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Science Panel for the Amazon
THE AMAZON WE WANT

Large-Scale Forest Restoration in the Amazon: opportunities and strategies

Marielos Peña Claros
Wageningen University &
Co-Chair of the Science Panel for the Amazon

Science Panel for the Amazon (SPA)

Established in **September 2019**, inspired by the Leticia Pact.

The SPA is convened under the auspices of the **Sustainable Solutions Network (SDSN)**. Dr. Jeffrey Sachs, the President of SDSN, is the convener of the SPA, Ms. Emma Torres is the Strategic Coordinator, and Dr. Carlos Nobre and Dr. Marielos Peña-Claros are the Co-Chairs.

Mission:
To synthesize and communicate scientific knowledge about the Amazon, integrated with Indigenous and local knowledge, to accelerate solutions for sustainable and equitable development.

Vision:
A global authority providing state-of-the-art, policy-relevant science and knowledge about the Amazon.

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Science Panel for the Amazon (SPA)

- **It is the first high-level regional scientific initiative dedicated to the Amazon.**
- The panel is now composed by **300 scientists** from around the world, with over 70% hailing from Amazonian countries, including 14 Indigenous scientists.
- The **Strategic Committee (ST) comprises 23 esteemed leaders** and influential voices from the Amazon region and beyond.
- The **Scientific Steering Committee (SSC)** is currently made up of **17 members** who guide the SPA's scientific efforts.
- The **Youth Advisory Committee (YAC)**, launched at the 2024 Summit of the Future, is formed by **13 members from 7 Amazonian countries** and will ensure that youth voices are integrated into the SPA's initiatives.

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Amazon Assessment Report 2021

The SPA launched the first Amazon Assessment Report at COP26 in Glasgow, deemed the "*encyclopedia of the Amazon*".

Key scientific recommendations

1. Immediate moratorium on deforestation in areas approaching a tipping point
2. Zero deforestation, degradation and man-made wildfires by 2030 in the entire Basin
3. Restore terrestrial and aquatic ecosystems
4. A vibrant bioeconomy of healthy standing forests and flowing rivers

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SPA Publications

Between 2021 and 2024, the SPA has released **17 Policy Briefs, 8 Statements, and other publications** at key events: COP27, the Amazon Presidents Summit in Belém, COP28, the 2024 HLPF, CBD COP16, and COP29.

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THE AMAZON PLAYS A KEY ROLE

In maintaining the regional and global climate balance and the maintenance of biodiversity

