ENCOUNTER OF THE AMAZON SCIENTIFIC AND TECHNOLOGICAL COMMUNITY

WITH THE PRESIDENCY OF COP 30

This book stems from the mobilization and organization of the Council of Sustainable Social and Economic Development (CDESS), of the Secretariat of Institutional Relations (SRI/Presidency of the Republic), with the active participation of Federal and State Universities, Federal Institutes of Education, Science and Technology, Research Units of the Ministry of Science, Technology and Innovation (MCTI), as well as important partners such as the Brazilian Agricultural Research Corporation (EMBRAPA), Oswaldo Cruz Foundation (FIOCRUZ), Evandro Chagas Institute (EC/SVSA/MS), Association of Higher Education Directors – North (ANDIFES), Brazilian Association of State and Municipal Universities - Amazon states (ABRUEM), and National Council of State Foundations for Research Support (CONFAP).All the effort undertaken to produce this book was embodied with the institutional support of the Foundation for Research Support and Development (Fadesp) and resources made available by the Financing Agency for Studies and Projects (Finep). The purpose was to present a synthesis of the meeting involving the Scientific and Technological Community of the Amazon with the Presidency of COP30. The mobilization of approximately 200 representatives from over 70 regional enquired institutions and from civil society as well expresses the social engagement of institutions of the region. It is an essential coalition towards the expansion of the reach of ecological transformation policies, contributing to a translation of the New Industry Brazil (NIB Amazônia) through an Amazonian perspective, strengthening socio-environmental innovation initiatives of economic agents, supporting local public management, and enhancing the action of society.

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Federal University of Pará

Solutions from the Amazon Scientific and Technological Community as a Contribution to Achieving Brazilian NDC (2025-2030)

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Summary

Preface

The Amazon calls to us. Not only as the largest tropical rainforest on the planet, but as the epicenter of a new development paradigm. This book is the expression of the historical commitment of Amazonian institutions to Brazil and the world.

Thirty-three years after ECO-92, the country prepares to host COP30 in 2025, in a decisive moment in the history of the interaction between development and sustainability.

The following pages unfold documentary evidence of a scarcely known reality in its entirety: the Legal Amazon is home to 405 units of Science and Technology institutions, 655 postgraduate courses, and annually qualifies more than one hundred thousand professionals. This ecosystem of knowledge – built over decades with public investment and the dedication of thousands of researchers – represents an invaluable strategic asset for tackling the global climate crisis.

What this document clearly demonstrates is that the science produced in the Amazon is neither peripheral nor dependent. It is central, original, and indispensable. Each solution presented here arose from direct dialogue with the Amazonian community.

The convening of over 70 regional institutions that climaxed in this document demonstrates the maturity and engagement of the Amazonian scientific community. The "climate mutirão" to which the title refers is not a metaphor, but concrete, articulated, and systemic action by those who possess the tools, knowledge, and determination to transform commitments into results.

As a Brazilian innovation agency, Finep acts strategically in promoting science, technology, and innovation focused on major national challenges. Aligned with the New Industry Brazil and the Ecological Transformation Plan, the agency mobilizes resources, articulates partnerships, and supports initiatives that transform knowledge into concrete solutions for the climate and environmental challenges of the Amazon and Brazil.

The message in this document is unequivocal: investments in science and technology in the region have generated exponential returns.

The time has come to expand upon and multiply successful experiences, and to overcome the barriers that still prevent the full flourishing of this transformative potential.

May this book strengthen the conviction that the integration of science and local knowledge, along with adequate and continuous resources, is the safest path for us to face together the great challenge of building the future that the Amazon, Brazil, and the planet deserve.

Rio de Janeiro, October 8, 2025

Luiz Antonio Elias

President of the Financing Agency for Studies and Projects - FINEP

Presentation

The Amazon concentrates one of the most significant biodiversity reserves on the planet, performing a vital role in global climate regulation. Alongside that, it is home to a population of approximately 30 million, 70% of whom dwell in urban areas.

Hosting the COP30 event in 2025, in Belém-Pará, represents a milestone for the country. In this regard, aiming to highlight the insights and contributions of Amazonian educational and research institutions, as well as to foster dialogue with civil society, the Secretariat of Institutional Relations, by means of the Council for Sustainable Economic and Social Development "Conselhão", promoted the **Amazon Scientific and Technological Community Meeting** with the COP30 Presidency in Manaus, Amazonas, in August 2025.

The initiative endeavored to converge information and solutions presented by Universities, Science and Technology Institutions (ICTs), Federal Institutes (IFs), and Research Institutes, and assembled into six axes and thirty targets of the Brazilian Action Agenda, oriented toward achieving Brazil's Nationally Determined Commitment (NDC), considering the Amazon territories and realities. In total, contributions were received from 76 institutions, which were synthetized and consolidated in a document delivered to the president of COP30, Ambassador André Aranha Correa do Lago.

In addition to the "Conselhão" itself, the mobilization and organization process included the participation of several entities, including Science and Technology Institutions (Embrapa, INPA, Goeldi Museum, Fiocruz, Evandro Chagas Institute), Andifes (Association of Higher Education Directors - North), Abruem (Brazilian Association of State and Municipal Universities -

Amazon states), and CONFAP (Research Support Foundations of the North). The solutions presented reflect the solid knowledge available to support the implementation of actions at the local, national, and international levels.

The Secretariat of Institutional Relations of the Presidency of the Republic, by means of the Council for Sustainable Economic and Social Development (Conselhão), and the organizing institutions express their gratitude for the support provided by FINEP/MCTI, FADESP, and the Science and Voices of the Amazon movement at COP 30, which made this publication possible. It is hoped that this content will have a broad impact over institutions responsible for professional education, research, and knowledge production to transform current development paradigms. It is also hoped that the results presented here will reach those who need the knowledge generated by public investment for the benefit of society as a whole.

Gleisi Hoffmann

Chief Minister of the Secretariat for Institutional Relations of the Presidency of the Republic

Olavo Noleto

Executive Secretary of the Council for Sustainable Economic and Social Development

Amazonian Science and Knowledge in the Climate Action Campaign

United Nations Conference on Environment and Development. Web

Knowledge and tradition united in the fight for the life of the planet.

The Earth Summit (ECO 92), held in Rio de Janeiro, set on the inclusion of Brazil, its institutions, and civil society into the international debate on the environment and into the process of formulating and implementing the resulting agreements.

