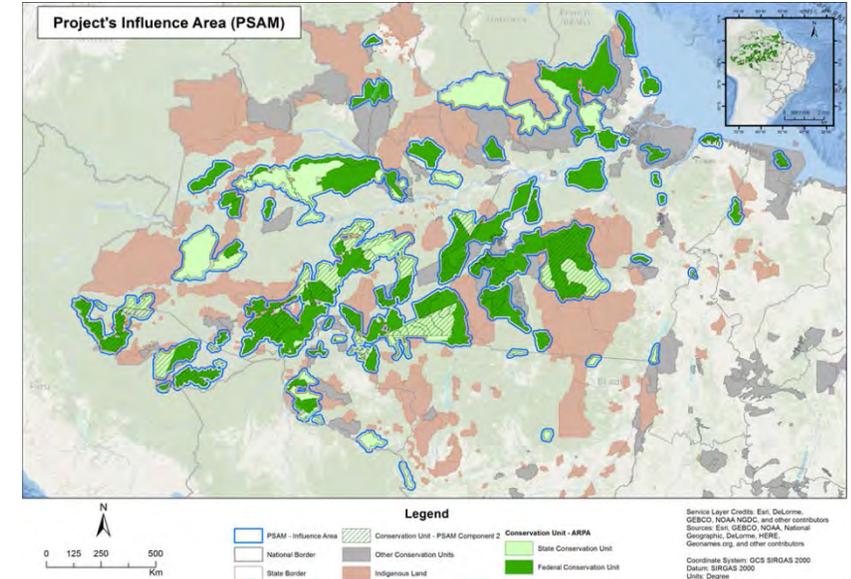
Project amount: US\$60.3 million

Executing Partners: Ministry of environment in partnership with Fundo Brasileiro de Biodiversidade - (FUNBIO), Conservacao Internacional-Brazil (CI- Brazil), Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Servicio Forestal Brasileiro (SFB), public environment agencies

GEF Implementing Agency: WB



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Project Sites. 60 million ha of supported PAs (new and 114 pre-existing); ILM actions in the states of Amazonas, Pará, Rondônia, and Acre

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Colombia - Connectivity and Biodiversity Conservation in the Colombian Amazon



WB- implemented component

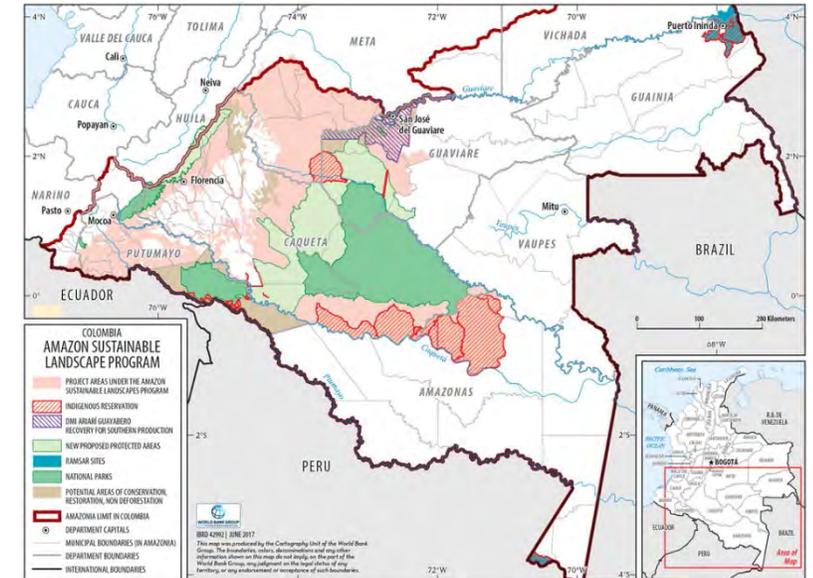
Improve governance and promote sustainable land-use activities in order to reduce deforestation and conserve biodiversity in the Project area

Components:

1. Protected Areas Management and Financial Sustainability
2. Forest Governance, Management and Monitoring
3. Sectoral Programs for Sustainable Landscape Management
4. Project Coordination, Management, Monitoring and Evaluation