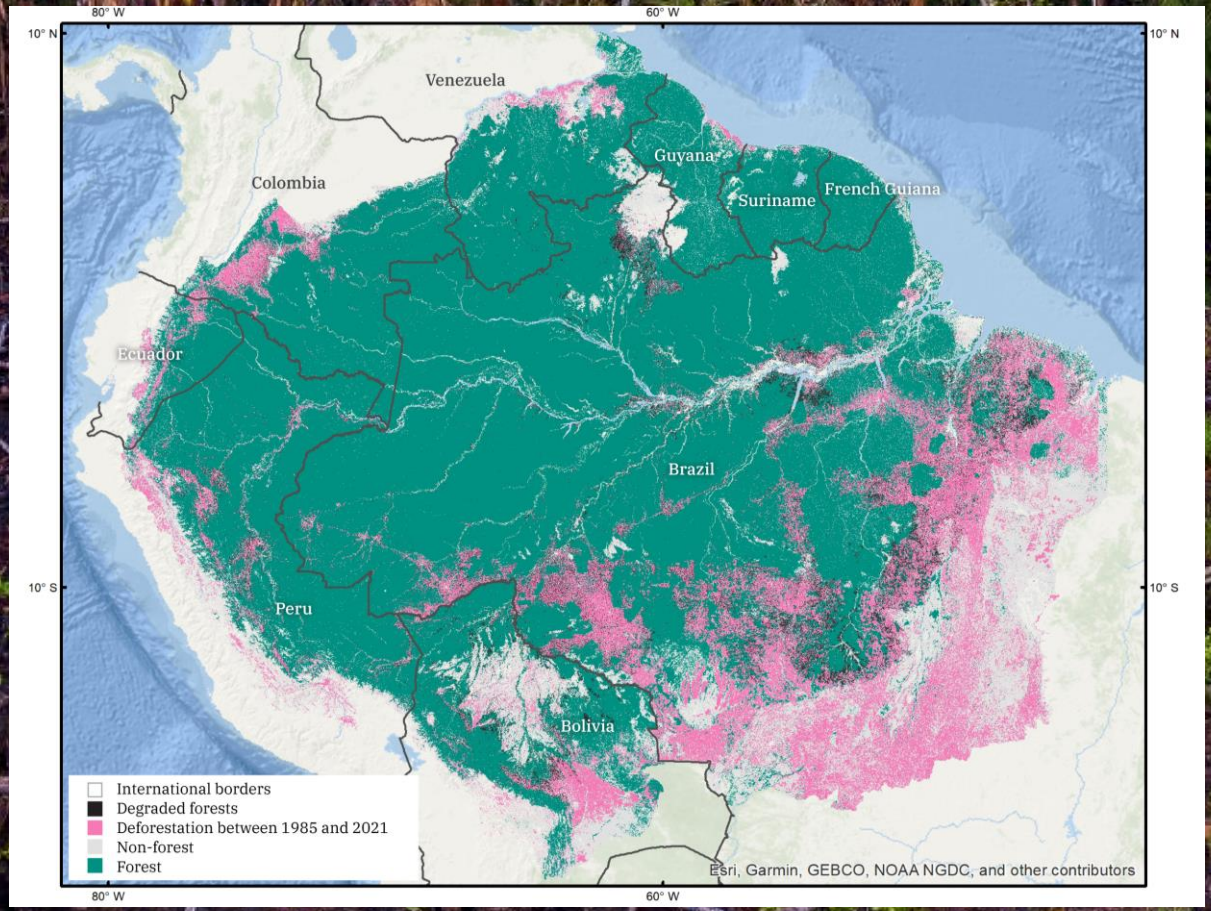
- ~13% of the planet's biodiversity
- Mosaic of >50 aquatic and terrestrial ecosystems
- 150-200 billion Carbon tones stored in soils and vegetation
- 16% of global land productivity
- Up 50% rain recycling
- 16-22% of the total of the world's river discharge
- Ecological networks responsible for the recycling of nutrients and the natural regeneration of the forest

FOTOGRAFIAS: Istock.com

Deforestation & Degradation

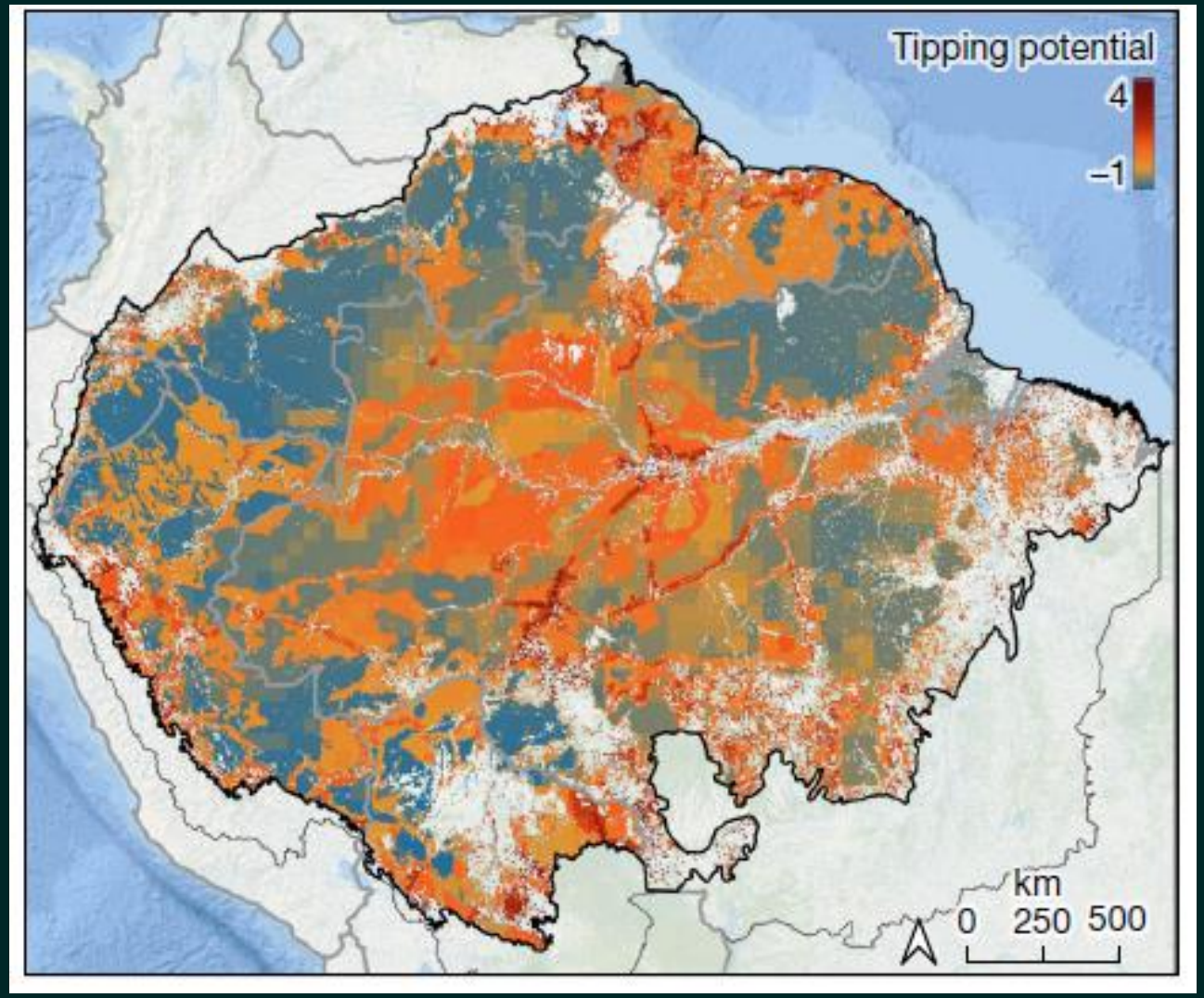
Agricultural expansion, particularly extensive cattle ranching, remains the main driver of deforestation