In 2025, the 30th United Nations Climate Change Conference (COP30) will be held in the largest tropical forest on the planet. This is a historic opportunity to consolidate environmental, social, political, cultural, economic, and ethical commitments that acknowledge the centrality of the Amazon, its populations, and institutions. The Amazon must be regarded a space to' be protected and a protagonist of collective local, national, and global efforts in the great mutirão for the implementation of the Paris Agreement, convened by the Brazilian Presidency.

UNITED NATIONS CLIMATE CHANGE CONFERENCE

COP30 AMAZÔNIA

CUIDAR DO PLANETA PARA O FUTURO DA HUMANIDADE

BELÉM • BRASIL • 2025

GOVERNO FEDERAL BRASIL UNIÃO E RECONSTRUÇÃO

The Amazon Scientific and Technological Community Meeting with the COP30 Presidency aims to showcase the vast knowledge generation and innovation in the region. Combined with traditional wisdom, this knowledge is essential to address the climate crisis and ensure socio-environmental justice and sustainable development for the Amazon, Brazil, and the world.

The Amazon speaks for science and for the people who sustain it.

The Legal Amazon stretches across 552 countryside centers of Science and Technology, Higher Education, and Technological institutions (maps attached), and 655 graduate and postgraduate programs. These structures, progressively and consistently consolidated over decades, have played a fundamental role in producing diagnoses and developing high-quality, effective solutions to address social inequalities, promote the sustainable use of natural resources, and reverse the predatory course of the current development model. Every year, more than one hundred thousand higher education and technology professionals graduate from Amazon institutions. However, many of them encounter barriers to entering the job market due to the scarcity of employment opportunities in sustainable economic chains. This scenario evinces the urgent need to align professional education, research, and innovation with public policies and investments that strengthen inclusive, low-environmental-impact economies.

Knowledge that springs from the earth and echoes in the world forums.

Squirrel Monkeys. Photo by Camila Barbosa – ASCOM INPA

Based on the six axes and thirty objectives of the Action Agenda proposed by the Presidency of COP 30, technologies, solutions, and research generated by Amazonian institutions available for implementation have been mapped and presented below. Many of these were developed in close collaboration with local communities, productive sectors, and civil society, responding to concrete problems and exploring specific opportunities of each territory. This knowledge represents a unique and strategic asset for Brazil towards the mitigation and adaptation to climate change. It offers integrated responses, grounded in scientific and local knowledge, besides being fully aligned with the commitments of the Brazilian NDC, reinforcing the centrality of the Amazon in tackling the global climate crisis.

This is a synthesis of the numerous compiled solutions. The message conveyed to the national organizers of the Conference, negotiators, Brazilian society, and the international community is clear: public investments in Amazonian science have generated a strategic asset, indispensable for the Action Agenda for the Amazon, Brazil, and the world.

The document presented stem from extensive consultation with more than 76 regional institutions. Yesterday, more than 200 representatives of these institutions and civil society gathered to share knowledge and information underpinning this document and to propose future achievements.

From the forest to the laboratory, a single purpose: an economically sustainable future.

Amazonian Flora. Photo by Antônio Carlos Pereira Góes

This mobilization conveys the social engagement of Amazonian institutions as an essential collective effort to expand the reach of ecological transformation policies, contribute to an Amazonian version of the New Industry Brazil (NIB Amazônia), strengthen socio-environmental innovation initiatives of economic agents, support local public management, and enhance the action of society as a whole.

Development perspectives in the Amazon engage with diverse cosmologies, beyond the dominant Western concept of progress that prioritizes capital accumulation over nature. This diversity accounts for a profusion of cultural, economic, social, and knowledge-based territorialities, which feed into the dialogue between academic institutions and traditional knowledge.

Keeping the forest standing does not suffice if a large portion of the population still live in appalling conditions on the outskirts of cities. Climate justice means a dignified life for those who live in the forest and in urban areas of both the Legal Amazon and the country. Eliminating regional and intra-regional asymmetries requires propelling the decarbonization of the economy. This structural change must be necessarily founded on coordinated infrastructure and energy transition solutions, implying investments in education, human health, food and nutritional security, urban and rural sanitation, among other measures aimed at prosperity, improved quality of life, and environmental balance.

An unswerving premise for the inclusive and shared development of the Amazon is that it be driven and led by its populations, economic sectors, and local institutions. The implementation of the country's climate policy must drive the dissemination of productive innovations, sustainable cities, green infrastructure, and the well-being of urban populations, as well as the people of the countryside, forests, and waters that have ensured the formation of sociobiodiversity over the centuries.

The importance of science produced in the Amazon is restated toward optimizing sustainable production systems, conserving biodiversity and ecosystem services, and ensuring historically efficient livelihoods.

It is paramount that research receive adequate and continuous investment in view to expand its socioeconomic and environmental impacts. In this scenario, scientists in the region work within local production networks, transforming biodiversity into prosperity without disrupting the way of life and relying on the cultural and ecological dynamics of the territories. It is emphasized that the "Amazon cost" must be righteously considered in investments in Science, Technology, and Innovation and in the professional qualification of students in the region.

The contribution of Amazonian science, already reflected in available technologies and with enormous growth potential, is essential for global systemic solutions. Therefore, we emphasize the importance of Amazonian stakeholders' participation in international governance forums on climate change, which address the challenges and solutions of the world's largest tropical forest.

Between satellites and seeds, a new climate hope is born.

Flooded Forest. Photo by Felipe Santos da Rosa

The hallmark of this initiative lies in the concerted effort to coordinate inter-institutional and inter-network actions, demonstrating that, together, Amazonian institutions, both public and private, have the capacity to accelerate solutions and lead scientific and technological cooperation processes on a pan-Amazonian scale, in the Global South, and with strategic partnerships on all continents. The Amazonian scientific community is prepared to actively contribute to the acceleration of the Paris Agreement.

This document was prepared by a committee comprised of Federal and State Universities, Science and Technology Institutes of the Ministry of Science and Technology (MCTI) (INPA, Goeldi Museum, Mamirauá Institute, INPE - Amazônia, Vale Institute, among others), Embrapa, Federal Institutes, Fiocruz, and the Evandro Chagas Institute, with support from the Council for Sustainable Economic and Social Development (CDESS) of the Secretariat for Institutional Relations (SRI/Presidency of the Republic).

