

Brief Report

COP30 comCiência:

Science, Territories, and Climate Future

museu
goeldi



COP30
comCiência





GOVERNMENT OF BRAZIL

PRESIDENT OF THE REPUBLIC

Luiz Inácio Lula da Silva

MINISTER OF SCIENCE, TECHNOLOGY AND INNOVATIONS

Luciana Santos

MUSEU PARAENSE EMÍLIO GOELDI

DIRECTOR

Nilson Gabas Júnior

COORDINATOR OF RESEARCH AND POST-GRADUATION

Marlúcia Bonifácio Martins

COORDINATOR OF COMMUNICATION AND OUTREACH

Sue Anne Costa

DESIGN DIRECTION

Sâmia Batista

COVER, GRAPHIC DESIGN, PUBLISHING, AND ILLUSTRATIONS

Marcos Andrade

TEXTS

Alberto Akama

Ana Prudente

Gleen Shepard

Ima Vieira

Marlúcia Martins

Márlia Coelho

Nelson Sanjad

Roberto Araújo

Erêndira Oliveira

REPORTING/SECRETARIAT

Elcio Costa

TEXT REVIEW

Iraneide Silva

PHOTOS

Adrya Marinho

Bruno Carachesti

Helena Lima

Janine Valente

Paula Sampaio



INTRODUCTION

With great satisfaction, we present this Brief Report, the result of the project “Dialogue Cycle - COP30 comCiência,” carried out by the Museu Paraense Emílio Goeldi. The document is the result of a collective construction that involved researchers and partners from various Amazonian institutions in six preparatory monthly meetings for the 30th United Nations Conference on Climate Change (COP30), held in Belém, Pará, Brasil.

The initiative brought together scientists, community leaders, communicators, and public managers in a series of meetings aimed at the co-production of knowledge about the challenges and possibilities of the Amazon in the face of the global climate crisis. These dialogues reaffirm the historical role of the Museu Goeldi, an institution with almost 160 years dedicated to research and the dissemination of knowledge, as a bridge between science, communities, and public policies, consolidating its leadership role in the construction of sustainable solutions for the future of the region.

The Brief Report summarizes reflections, scientific evidence, and strategic recommendations that emerged from these debates, addressing central themes such as direct and transparent climate finance, energy transition compatible with the Amazon biome, territorial governance and climate justice, integration between scientific and traditional knowledge, and strengthening of the socio-bioeconomy. In common, these agendas reaffirm that the Amazon is not just a biome, but a living, plural, and dynamic territory, inhabited by peoples who have been building knowledge and managing the forest with wisdom and reciprocity for millennia.

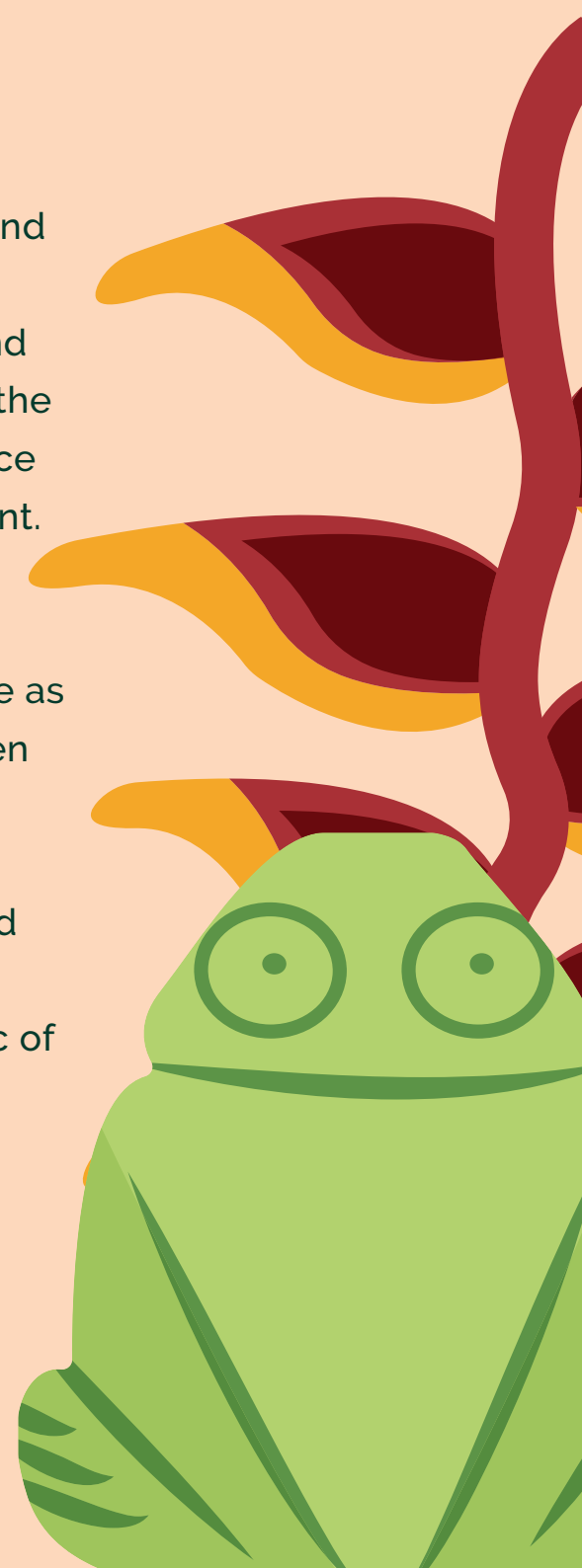
In the context of COP30, this document assumes strategic relevance: it convergently expresses the voice of Amazonian science and the voice of the forest peoples, demonstrating that the

solutions for the climate crisis already exist and are rooted in the territories and in practices of caring for nature. They lack, however, recognition, support, and amplification, so that they can inspire the world towards new pacts of coexistence between humanity and the environment.