- 18% of the Amazon basin is deforested (in black)
- 17% of the ecoregion is degraded (in pink)
- >90% of deforestation has indications of illegality!



Source:Berenguer E. et al. (2021)

The Amazon is moving towards a critical condition of degradation



Flores et al 2024. Nature. Critical transitions in the Amazon forest system

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POLICY BRIEF

TRANSFORMING THE AMAZON THROUGH "ARCS OF RESTORATION"

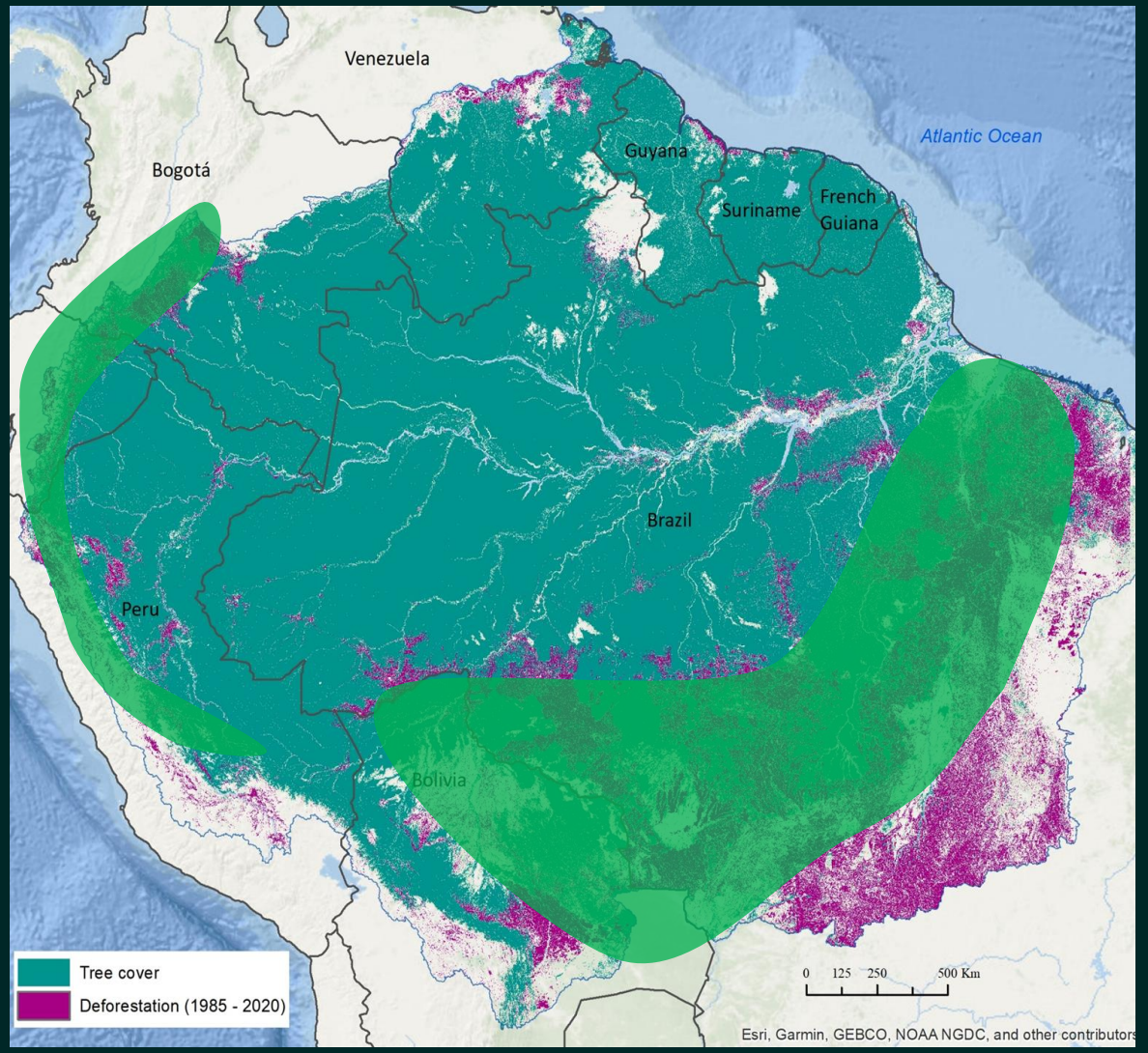
Jos Barlow • Liana Anderson • Erika Berenguer • Pedro Brancalion • Nathalia Carvalho • Joice Ferreira • Rachael Garrett • Catarina Jakovac • Nathália Nascimento • Marielos Peña-Claros • Ricardo Rodrigues • Judson Valentim