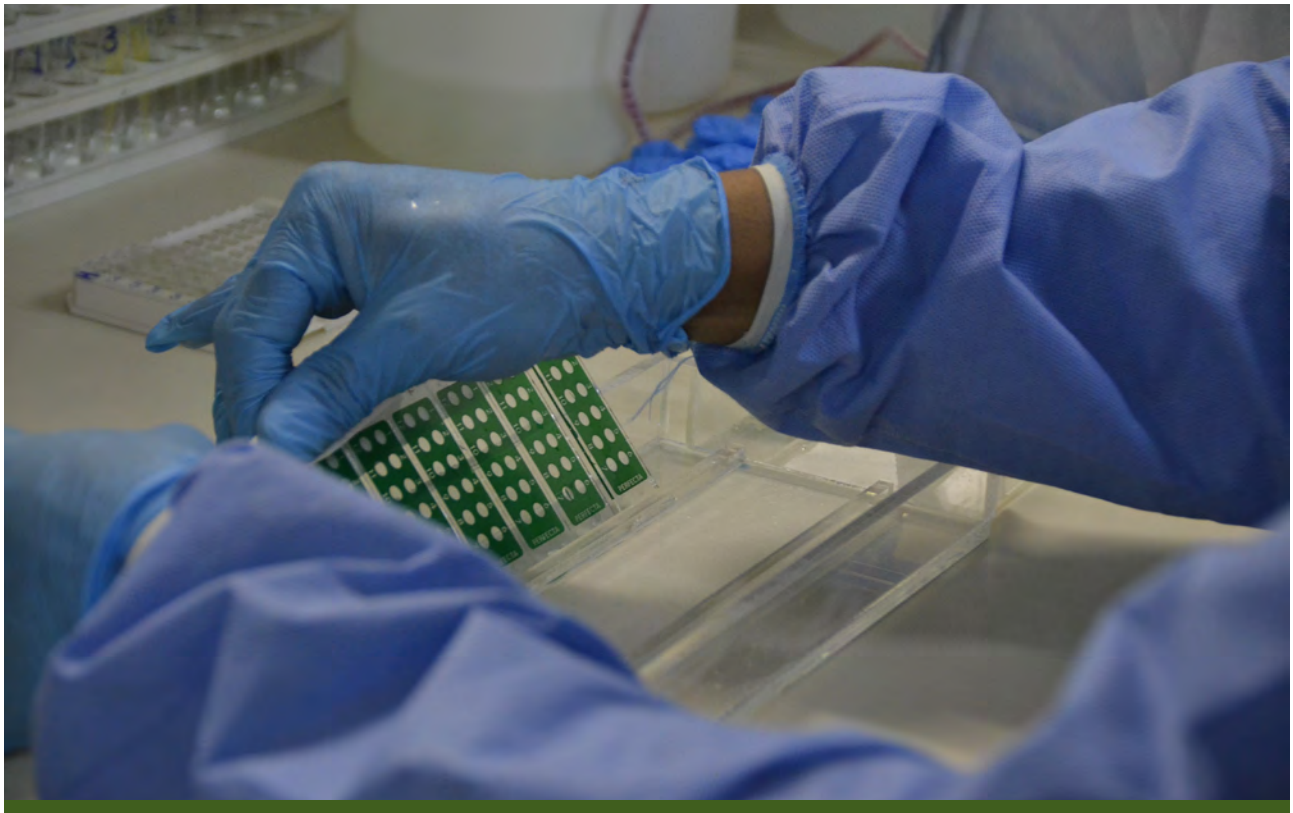
Where traditional wisdom meets modern science, the true collective endeavor for the climate becomes alive.

Babaçu Palm Groves in Newton Bello – Embrapa-MA. Photo by José Rey Santos Souza

This contribution is addressed to Your Excellencies: President of COP30 in Brazil, Ambassador André Aranha Corrêa do Lago; First Lady Janja Lula da Silva; Minister of Science, Technology, and Innovation Luciana Santos; representatives of the Brazilian Government; Special Envoys; and the representatives of the Amazon on the COP30 Scientific Committee, Dr. Ima Vieira and Dr. Tatiana de Sá.

The evidence, analyses, and recommendations presented below strengthen the collaborative agenda for mitigation, adaptation, and climate justice, highlighting the Amazon's strategic role in global climate balance. We renew our willingness to engage in dialogue and cooperation with the Action Agenda, so that collective efforts can transform commitments into concrete actions for the benefit of the planet and future generations.

The Amazon thinks, feels, and teaches the world how to balance progress and forest.



Research Activity at the Environmental Section of the IEC

Contributions of Amazonian Institutions

to the Implementation of the Presidency Action Agenda of COP 30

Delivery of the Letter to the President of COP 30. Photo by Alexandre de Moraes

The Amazon's scientific and technological institutions play a strategic role for Brazil and the world, generating knowledge, developing innovative solutions and strengthening the scientific foundation needed to address climate challenges and promote sustainable development.

More than 70 institutions, a single commitment: to transform evidence into action.

Ceremony for the Delivery of the Letter to the President of COP 30. Photo by Alexandre de Moraes

This document is the result of a collaborative process that brought together more than 70 contributions from universities, research and development institutions, civil society organizations, government agencies, and community initiatives in the region. The information was obtained by means of an electronic form covering the thirty objectives defined in the Fourth Charter of the COP30 Presidency.

Participants of the Document Delivery Event, in Manaus, August 2025.

The Amazon shows that local science is the key to global adaptation.

Science produced in this bioma intrisically embodies peculiarities of a territory, which directly influences over climate and the planet's environmental stability. It is a region whose municipalities are continental in size and the access to communities depend on fluvial navigability while the pulse of river floods and droughts regulates biodiversity, lives of populations and biogeochemical cycles. This fact confers on knowledge a unique strategic importance, as it emerges amid challenging conditions and cpatures the bioma's complexity.

COP 30 is the stage, but the leading role belongs to the Amazon.

Delivery of the Letter to the President of COP 30. Photo by Alexandre de Moraes

Civil Society During the Delivery of the Document, in Manaus, August 2025. Photo by Alexandre de Morais

A sustainable future emerges from the intelligence of the forest.

Solutions adapted to the Amazonian reality reverberate in planetary impacts, turning the region's science and technology into an indispensable component in transforming evidence into concrete actions, fundamental to maintaining the climate, biodiversity, and the well-being of populations. Amazonian science and technology represent not only a relevant contribution, but also the Amazon's central role in the world, both in maintaining the climate and biodiversity and in the resilience and well-being of its populations.