Project amount: US\$12 million

Executing Partner: Ministry of Environment and Sustainable Development, Heritage Natural Fund for Biodiversity and Protected Areas, in partnership with National Natural Parks unit, Sinchi Institute, IDEAM, Corpoamazonia, CDA, local governments, NGOs



Project Sites. Serranía de Chiribiquete NP (PNNSCH); Alto Fragua Indi Wasi NP (PNN AFIW); Paya NP; Serranía de Churumbelos Auka Wasi NP (PNNSCHAW); Medicinal Plants Orito Ingi-Ande Flora Sanctuary; Corridor Paramos Miraflores/Picachos, Bajo Caguan and Serrania La Lindosa, Capricho, Cerritos and Miroloindo; 22 indigenous reserves.



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Colombia - Connectivity and Biodiversity Conservation in the Colombian Amazon



UNDP- implemented component

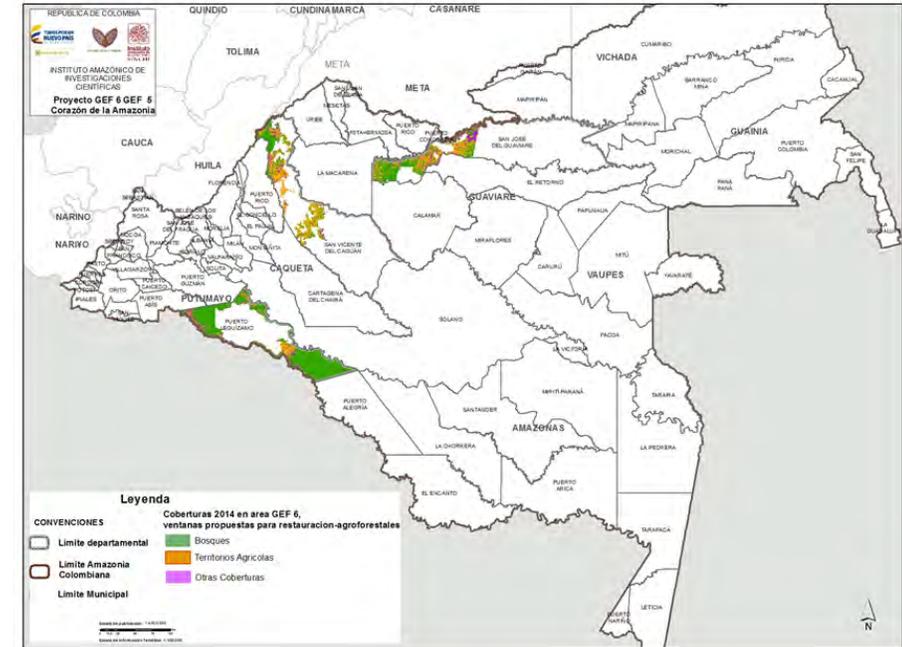
Improve the connectivity and conserve biodiversity through the strengthening of institutions and local organizations to ensure integral low-carbon-emission management and peace building

Components:

1. Rural development with a low-carbon-emission approach and capacity-building for mainstreaming environmental management and peacebuilding
2. Knowledge Management and Monitoring and Evaluation

Project amount: US\$9 million

Executing Partners: Ministry of Environment and Sustainable Development, Heritage Natural Fund for Biodiversity and Protected Areas, in partnership with National Natural Parks unit, Sinchi Institute, IDEAM, Corpoamazonia, CDA, local governments, NGOs



Project Sites: Caqueta: Guayas-Caguán Corridor, axis of connectivity Chiribiquete NP: San Vicente del Caguán; Guaviare: Integrated Management District (IMD) – Guayabero Sector, axis of connectivity Macarena NP – AMEM: San Jose del Guaviare; Putumayo: Altofragua NP – La Paya NP Corridor: Puerto Leguizamo.