Ciritical need for large-scale forest restoration:

- Forest-rainfall fedback mechanism
- Forest connectivity along the Andes-Amazon

Brazilian government launched the "Arc of Restoration Initiative" in 2023

- Supported by the Brazilian Development Bank
- Aims to restore 24 million ha in by 2050



Where are the opportunities for large-scale restoration?

- Achieve ZERO deforestation
- Avoid forest degradation → 100 million ha can be restored

RESTORE FORESTS IN PROTECTED AREAS
provide over **0.8 M hectares** for restoration

RESTORING FORESTS IN UNDESIGNATED LANDS
provide over **2.8 M hectares** for restoration

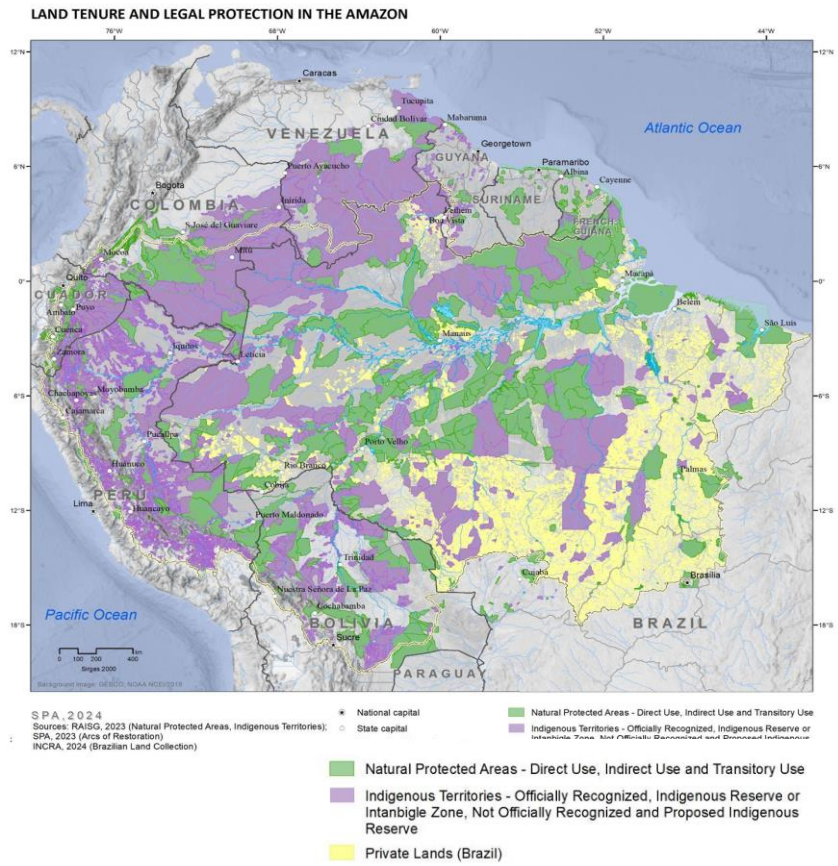
RESTORE AREAS CLEARED ABOVE LEGAL COMPLIANCE ON PRIVATE LANDS
In the municipality of Paragominas alone:
>500km of river margins and
>900 springs requiring restoration