Axis I
Transition in the energy, industry, and transportation sectors

Tropical Forests Can Absorb Large Amounts of Carbon Dioxide from the Atmosphere. Photo by Toa55

1. Triple renewables and double energy efficiency.

- Solar generation, biofuels, biomass, wind energy, green hydrogen;
- Pilot projects for distributed microgeneration; and energy efficiency initiatives in communities and public institutions.

A LARGE TREE CAN E VAPORATE AND TRANSPIRE MORE THAN 1,000 LITERS OF WATER PER DAY.

Solar Panels for Communities of Lago Grande, Santarém-PA. Partnership between UFOPA and Michigan State University. Photo by Tarcisio Schnaider

2. Acceleration of zero- and low-emission technologies in sectors that are difficult to decarbonize.

- Solutions for forest-based production chains and the replacement of fossil fuels in industry with renewable sources, making production processes more efficient, combining technological innovation and integration with local knowledge.

Clean, inclusive energy with an Amazonian touch.

3. Ensure universal access to energy.

- Implementation of decentralized generation systems, using renewable sources and hybrid models adapted to regional conditions, benefiting isolated communities through direct supply and local qualification processes.

The just energy transition begins when traditional knowledge meets technology.

Açaí Residues for Bioenergy Production – Research by UFRA and UFPA. Photo by Andréia Santana

4. Transition away from fossil fuels in a fair, orderly, and equitable manner.

- Studies on socioeconomic feasibility, scenario modeling, and solutions prioritizing renewable alternatives and respecting the rights of local populations.

Green power for a new industrial and human model.

In Axis I, the transition is treated as an inclusive process, integrating public policies, technological innovation, and socio-environmental justice. The reported actions demonstrate that Amazonian institutions have the technical and scientific capacity to lead the energy transition process adapted to the regional reality, aligning economic development, energy security, and environmental conservation.

Amazonian Landscape. Photo by Cimone Barros – ASCOM INPA

Axis II
Sustainable Management of Forests, Oceans, and Biodiversity

Forest Management in Paragominas, Pará. Photo by Tarcisio Schnaider

5. Investments to prevent and reverse deforestation and forest degradation.

- Combating illegal activities, complying with current legislation and combating legal setbacks,
- Protecting forest defenders. Strengthening environmental agencies.

muiraquitã

IT INFLUENCES RAINFALL IN BRAZIL, URUGUAY, ARGENTINA, BOLIVIA, PARAGUAY, AND EVEN CHILE.

Biological Scientific Collections – INPA. Photo by Lucas Batista

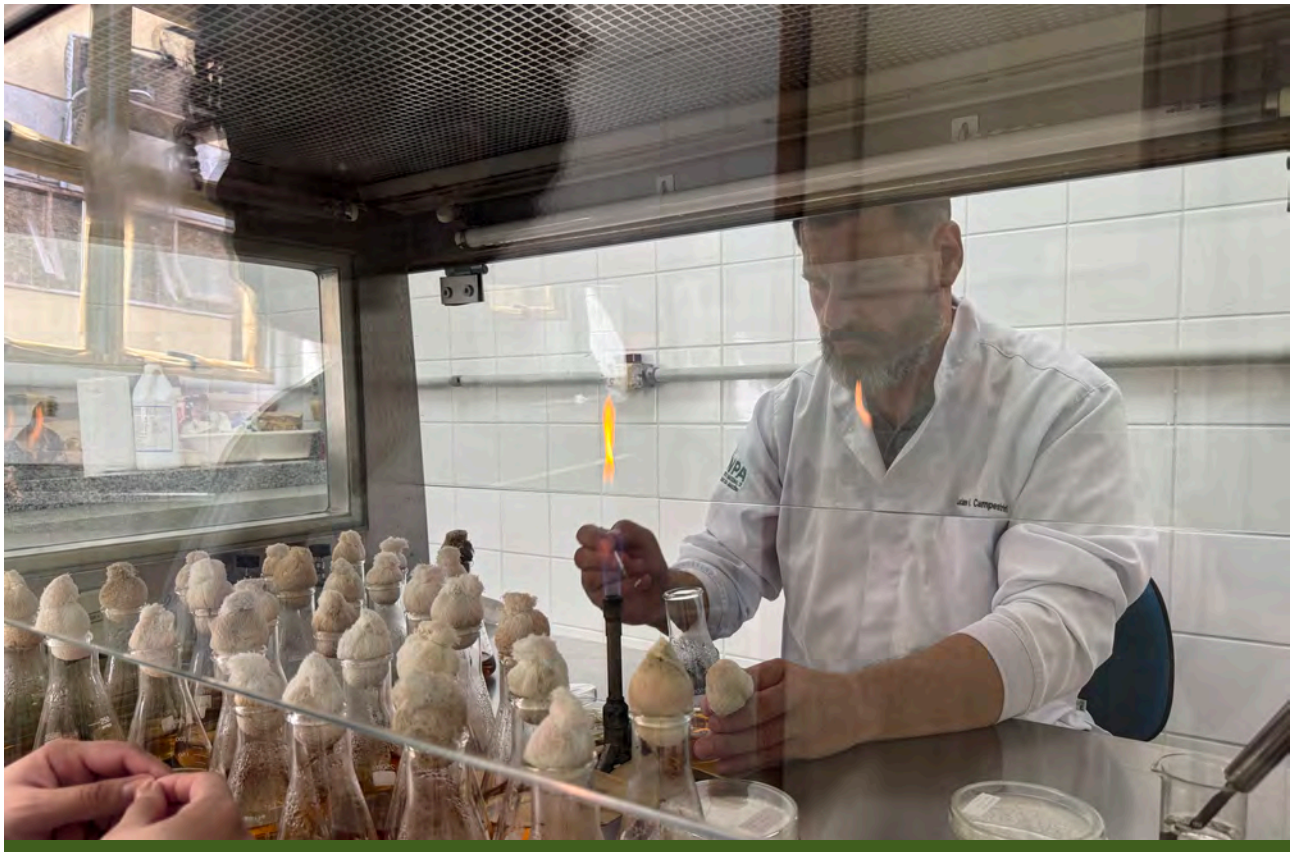
- Continuous monitoring and remote sensing, including digital models and artificial intelligence (AI) for species identification;
- Forest inventories, with emphasis on the National Forest Inventory;
- Technologies for low-impact forest management and recovery of degraded areas; technologies for restoring and protecting secondary vegetation;
- Social allocation of unallocated public lands, promoting landscape connectivity;
- Fire management technologies;
- Training local communities and indigenous peoples in sustainable management, strengthening forest-based production chains. Interrupting public funding for degrading activities.