May this work be, at the same time, a record and a commitment. May it serve as inspiration for lasting alliances between science and traditional knowledge, between innovation and ancestry, between the forest and the planet. And may Belém, the host of COP30, affirm itself as a global symbol of a new ethic of coexistence with nature.

Nilson Gabas Jr.

Director of Museu Goeldi



SUMMARY

Introduction

9

Key Themes

13

COP30 in Belém, 2025: A Historical Landmark

41

Consolidated Strategic Recommendations

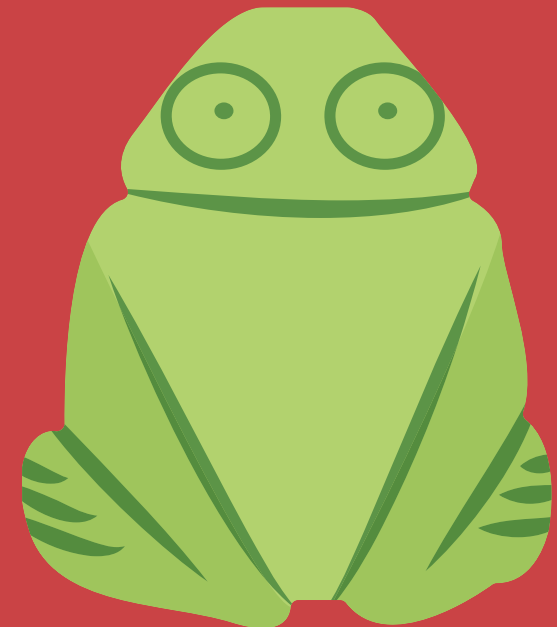
27

Final Considerations

47

Participants of the Dialogue Cycle

53



Introduction

In preparation for COP30, the Museu Goeldi, at its Research Campus¹, promoted a series of innovative dialogues bringing together scientists, local populations, communicators, and decision-makers. These meetings represent a milestone in the construction of collaborative knowledge about the Amazon and its central role in confronting the global climate crisis.

With 159 years of scientific production and the most complete collection on Amazonian biological and cultural diversity, Museu Goeldi positions itself as a fundamental bridge between science and the territories, consolidating a historical role in generating essential knowledge about the world's largest tropical forest, which is of strategic importance for understanding and tackling the climate crisis.

Facade of the Museu Goeldi Research Campus

Photo: Janine Valente

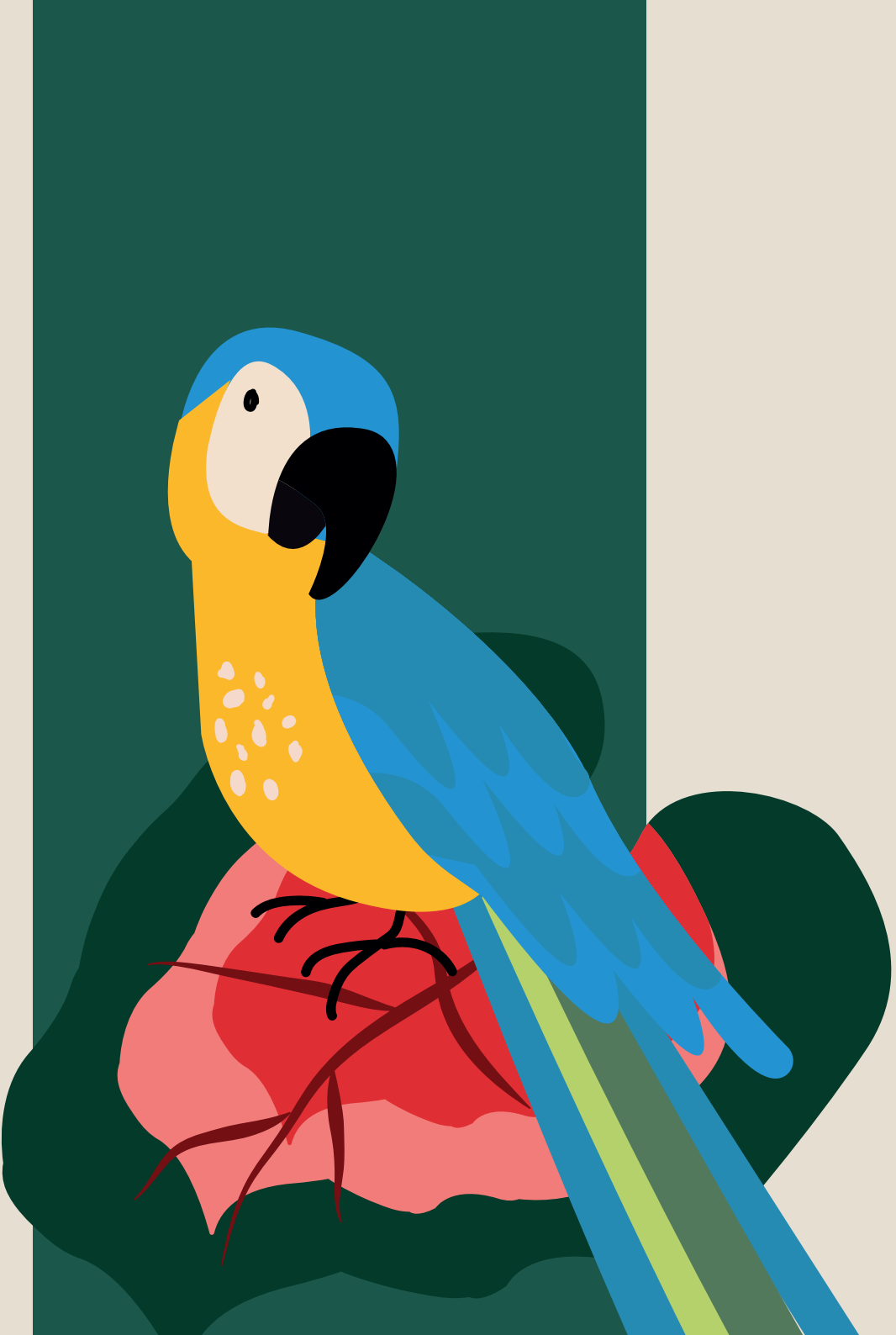
¹ - Installed in Belém in the Terra Firme neighborhood in 1978, it houses laboratories, 17 scientific collections (botany, zoology, archeology, ethnography, linguistics, paleontology, minerals, and rocks) and support structures for education and scientific outreach. It represents a strategic nucleus for the interdisciplinary study of the Amazon, where it connects science, heritage, and traditional knowledge, supporting the Museum's work at the forefront of Amazonian research.