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Peru - Sustainable Productive Landscapes in the Peruvian Amazon

Generate multiple global environmental benefits through the application of an integrated approach to the management of Amazonian landscapes

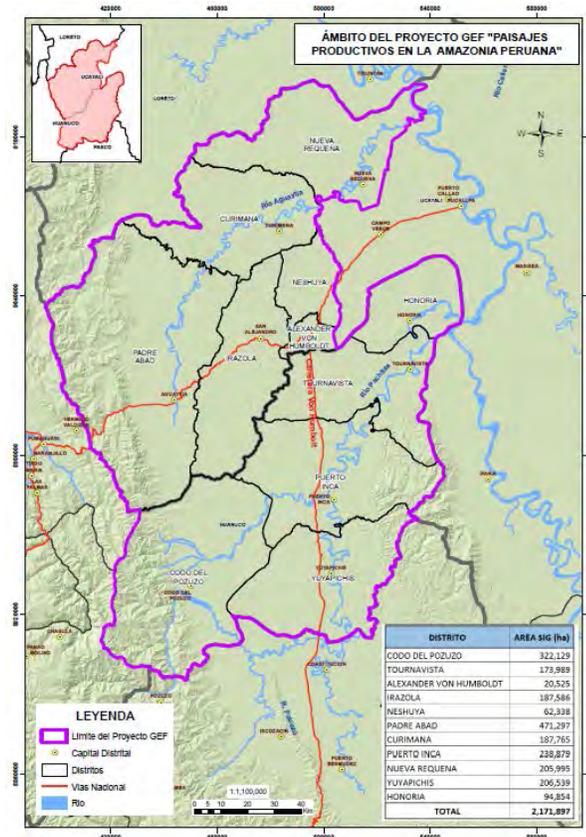
Components:

1. Improved policy planning and governance to reduce deforestation and enhance sustainable production
2. Market and incentive mechanisms promote sustainable production practices
3. Technical capacity installed to restore and sustain ecosystem services in target landscape

Project amount: US\$18.3 million

Executing Partners: Ministry of Environment (MINAM) in partnership with the National Forest and Wildlife Service (SERFOR), local governments, NGOs and indigenous organizations

GEF Implementing Agency: UNDP



Project Sites. 8 districts located in the regions of Ucaяali and Huanuco



Peru - Securing the Future of Peru's Natural Protected Areas

Promote long-term financial sustainability for the effective management of the National System of Protected Natural Areas of Peru (SINANPE) for the protection of globally important biodiversity and ecosystem services in the Amazon Biome

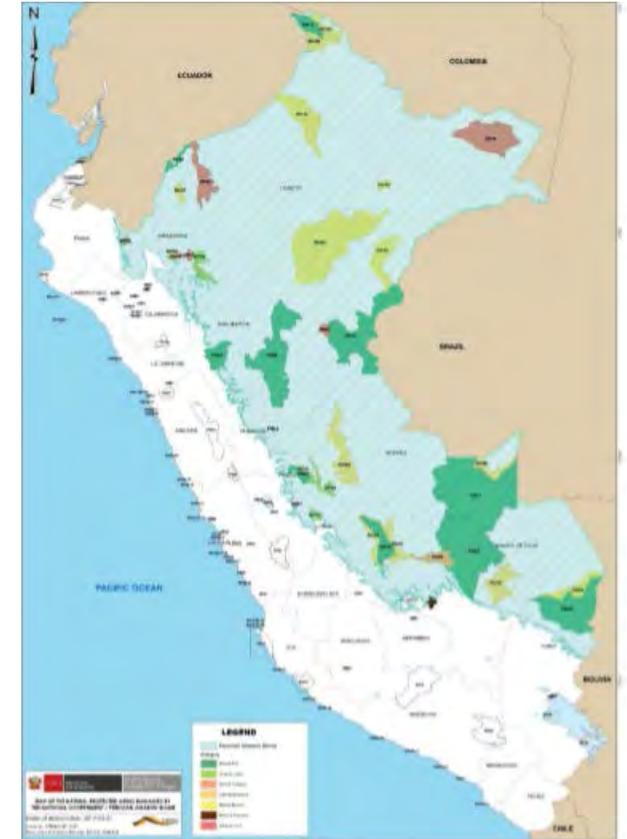
Components:

1. Development of a multi-partner, public, private initiative for long-term financial sustainability of the Natural Protected Areas in the Peruvian Amazon
2. Diversification of sources to increase NPA financing
3. Implementation of PdP Action Plan Measures to consolidate and improve the effective management of Amazon NPAs
4. Project Coordination and M&E

Project amount: US\$9.01 million

Executing Partners: SERNANP, PROFONANPE

GEF Implementing Agency: WWF



Project Sites. Protected Areas in the amazon region: 16 NPAs of indirect use; 18 NPAs of direct use and. and 4 Reserved Zones

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ASL Coordination Project



To strengthen coordination, access to information and capacity of the national projects stakeholders under the GEF 6 Amazon Sustainable Landscape Program

1.1. Knowledge Management and Capacity Building

2. Strengthen access to information and capacity among national projects stakeholders under the GEF ASL Program

Support to strategic plans and processes

Best practices and Lessons Learned

Knowledge Exchange and capacity building

Knowledge platform

2. Program Coordination and Communications

Strengthen coordination, monitoring and communication amongst national child projects under the ASL Program

Program Coordination

Program Monitoring

Program Communications

Amount: \$5 million
Execution: WBG
Main co-financer:
Moore Foundation

ASL: GLOBAL ENVIRONMENTAL BENEFITS

GEF Corporate Results	Replenishment Targets	Project Targets				
		Brazil	Colombia	Peru (UNDP)	Peru (WWF)	TOTAL
Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	60	3.4	1.8	16.7	81.9 million hectares
Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	5.9	0.8	1.8	0	8.5 million hectares
Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO ₂ e mitigated (include both direct and indirect)	141.1	9.7	15.8 (7.9 indirect)	0	166.6 million tons

→ ASL delivers multiple environmental benefits at scale

Curtis et al., Science, Sept. 2018

- Recent research on drivers of global forest loss suggests that between 2001 and 2015:
 - ✓ 27% of global forest loss can be attributed to deforestation through permanent land use change for commodity production;
 - ✓ Remaining areas (73%) maintained same land use over 15 years:
 - 26% of loss attributed to forestry
 - 24% of loss attributed to shifting agriculture;
 - 23% of loss attributed to wildfire.
- Despite corporate commitments, rate of commodity-driven deforestation has not declined.

→ To end deforestation, companies must eliminate 5 million hectares of conversion from supply chains each year.



Reduce deforestation from palm oil, soy and beef supply chains



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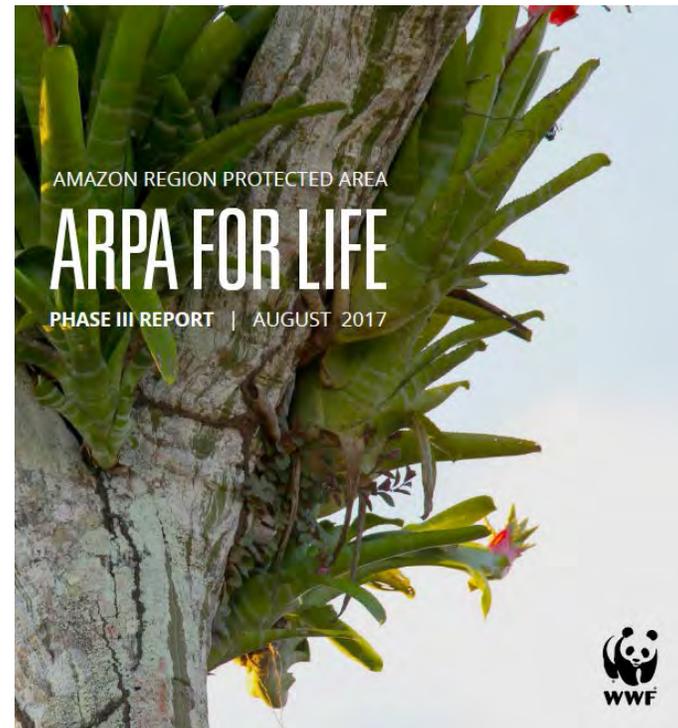
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Integrated Supply Chain Approach



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