Caring for the forest means protecting the climate, life, and ancestral knowledge.

6. Initiatives to conserve, protect, and restore nature and ecosystems by means of solutions addressing climate change, biodiversity loss, and desertification.

- Combatting degradation drivers (such as fire, logging, and methane emissions from livestock).
- Innovative methodologies for ecological and productive restoration, integrating scientific and traditional knowledge, while aiming to generate data to reduce significant knowledge gaps that still exist within the biome.
- Developing the bioeconomy within the context of sociobioeconomy, to boost research, conservation, and the sustainable use of biodiversity.

From the treetops to the coastal corals, the Amazon pulsates in balance.



Amazon+10 Fungi – Ceci Sales. Photo by Debora Vale – ASCOM INPA

7. Efforts to preserve and restore oceans and coastal ecosystems.

- Water quality monitoring; conservation of mangroves and coral reefs;
- Development of models to assess the impacts of climate change and human activities on coastal areas;
- Conservation of wetlands (floodplains and igapós). Maintenance of streams, lakes, and springs.
- Mangrove management and conservation.

Monitoring, conserving and regenerating: the triad of Amazonian sustainability.

In Axis II, Amazonian institutions demonstrate strong technical and scientific capacity to propose solutions that link conservation to sustainable use of natural resources, combining monitoring, technological innovation, community engagement, and the production of both basic and applied knowledge. Notably, there is an integration of environmental, social, and economic data to inform public policies for the sustainable management of forests, oceans, and biodiversity, in addition to environmental education initiatives aimed at local populations. These actions reinforce the region's strategic role in global climate regulation and the preservation of planetary biodiversity.

LEEM – INPA. Photo by Cimone Barros

Axis III
Transformation of Agriculture and Food Systems

Cassava Cultivation in No-Till Farming System – Embrapa. Photo by Mauricilia Silva

8. Restoration of degraded areas and sustainable agriculture.

- Ecological restoration and productive restoration;
- Implementing agroforestry systems;
- Integrated soil management and use of native species adapted to Amazonian conditions and climate change;
- Carbon capture; soil health recovery and protection of water resources.

IT RETAINS MORE THAN **140 BILLION METRIC TONS** OF CARBON, FOSTERING THE WORLD'S CLIMATE BALANCE.

Cupuaçu Tree Cultivar BRS Duquesa. Photo by Vinicius Soares Braga – Embrapa

9. More resilient, adapted and sustainable food systems.

- Increasing the adaptability and resilience of production chains, with a focus on sociobiodiversity products, to diversify and stabilize production, reducing vulnerability to climate and market shocks.
- Recognition of local communities and traditional knowledge to better integrate efforts to develop solutions to regional challenges.

Agroforestry is science and culture.

10. Equitable access to adequate food and nutrition for everyone.

- Integrated research and actions that expand the supply of products based on local biodiversity that ensure food and nutritional security, with special attention to the most vulnerable populations;
- Programs to support family production, food and nutritional education, contributing to healthier and more sustainable diets.

Food sovereignty as climate action.

Table Cassava Cultivar with Pink-Colored Root Flesh. Photo by Fabiano Bastos – Embrapa

Contributions under Axis III highlight that agricultural development in the Amazon can and should take place in alignment with climate commitments, with a focus on innovation, community participation, and the strengthening of public policies that ensure food security, resilience, inclusion, and ecosystem conservation. Research and technologies aimed at low-impact agriculture, agroforestry systems, animal and plant health—including integrated pest management—organic production, and the promotion of sociobiodiversity products contribute to the strengthening of sustainable and safe value chains. There is a strong alignment between scientific research and field practices, with support for projects that improve agricultural productivity in a sustainable manner.

Amazon Rainforest in Brazil Abundant Flora

Axis IV
Building resilience in cities, infrastructure and water.

Waste Along the Amazon River. Photo by PARALAXIS

11. Multilevel governance.

- Institutional arrangements that integrate local, state, federal governments and traditional communities, ensuring social participation and intersectoral coordination in the valorization of green infrastructure and increasing the resilience of cities.

IS HOME TO ONE IN TEN SPECIES
(APART FROM UNKNOWN SPECIES) IN THE WORLD, FROM ANIMALS TO PLANTS, MITIGATING DISASTERS.

Aerial View of the IEC in Ananindeua

12. Sustainable and resilient buildings and structures.

- Use of local materials and construction techniques adapted to the Amazon climate;
- Bioclimatic architecture and low environmental impact technologies, guiding the training of professionals and the implementation of works by public and private agents.

Forest cities: networked resilience.

13. Resilient urban development, mobility and infrastructure.

- Integration of transport modes to strengthen green and blue infrastructure;
- implementation of bicycle paths, improvement of river transport, management of floodplains and participatory urban planning.

Green infrastructure, blue future.

One of the First Primary Health Units in Pará to Conduct PCR Tests for HPV Detection. Photo by Walterson Rosa – MS

14. Water management.

- Monitoring systems, treatment and ecological sanitation practices;
- Training of managers and communities for integrated water management;
- Research on the relationship between climate change and hydrological regimes;
- Revitalization of water bodies within cities with revegetation and creation of green belts along the banks of urban rivers;
- Monitoring water quality against environmental contaminants.