RESTORE BEYOND LEGAL COMPLIANCE ON PRIVATE LANDS
In the state of Pará:
over **5 M ha** of cleared riparian zones that do not need to be restored by law.

SUSTAINABLE RESTORATION OF DEGRADED FARMLAND
over **24 M hectares** of degraded pastures in the Brazilian Amazon.

Scaling up restoration requires strategies that are appropriate to the diversity of ecological, social and cultural contexts

Fotos: Amazônia Real



In Brazilian Amazon - 30% of deforested areas:

- 0.8 Mi ha in Indigenous Lands
- 1.2 Mi ha in Conservation Units
- 19 million ha in private properties and vacant lands

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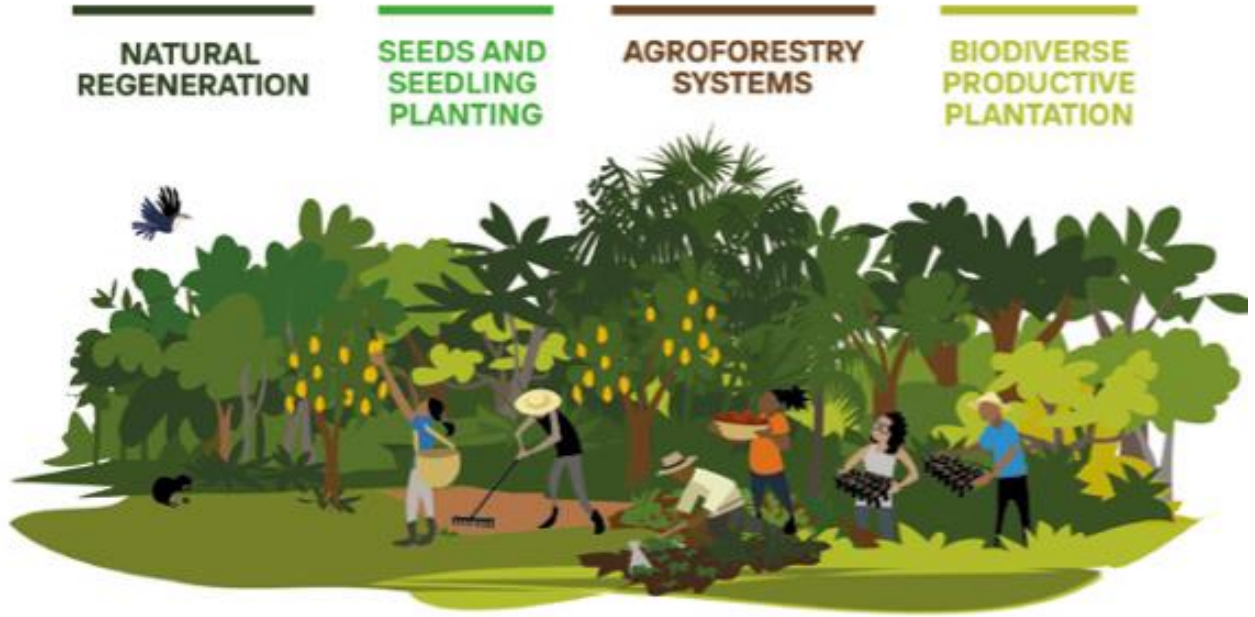
STRATEGIES FOR IMPLEMENTING AND SCALING UP FOREST RESTORATION IN THE AMAZON