The dialogues were structured with four fundamental strategic objectives:

1. Promote horizontal dialogue among scientists, local populations, and decision-makers, recognizing the legitimacy of different forms of knowledge and creating spaces for effective communication;
2. Expand collaborative networks in climate research among Amazonian scientists and communities, strengthening long-term bonds and creating sustainable partnerships;
3. Highlight the relevance of 159 years of systematic knowledge production by the Museu Goeldi, the first national scientific project for studying of the Amazon,

its extensive collection on Amazonian biological and cultural diversity, and its strategic importance for understanding and confronting the climate crisis;

4. Demonstrate the fundamental significance of Amazonian people and territories for the conservation of the Amazon and the global climate response, highlighting the leading role of traditional populations.



The dialogues addressed four fundamental thematic axes that structure the challenges and opportunities of the Amazon region:

Proposed Axes

- 1** Public policies based on scientific research, including Zero Deforestation, Restoration, and Reforestation, linked to the control of environmental degradation factors.
- 2** Accordance between the COPs of Biodiversity and Climate.
- 3** Amazonian biocultural diversity and ways of life in the territories.
- 4** Socio-biodiversity bioeconomy and valuation of environmental services.



"Replicando o Passado" Project
Photo: Helena Lima (Collection/MPEG)

Key Themes

The debates on Amazon's climate future reveal an unavoidable urgency: it is necessary to rethink how resources arrive and whom they truly serve.

The voices gathered in these dialogues point to a consensus: the ecological and energy transition in the Amazon cannot be imposed from outside, nor guided by interests that disregard the reality of the territories. Thus, we are invited to reflect on an essential principle: without territorial justice and without the autonomy of the peoples, there is no climate justice.

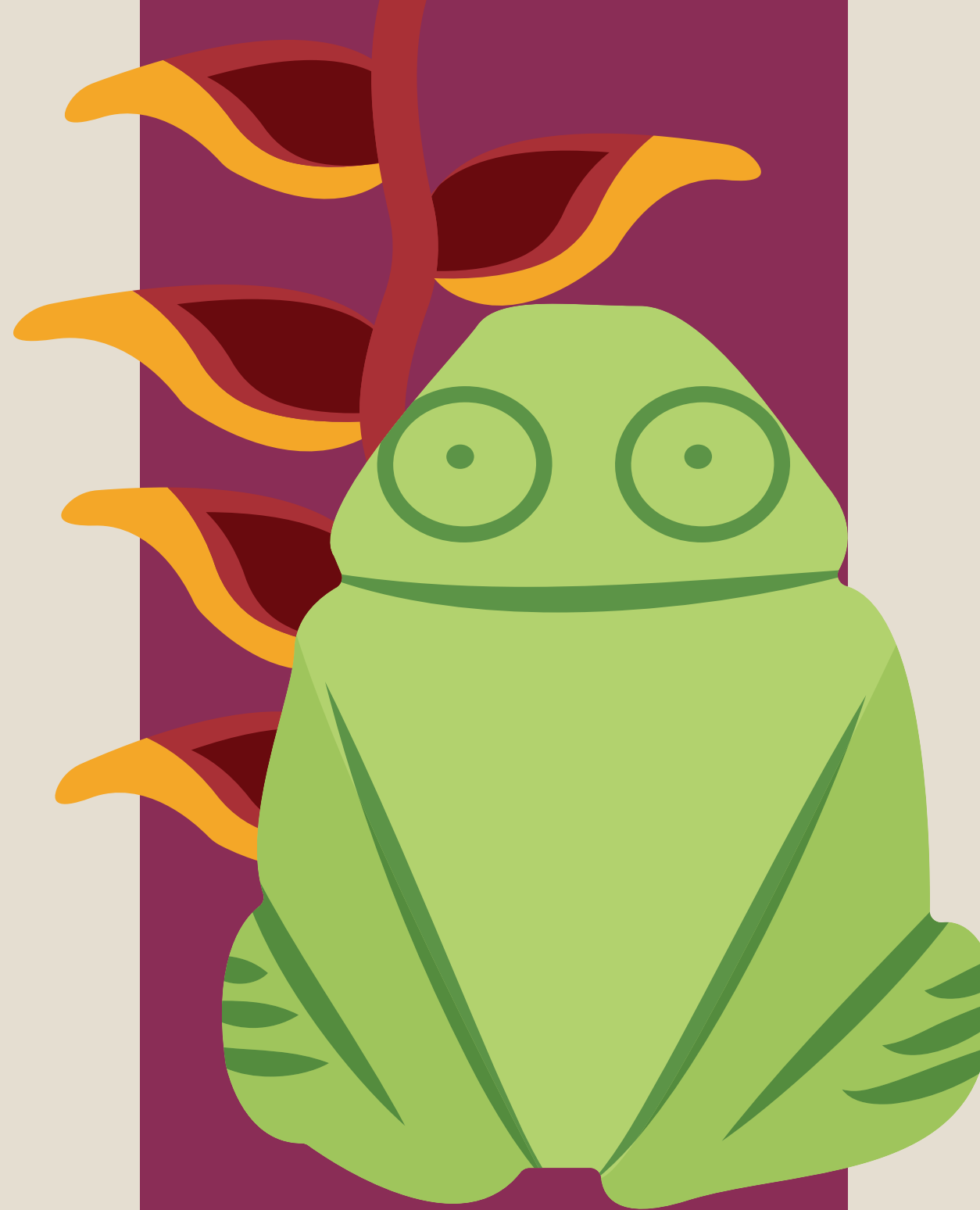
Defending the Amazon means defending life in its plurality, its rhythms, and its ways of existing.