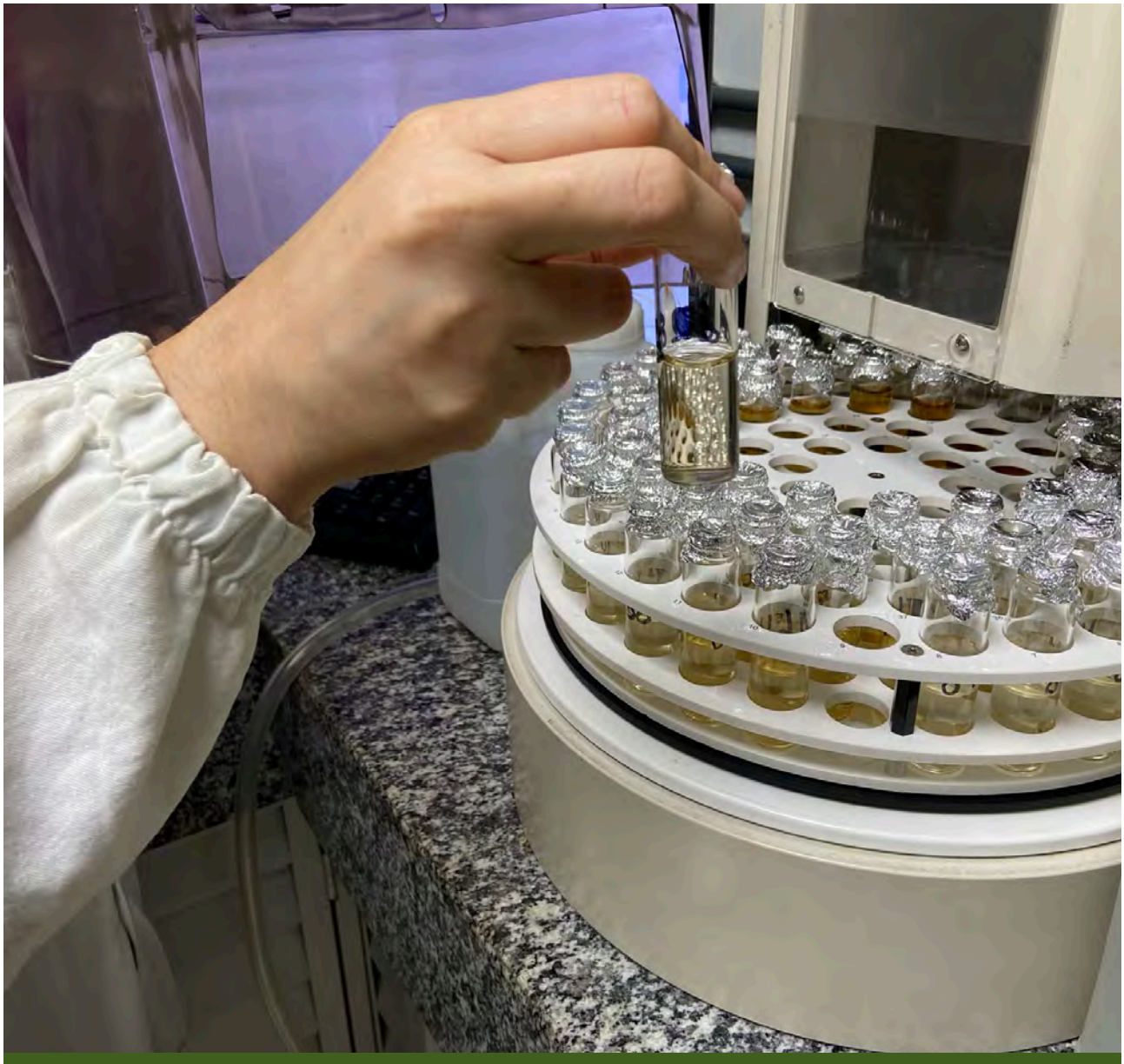
Planning with nature, not against it.

Embrapa Genetic Resources and Biotechnology Bank II. Photo by Claudio Beserra Melo

15. Solid waste management.

- Waste reduction, reuse and recycling, including reuse technologies and environmental education;
- circular economy experiences in communities and small businesses, reducing environmental impact and generating economic opportunities.

Water, architecture, and adaptation.



Environmental Chemistry Laboratory – Iete – Carbon Analysis – Elaine Pires. Photo by Lucas Batista – INPA

Contributions under Axis IV have the potential to build solutions adapted to the territory, strengthening the resilience of cities and communities, ensuring water security, maintaining green infrastructure, and promoting urban and infrastructure development that respects the region's environmental and social limits.

Superfood Camu-Camu Technologies. Photo by Lucas Batista – ASCOM INPA

Axis V
Promotion of human and social development

Marajoara Açaí. Photo by Pedro Magrod

16. Promoting resilient health services.

- Structuring health systems adapted to the environmental conditions of the Amazon, including training professionals to respond to climate emergencies;

IT HOLDS **MORE THAN 10,000 SPECIES** OF PLANTS ESSENTIAL FOR MEDICINAL AND COSMETIC PRODUCTION.

People Suffer from Climate Change. Photo by the UN

- creating rapid response protocols and expanding access to health services in remote communities.
- Monitoring and prevention of climate-sensitive diseases and conditions, such as malaria, arboviruses and others, and integration of epidemiological data with climate and environmental information, with the development of research that demonstrates the correlation between health and climate.
- Strengthening health surveillance and community-based and care environments, with a regionalized approach to response strategies.
- Enhanced laboratory surveillance for detection, monitoring and response to pathogens and hosts, integrating climate and environmental data.

People at the center of the climate transition.

17. Reducing the effects of climate change on the eradication of hunger and poverty.

- Community gardens: sustainable production chains and strengthening family farming contribute to generating income and reducing social vulnerabilities, with special attention to indigenous peoples, traditional communities, rural and urban populations at risk.

Health, culture, and climate justice.

National Bioeconomy Commission. Photo by Revista Amazônia

18. Education, training and job creation to respond to climate change

- Technical and scientific qualification for young people and workers in green jobs and sustainable entrepreneurship. These initiatives range from vocational training to postgraduate programs, encouraging the creation of innovative solutions and strengthening local economies.

Educating for a green future.

Agroforestry System (SAF) at Embrapa Western Agriculture. Photo by Sílvia Zoche Borges

19. Culture, cultural heritage and climate action.

- Registration projects (patents, tangible, intangible and other assets);
- Protection and dissemination of cultural practices and ancestral knowledge;
- Gographical indication of designation of origin (GI).

Caring for people means caring for the climate.

Researcher from the Goeldi Museum Working with the Kayapó People

The contributions of Axis V reinforce that human and social development in the Amazon depends on continued investment in health, education, culture, and inequality reduction, essential pillars for a safe and fair climate future. Investments in these areas are combined with the promotion of nature-based solutions, connecting cultural identity and sustainability.

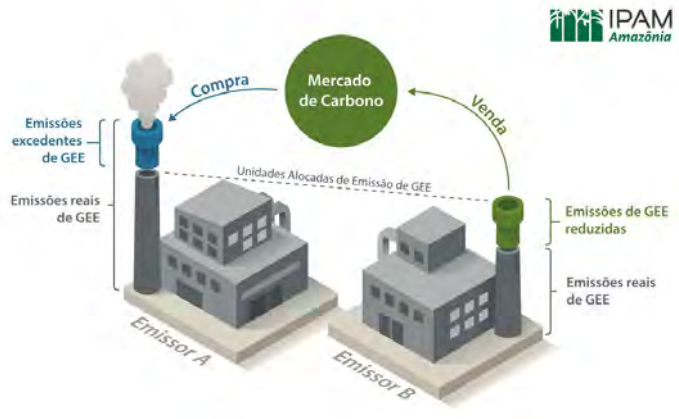
Transport of Buriti in the Municipality of Santo Antônio do Içá (AM). Photo by Felipe Santos da Rosa

Axis VI
Cross-Cutting Objectives – Catalysts and Accelerators

Brazil Needs to Restore 25 Million Hectares of Native Vegetation. Photo by Agência Brasil

20. Climate and sustainable finance, with systematic integration of climate into investments and insurance.

- Proposals for specific financing lines for climate mitigation and adaptation, as well as innovative green financing mechanisms and payments for environmental services.