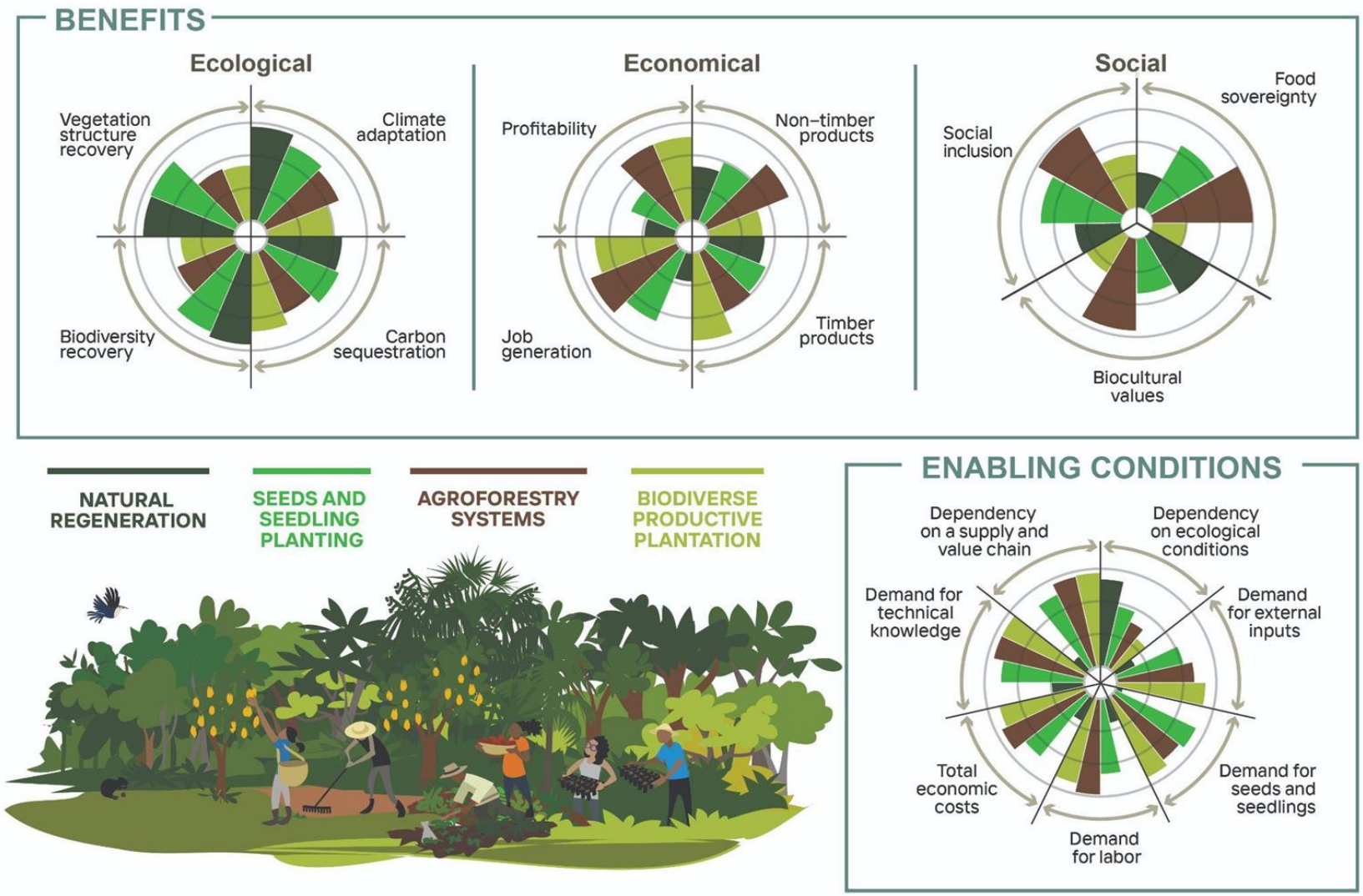
Catarina Jakovac, Nathália Nascimento*, Silvia C. Gallegos, Danielle Celentano, Daniel Mascia Vieira, Carolina Cristina Fernandes, Silvio Brienza Junior, André Pellicciotti*
**co-leading authors*

The diversity of ecological and socio-economic conditions in the Amazon requires multiple restoration strategies tailored to local contexts



Ecological benefit	High	High	Moderate	Moderate
Social outcomes	Low	Moderate	High	Low
Economic outcomes	Low	Moderate	High	High
Cost in US$ per ha	300 - 650	1,400 - 7,000	1,500-4,700	3,700 – 4,600

Different restoration strategies for different socio-ecological goals and conditions