Climate Finance: Autonomy and Direct Resources

One of the central points discussed was the urgent necessity that climate finance must not depend exclusively on external agents. Direct financing for the territories, allowing resources to reach peoples for training, education, and the promotion of projects that bring concrete quality of life.

However, the dialogues revealed an alarming fact: only 1% of resources invested in combating climate change reach local populations directly.

This critical reality demonstrates the urgency of reducing financial “brokers” and establishing transparent and direct mechanisms for resource transfer.



REDD+ Projects and State Responsibilities

A central concern emerged regarding the implementation of projects for Reducing Emissions from Deforestation and Forest Degradation (REDD+) in the region. REDD+ projects cannot offer only public policies that are the State's obligation as a counterpart. They do not exempt the State from implementing essential and urgent investments, such as health, education, sanitation, and basic and adequate infrastructure for domestic economies. The benefits of REDD+ will only be able to boost local economies on sustainable bases under these conditions.

The decision on how to spend the values obtained through these projects must be the sole and exclusive right of the communities, although it has been observed that some communities tend to use these values to make up for State deficiencies. This scenario must be carefully observed, as it is extremely worrying and indicates a structural failure in public policies.

Energy Transition with Respect for the Biome

The dialogues emphasized that the energy transition must be strictly compatible with the conservation of the Amazon biome. A fundamental strategic recommendation establishes that Brazil should export energy only after the national energy transition is complete, ensuring that energy development does not compromise the region's ecological integrity nor deprive the Brazilian population of access to clean energy.

Furthermore, it is imperative to maintain the control and reduction of emissions within the 1.5 degrees global warming limit, as established in international climate agreements.



Effectively consider solar and wind energy and recognize the limitations and risks of large hydroelectric plants due to methane production, biodiversity loss, and social impacts. Brazil must invest directly in clean and decentralized sources, promoting sustainable access to energy, especially in Amazonian communities.

The energy transition must take into account not only technological aspects but also social and cultural ones. This must be done with transparency and effective participation of local communities in the planning stages. Energy planning needs to recognize historical inequalities and promote territorial compensation policies.

Social Vulnerability and Climate Justice

The social vulnerability of the Amazonian populations emerges as a cross-cutting theme in all dialogues. The recommendations point at the need to:

- Diversify production, both extractive and agricultural, reducing dependencies and increasing the economic resilience of communities;
- Strengthen local food systems, recognize the role of family farming and traditional communities, and invest in co-produced science that integrates local and academic knowledge;
- Invest in Integral Health, recognizing the fundamental interconnections among human, animal, and environmental health; health must be understood broadly, including food, sanitation, and environmental conditions;
- Provide access to information, including the people's own history, strengthening cultural identity and autonomy;



- Guarantee full rights and governance of the territories, recognizing the self-management capacity of traditional communities;
- Strengthen the implementation of resilient cities in the Amazon, prepared for climate challenges;
- Value the social technologies developed by the communities, such as cultivation methods, forest management, and dietary practices, as part of the solution to the climate crisis;
- Combat environmental racism. This concept is central to understanding the inequalities in the resilience and response capacity of communities to the effects of environmental changes, pointing out how indigenous, quilombolas, riverside communities, extractive, and babassu coconut breakers are disproportionately affected;
- Stimulate social mobilization and the construction of territorial action agendas that allow for the articulation of local solutions with broader scales, including Pan-Amazonian cooperation. The key lies in recognizing and strengthening the solutions already existing in the territories, aligning them with global strategies to confront the climate crisis.

Biodiversity: Heterogeneity and Integrated Knowledge

A fundamental consensus emerged from the dialogues: the Amazon is not a homogeneous unit and requires specific approaches for its different ecosystems, considering the geological, biological, and social particularities within the region. There are many areas of endemism in the region that harbor exclusive species and need to be considered. This understanding is essential for any public policy or research project in the region.

The effects of climate change on the forest (scarcity of rain), experimentally demonstrated, indicate a high selectivity of species and great loss of forest biomass, resulting in a more homogeneous forest with lower carbon accumulation capacity.



Indigenous lands and traditional territories are the most effective spaces for protecting biodiversity, empirically demonstrating their superiority compared to other forms of conservation. However, these territories are gravely threatened by infrastructure projects, environmental deregulation, and the systematic marginalization of the peoples who inhabit them.