Agroforestry System I – Tomé-Açu. Photo by Ronaldo Rosa

21. Financing for adaptation.

- Identifying priority areas for ecosystem restoration, spatial intelligence hubs;
- Supporting food security;
- Investing in research and development, socioeconomic and environmental monitoring, and financing social technologies.
- Proposals for scaling up successful experiences.

Technology meets the forest and makes the future sprout.

22. Government procurement integrating climate.

- Mapping, suitability and quality of sustainable and innovative products and production chains, to integrate government purchasing programs, generating positive impacts on the local economy and reducing emissions.

Green finance, innovation, and bioeconomy drive the engine of change.

Plant Genetics Laboratory. Photo by Claudio Bezerra Melo

23. Harmonization of carbon markets and carbon accounting standards.

- Creation of harmonized carbon accounting and certification standards (taxonomy) that ensure environmental integrity and benefits for local communities;
- International reference in high-quality carbon projects, integrating sustainable use, conservation, restoration and income generation.

Amazonian knowledge now also speaks the language of artificial intelligence.

Science Grove, Agouti – INPA. Photo by Valeria Nakashima

24. Climate and trade.

- Adding value and certifications of sustainable socio-environmental products;
- Competitive and inclusive insertion in the markets.

Climate innovation: from data to decision, from science to action.

Genetic Bank of Embrapa Genetic Resources and Biotechnology. Photo by Claudio Bezerra Melo

25. Reduction of non-CO^2 gases.

- Mitigation of methane and other greenhouse gas emissions, with emphasis on livestock and solid waste and effluent management;
- strengthening of low-impact technologies and practices.

Transforming knowledge into solutions and solutions into legacy.

Restoration of Legal Reserve in the Cerrado–Amazon Transition Area – Embrapa. Photo by Gabriel Rezende Faria

26. Governance, State Capacity and Institutional Strengthening for Climate Action, Planning and Preparing.

- Long-term planning and strengthening of the State's capacity to implement and monitor environmental policies using modern monitoring technologies.

The Amazon is the living laboratory of global sustainability.

Nossa Senhora do Livramento Community in Manaus, AM. Photo by Marizilda Cruppe

27. Artificial intelligence, digital public infrastructure and digital technologies.

- Increasing use of digital technologies and artificial intelligence in environmental monitoring;
- Forecasting extreme events and supporting decision-making;
- Integrated remote sensing data, predictive modeling, and collaborative data platforms;
- Investment in undergraduate and graduate courses in these areas;
- Startups and community initiatives focused on clean energy solutions, sustainable management, and the circular economy.

Governance, science, and digital inclusion: the new rivers that connect transformation.

Netflora – Artificial Intelligence for Forest Species Identification. Photo by Evandro Orfanó

28. Innovation, climate entrepreneurship and micro and small businesses.

- Partnerships established between academia and companies through Technological Innovation Agencies and Centers and Incubators;
- emphasis on the sustainable use of biodiversity as the basis for new products and services.

A sustainable future depends on the courage to innovate with purpose.

Utinga Park as a Laboratory for Amazonian Biodiversity. Photo by Agência Pará

29. Bioeconomy and biotechnology.

- Increasing basic knowledge for the diversification of products from the Amazon region and processes that support the bioeconomy and biotechnology;
- Modern technologies such as genomics and artificial intelligence associated with the valorization of traditional knowledge.

Amid the ancestral and the technological, the Amazonian bioeconomy is born.