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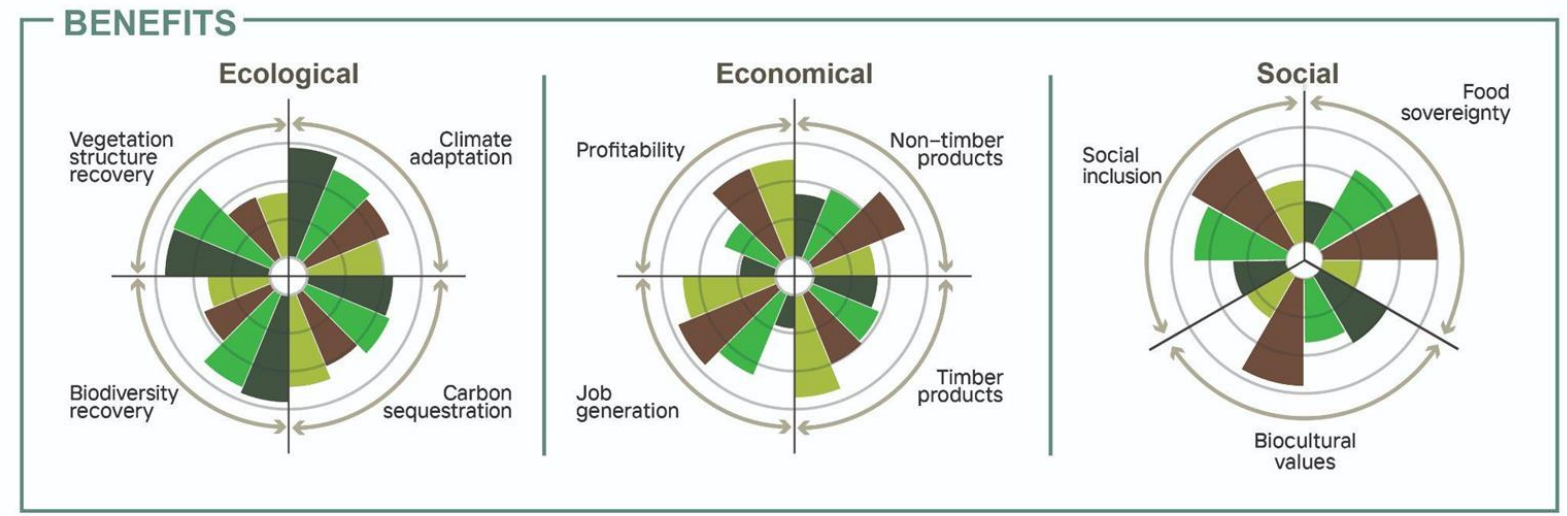

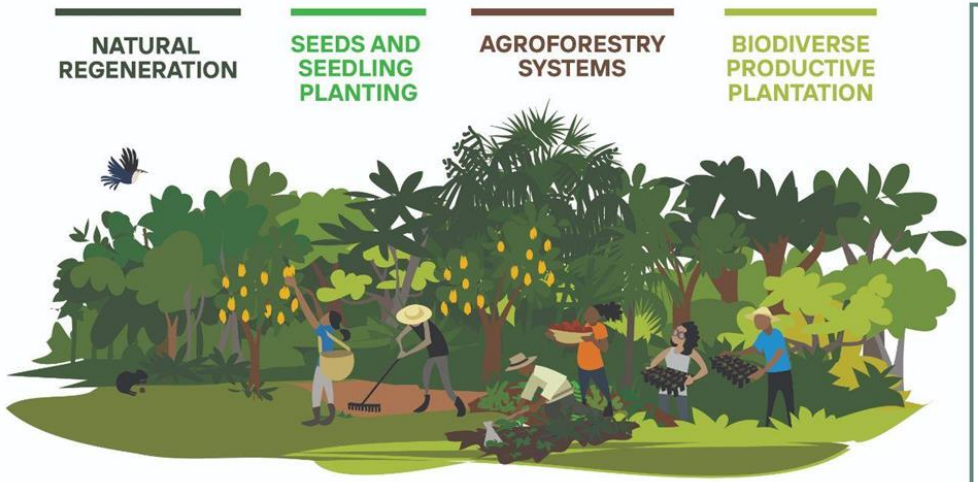

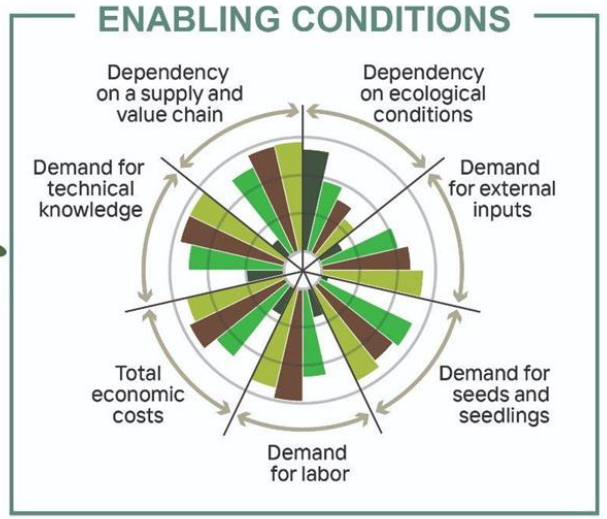

To ensure the success and long-term permanence of the restoration, restoration strategies **must be defined together with local actors and aligned with their needs and objectives.**