Indigenous, riverside, quilombola, and urban-peripheral communities knowledge must be recognized as a constitutive part of Amazonian science, effectively integrating research processes, monitoring, and public policy proposals. This recognition is not just a matter of epistemic justice, but of scientific and pragmatic efficacy.

Climate models applied to endemic species of Belém's area of endemism reveal that more than 70% of species may completely lose their climatic distribution areas by 2070. Species like the Spix's Guan (Jacu) and the Golden Parakeet (Ararajuba) face habitat loss scenarios exceeding 90%, even under "optimistic" climate projections. The data indicate a drastic reduction in the areas of greatest biological richness in the Amazon, which compromises biodiversity conservation.

Biodiversity is intrinsically linked to one health and the bioeconomy, and biodiversity conservation depends on maintaining the connectivity of the biome. The fragmentation of ecosystems represents an existential threat to Amazonian resilience. Ecological corridors are fundamental to minimize such effects and ensure the necessary connection for biodiversity conservation.

The Amazon must be understood as a cultural landscape, shaped over millennia by indigenous peoples and over centuries by quilombolas and traditional communities. Examples such as the domestication of species and the formation of dark earth are evidence of ancestral technologies that increased the diversity and resilience of the biome. Traditional management should not be confused with extractivism, but rather understood as a technology of care and reciprocity, understanding the forest as a web of relationships that involves humans, animals, plants, rivers, and soils.



Forest Resilience and Defense of Territories

Valuing traditional knowledge and supporting traditional peoples in caring for their territories is a proven effective strategy. It is known that areas with reduced impact from deforestation and degradation are those designated for the collective use of traditional peoples, which demonstrates the effectiveness of their millennial and secular management practices.

Such practices are responsible for increasing biodiversity, enriching soils, and strengthening the capacity of Amazonian ecosystems to cope with climate crises. Ancestral technologies demonstrate that the human presence in the Amazon has always been a factor of care, not destruction.

This resilience, however, is only possible with the guarantee and defense of indigenous, quilombola, and riverside community territories, recognized as spaces of sustainable governance and knowledge production.

The preservation of the Amazon, therefore, depends both on valuing this knowledge and on protecting the collective rights that ensure the continuity of the ways of life that keep the forest alive.

However, there is a worrying scenario of creating legislation that seeks to weaken the instruments of inspection and protection of the forests.

This scenario must be combatted not only by traditional peoples and populations but by the whole society.

Everyone needs to collaborate in the defense and preservation of the environment. Defending the forest is a case of urgency that transcends sectoral or regional interests.





Project "Restoring the Forest"
Photo: Institutional Archive (MPEG)

Consolidated Strategic Recommendations

The dialogues on the future of Amazon converged on the understanding that sustainability is not just an environmental agenda, but a civilizational project. The recommendations gathered here translate a collective effort to strengthen the autonomy of the peoples, climate justice, and the integrity of Amazonian ecosystems, articulating science, public policies, and traditional knowledge into an integrated vision of the future.

The construction of these guidelines emerges from the recognition that the forest is inhabited, thought of, and cared for by peoples who have been ensuring its continuity for centuries. Thus, protecting the Amazon means guaranteeing rights, territories, and ways of life.

Paths to a Fair and Lived Life in Amazon

The gathered recommendations point to possible paths for the Amazon to continue being a territory of life, diversity, and future. These are guidelines that affirm the need to protect those who care for the forest, guarantee autonomy to the peoples, and recognize the value of traditional knowledge as part of the climate solution.

By integrating science, public policies, and social participation, these proposals reaffirm that environmental justice and social justice go hand in hand and that preserving the Amazon is ensuring the continuity of existence itself.



1 Protection and Security

Protect the defenders of the forest through robust public policies, effective security mechanisms, and the fight against impunity for environmental crimes and human rights violations;

2 Infrastructure and Access

- Improve infrastructure access to communities, respecting environmental characteristics and promoting sustainable development;
- Provide market access for bioeconomy and socio-bioeconomy products, creating fair and transparent value chains;



3 Direct and Transparent Financing

- Create strong mechanisms so that resources reach communities directly, eliminating unnecessary intermediaries and ensuring that more than just 1% of climate resources effectively reach local populations;
- Ensure that the decision on how to spend the obtained values is the sole and exclusive right of the communities, respecting their autonomy and self-management capacity;

4 REDD+ Projects and State Obligations

Ensure that REDD+ projects are drivers of conservation, restoration, and socio-economic development and not substitutes for the State's obligations, maintaining a clear separation between carbon market initiatives and governmental responsibilities in health, education, sanitation, and basic infrastructure;

5 Consultation and Participation

- Rigorously monitor whether those responsible are complying with international agreements, such as ILO Convention 169, following the protocols for free, prior, and informed consultation of traditional peoples and communities;
- Ensure that local families are receiving all necessary information for their decision-making clearly, accessibly, and culturally appropriate;

6 Territorial Governance

Guarantee legal security, rights, and full governance of the territories by traditional communities, recognizing their legitimacy and effectiveness in environmental protection;



7 Combatting Environmental Weakening

- Provide legal security for indigenous, quilombola, and traditional community territories, such as riverside dwellers and coastal inhabitants.
- Combat legislation that weakens the instruments of inspection and protection of forests, mobilizing the entire society in this defense, not just the traditional peoples;
- Recognize nature as a subject of rights. Climate change severely threatens Amazonian biodiversity and the adaptive capacity of species, requiring urgent conservation actions and public policies based on scientific evidence, considering plants, animals, rivers, and soils as active parts in formulating sustainability strategies.
- In line with indigenous worldviews, it is up to the State to constitutionally guarantee the protection of these ecosystems, ensuring their integrity and continuity.

8 Valuation of Knowledge

- Value traditional knowledge and effectively integrate it into scientific, research, and public policy formulation processes;
- Recognize indigenous, quilombola communities, riverside, and urban-peripheral people's knowledge as constitutive and legitimate parts of Amazonian science;

9 Diversificação Produtiva

Diversify both extractive and agricultural production, strengthening the Amazonian socio-bioeconomy, without increasing commodity production and reducing economic vulnerabilities;



10 Integral Health

Invest in Integral Health, recognizing the fundamental interconnections among human, animal, and environmental health, especially relevant in the Amazonian context;

11 Access to Information and Identity

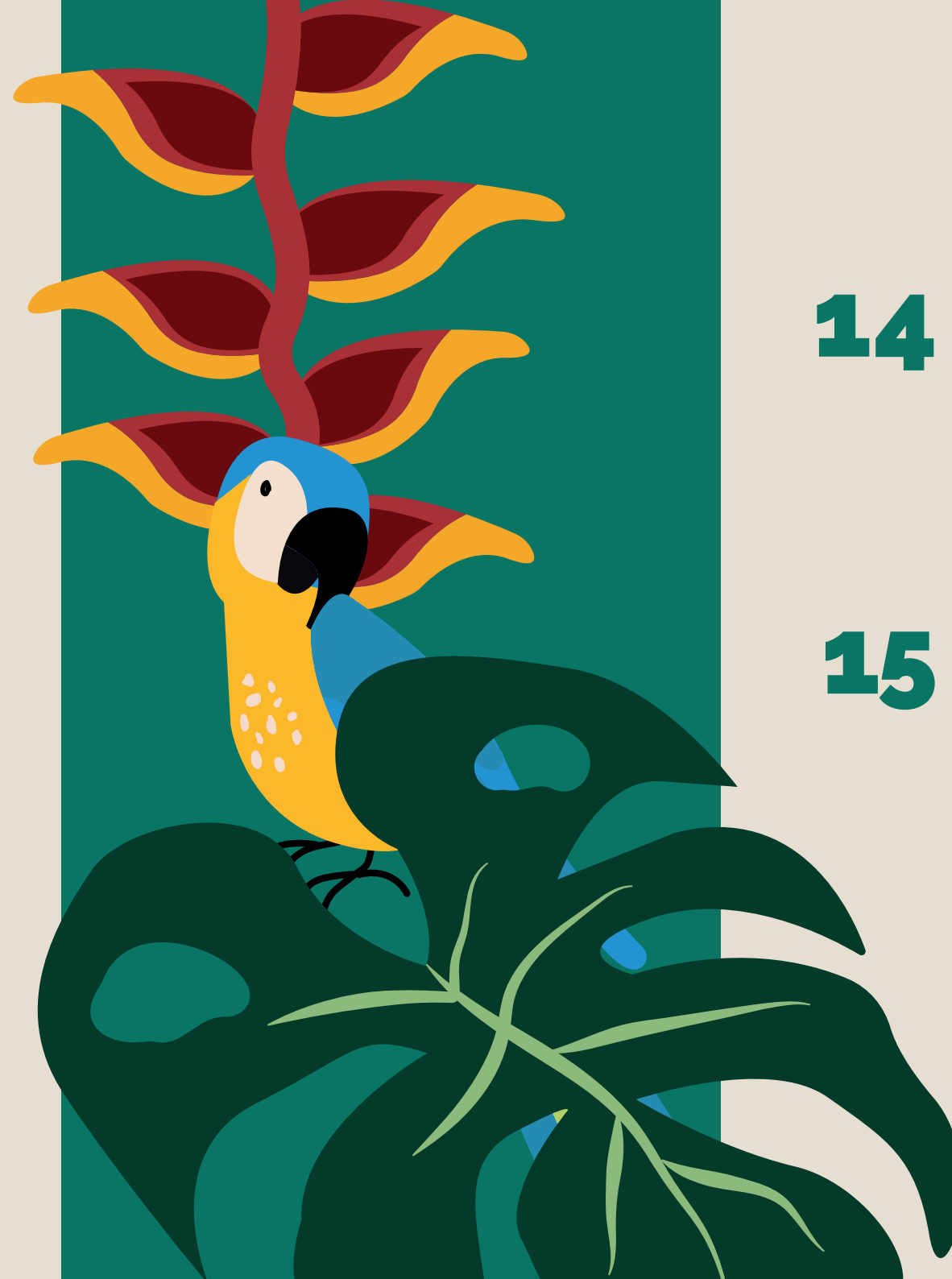
- Provide access to information, including the traditional peoples' own history, strengthening cultural identity, collective memory, and autonomy;
- Value intergenerational knowledge transmission systems as part of school curricula and community initiatives;

12 Urban Resilience

- Strengthen the implementation of resilient cities in the Amazon, preparing urban centers for climate challenges and integrating them into regional conservation strategies;
- Integration of knowledge in urban policies: incorporate traditional management practices into the planning of Amazonian cities, strengthening urban afforestation, urban agriculture, and water management.

13 Emission Control

Control and reduce emissions, maintaining the 1.5 degrees global warming limit, establishing clear goals and effective monitoring mechanisms;



14 Responsible Energy Transition

Ensure an energy transition compatible with the conservation of the biome, establishing as a principle to export energy only after the national energy transition is complete;

15 Certification and Standards

Create harmonized standards for carbon accounting and certification (taxonomy), which ensure environmental integrity, real additionality, and tangible benefits for local communities;

16 Specific Approaches

Develop specific approaches for different Amazonian ecosystems, considering geological, biological, and social particularities, rejecting uniform solutions for a heterogeneous region

17 Connectivity and Integrity

Maintain the connectivity of the biome, recognizing that biodiversity conservation depends on the integrity and interconnection of Amazonian ecosystems; promote the ecological restoration of ecosystems by prioritizing the diversification of native species and the protection of secondary vegetation.