Recommendations for restoration in the Amazon

For the implementation:

1. Use the four ecological restoration strategies (natural regeneration, seed & seedling planting, agroforestry, biodiverse productive plantations)
2. Develop a supply chain for the production of native seeds and seedlings
3. Promote engagement, training and knowledge integration

For policy:

4. Strengthening public policies and governance
5. Promote the conservation of secondary forests
6. Promote different ecological restoration strategies

Finance and economy:

5. Ensure mechanisms of flexible financing that include all phases of restoration
6. Strengthen the Amazonian socio-bioeconomies to promote productive forest restoration

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Thank you!

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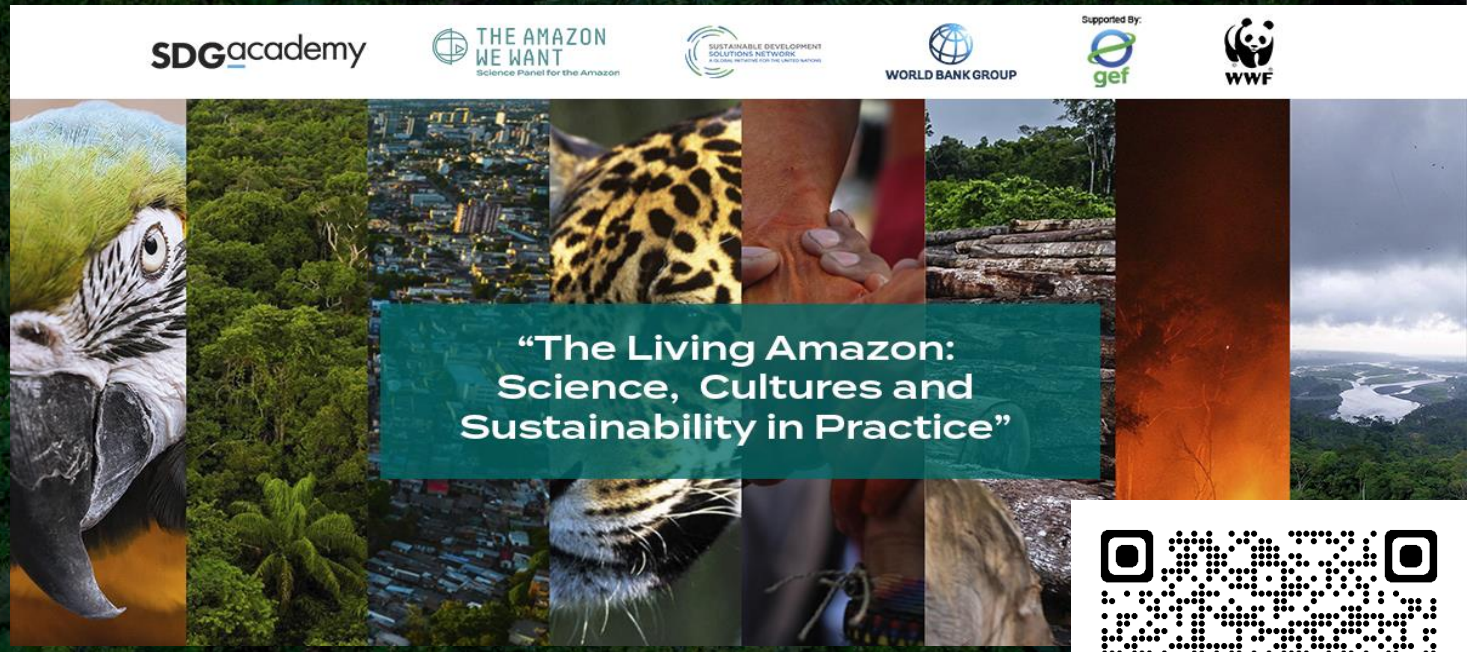
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