18 Lasting Alliances

Strengthen lasting alliances between academia and territories, establishing horizontal, respectful, and long-term partnerships based on mutual trust and shared benefits;





COP30 in Belém, 2025: A Historical Landmark

Holding COP30 in Belém represents a historical and strategic opportunity to position Brazil as a global leader in forest-based climate solutions.

This is a decisive moment for fulfilling the Paris Agreement and for the practical demonstration that it is possible to reconcile development, social justice and environmental conservation.

Domingos Soares Ferreira Penna Pavilion - "Rocinha"
Photo: Paula Sampaio (Collection/MPEG)

Central Expectation for COP30

The central expectation for COP30 is the presentation of New NDCs (Nationally Determined Contributions) aligned with the 1.5°C goal, with:

- More ambitious commitments to contain global warming;
- Definition of measurable and qualifiable goals that allow for rigorous monitoring and transparent accountability;
- Effective integration of the contributions of Amazonian peoples and territories into national climate strategies.

The Dialogues emphasized the need to prepare COP30 as an opportunity to present to the world a living, diverse, and plural Amazon, where science is done with the peoples and not just about them.

This perspective represents a paradigmatic shift in how the region is presented and understood globally.

COP30 should be the stage to demonstrate that:

- Biodiversity conservation is central to climate change strategies and is intrinsically linked to one health and the bioeconomy;
- Effective conservation depends on the leadership of traditional peoples;
- The most effective climate solutions emerge from the integration between scientific and traditional knowledge;
- The Amazon is not just the “lungs of the world,” but a territory inhabited by peoples with rights, knowledge, and projects for the future.



Victoria Regia pond - Museu Goeldi Zoobotanical Park
Photo: Adrya Marinho (Collection/MPEG)

Final Considerations

The Dialogue Cycle promoted by the Museu Goeldi unequivocally demonstrate that biodiversity conservation depends on maintaining the connectivity of the biome and the full recognition of traditional peoples as protagonists of this protection.

The scientific and empirical evidence is clear: indigenous lands and traditional territories are the most effective spaces for protecting Amazonian biodiversity.

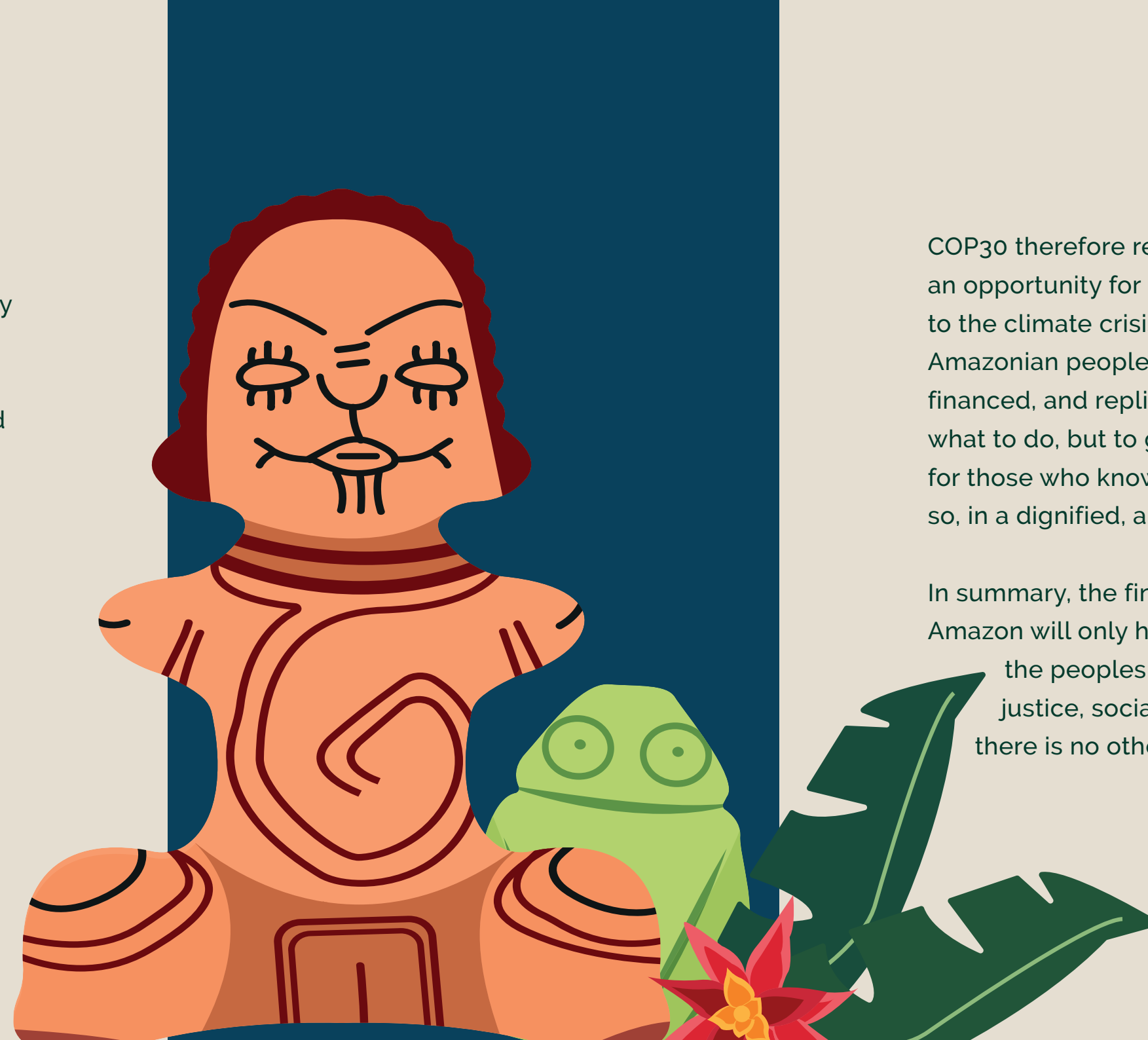
The construction of a legacy

The legacy that is intended to be built with COP30 and beyond necessarily involves:

- Lasting alliances between academia and territories, based on mutual respect, horizontality, and shared benefits;
- Effective environmental justice, which ensures that those who protect the forest have legal security over their territories, are adequately recognized, and supported;
- A new civilizational pact with the forest, which overcomes the extractive logic and recognizes the intrinsic value of ecosystems, biological diversity, and traditional ways of life;
- Recognition that biodiversity is intrinsically linked to one health and the socio-bioeconomy, integrating these dimensions into public policies and development strategies.

The defense and conservation of the Amazonian forests is a case of collective urgency, requiring the engagement not only of traditional peoples but of the entire Brazilian and global society. The Amazon is not just regional or national heritage, but a fundamental element for planetary climate balance and for the viability of life on Earth.

The Dialogues promoted by the Museu Goeldi, an institution with 159 years of accumulated knowledge about the region, reaffirm that the path to the future necessarily involves respect for the territories, the peoples, and the knowledge that for millennia has demonstrated how to live in harmony with the forest. This is not just an ethical or cultural imperative, but a pragmatic necessity for the survival of the Amazon and the global climate.



COP30 therefore represents a moment of civilizational inflection, an opportunity for the world to recognize that the solutions to the climate crisis already exist, are being practiced daily by Amazonian peoples, and need to be recognized, supported, financed, and replicated globally. The challenge is not to discover what to do, but to guarantee the resources, rights, and conditions for those who know how to care for the forest to continue doing so, in a dignified, autonomous, and sustainable way.

In summary, the final message is simple and powerful: the Amazon will only have a future if the future is built together with the peoples of the forest and the Amazonian cities. Climate justice, social justice, and democracy go hand in hand, and there is no other possible path.



Walls of the Museu Goeldi - Belém Urban Art Museum (MAUB)
Mural: Kekel | Photo: Bruno Carachetti

Participants of the Dialogue Cycle

The Dialogue Cycles bring together researchers, community leaders, representatives of traditional peoples, journalists, and specialists in different areas of knowledge to reflect on the challenges and paths of the Amazon in the face of climate change.

At each meeting, central themes such as climate justice, environmental vulnerability, energy transition, and ancestral knowledge are debated from multiple perspectives, promoting plural listening and the exchange between science, public policies, and local knowledge.

05/05 - COP 30, FINANCE, CLIMATE JUSTICE	06/06 - ENVIRONMENTAL VULNERABILITY, RIVER AND FOREST RESILIENCE	24/06 - DISTRIBUTION PATTERN AND ADAPTIVE POTENTIAL OF SPECIES	14/07 - THE AMAZONIAN CONTEXT IN THE ENERGY TRANSITION	18/08 - SOCIAL VULNERABILITY AND ALTERNATIVES FOR AMAZONIAN TERRITORIES	12/09 - PEOPLES OF THE FOREST AND CREATION OF AMAZONIAN LANDSCAPES
COORDINATOR	COORDINATOR	COORDINATOR	COORDINATOR	COORDINATOR	COORDINATOR
Marlúcia Martins	Márlia Coelho-Ferreira	Ana Lúcia da Costa Prudente	Alberto Akama	Roberto Araújo	Erêndira Oliveira
OPENING LECTURE	PARTICIPANTS	PARTICIPANTS	PARTICIPANTS	PARTICIPANTS	PARTICIPANTS
Ima Vieira	Aline Maria Meiguins de Lima	Camila Ribas	Ivan Aragão	Edel Nazaré Moraes Tenório	Ana Carolina Melo
PARTICIPANTS	Antonio Carlos Lôla da Costa	Gabriela Ribeiro Gonçalves	Patricia Nunes	Gilson Lopes de Oliveira	Artur Walipere Baniwa
Andrew Miccolis	Divino Vicente Silvério	Josiel Jacinto Pereira Juruna	Philip Martin Fearnside	Ivanildo Brilhante	Carlos Augusto da Silva (Tijolo)
Francisco de Assis Costa	José Ivanildo Gama	Maria de Fátima de Aguiar Guilherme	Ronaldo Mecnas	Kelvyn Gomes	Carolina Levis
Haydee Marinho	Marcelo Tabarelli	MODERATOR	MODERATOR	Raimunda Monteiro	Glenn Shepard
Herena Neves Maues Corrêa de Melo	Ô-é Paiakan Kayapó	Fabyo Cruz	Fabio Bispo	Tatiana Sá	Maria Páscoa Sarmento
Irakadju Ka'apór	MODERATORS			MODERATORS	MODERATORS
Monique Vanni	Cecília Amorim			Catarina Barbosa	Cristina Serra
Roberto Araújo Santos	Guilherme Guerreiro			Marcos Wesley	Helena Palmquist
Thomas Mitschein					
Valdeci Tembé					
MODERATORS					
Daniel Nardin					
Ismael Machado					
Joice Santos					

museu
goeldi



COP30
comCiência