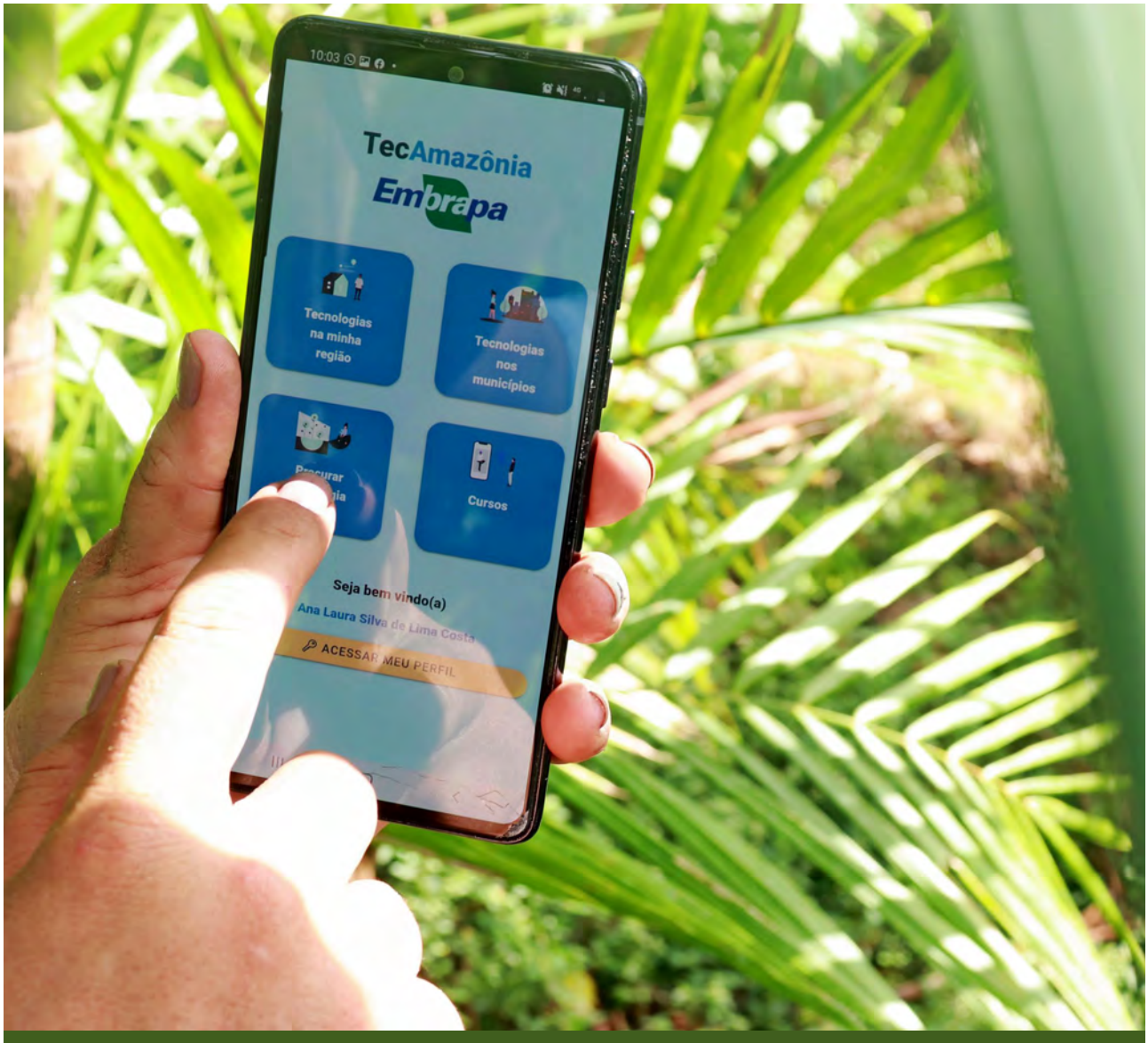
Cadeias produtivas

Fonte: PRS Amazônia

30. Integrity of Information on Climate Issues.

- Integrated databases; system interoperability;
- Interactive platforms; observatories;
- Citizen science apps using open science; programs to counter disinformation.

Investing in successful experiences to accelerate the implementation of the Action Agenda.



TecAmazônia Platform and App. Photo by Ronaldo Rosa

Axis VI highlights the maturity and diversity of initiatives in the Amazon, capable of articulating science, technology, innovation, and public policies to benefit climate action. These institutions advocate for strengthening the diversified Amazonian bioeconomy, avoiding the homogenization of production and the depletion of environmental services. Investing in these catalysts, particularly considering the scaling up of successful experiences, is essential to accelerate the implementation of the Action Agenda.

Genetic analysis at the Biotechnology Laboratory. Photo by Jefferson Christofoletti

Main Barriers to Strengthening Science and Technology in the Amazon

Amongst the most common barriers are:

- Budget unpredictability.
- Disregard for the “Amazon Cost” in investments.
- Complex processes for importing inputs, releasing funds, and hiring personnel.
- Difficulty accessing remote areas, high transportation costs, and a lack of specialized equipment.
- Poor connectivity.

The Amazon’s scientific potency still faces paths full of barriers.

Research activity on bacterial cultivation – IEC

- Difficulty retaining specialists in the region.
- Low integration between science and policy.
- Uncertainty and obstacles in the regulatory environment;
- Socio-environmental pressures and territorial conflicts.
- Lack of scaling of successful actions at regional levels.
- Regulatory conflicts in border areas hindering cooperative actions across the Pan Amazon.
- Undervaluation of traditional knowledge, reducing the potential for contextualized and socially relevant solutions.

Biosafety Level 3 Laboratory (BSL-3)

Proposed Strategic Solutions

- Structural and long-term investment.
- Financial support for the development of mitigation and adaptation technologies, including agroforestry systems, renewable energy, water management, ecological restoration, and productive restoration.
- Modernization of laboratories, field stations, and data centers in different regions of the Amazon to reduce intra-regional asymmetries.
- Provision of resources for research focused on the Amazon, calls for proposals aimed at protecting biodiversity, traditional peoples and communities (PCTs), and family farming.
- Integration of PD&I [Research, Development and Innovation] institutions and governments of Amazonian states and Pan-Amazonian countries, facilitating the movement of researchers between bordering countries.
- Research funding to generate socioeconomic indicators for forest restoration reference systems.

Concrete paths to strengthen science and innovation in the Amazon.

Tucupi (cassava juice). Photo by Ronaldo Rosa

- • Qualification and training of academic human resources in bioeconomy, sustainable technologies, carbon accounting, and socio-environmental management.
- Strengthening international cooperation and research networks, ensuring global protagonism for Amazonian science.
- Strengthening scientific governance.
- High-resolution environmental monitoring and modeling, integrating remote sensors, field data, and artificial intelligence to predict impacts and guide public policies.

Investments, knowledge, and cooperation as the basis of transformation.

Nursery with Amazonian Robusta Coffee Seedlings – Embrapa. Photo by Aliny Melo

- Valuing and integrating traditional knowledge, ensuring prior, free, and informed consultation and recognizing the importance of this knowledge for conservation and climate adaptation, with fair benefit sharing.
- Strengthening endogenous growth capacities through technology packages adapted to sociocultural contexts, in which innovations are created through partnerships between local PD&I institutions and regional populations.
- Making consistent investments in small-scale infrastructure, such as local markets, small-scale docks, and other logistical improvements.

Long-term strategies to consolidate a sustainable and inclusive economy.

Good Practices for Brazil Nut Extraction in Natural Forests – INPA. Photo by Vitor Alberto de Matos Pereira

- Prioritizing sustainable activities and systems based on the use of live labor, rather than investing in technology packages aimed at increasing the productivity of certain commodities that induce homogenization and affect environmental services.
- Implementing solutions for scaling up small businesses, training, and a facilitated environment for market access.
- Strategies and infrastructure to strengthen the bioeconomy, training, and qualifications for small entrepreneurs, including access to national and international markets.
- Technical assistance and rural extension focused on the region's vocations, enhanced by digital tools.

From research to public policy: solutions for the climate and for life.

Amazonian science possesses established technical capacity, robust knowledge, and innovative potential. With political support, adequate resources, and integration with society and governments, it is possible to exponentially enhance these contributions in favor of the COP 30 Presidency's Action Agenda.

Afterword

SPEECH BY THE PRESIDENT OF COP 30 UPON RECEIVING CONTRIBUTIONS FROM THE AMAZONIAN SCIENTIFIC AND TECHNOLOGICAL COMMUNITY.

This contribution I'm receiving is a dream come true. Months ago, I spoke with Ms. Raimunda Monteiro and told her that we had to take advantage of the COP event in order to explore a dimension we sometimes forget. We think of the COP as a national conference, it's true, but it's also an occasion to showcase Brazil, what there is in Brazil. I would like to thank Minister Márcio Macedo for his suitable statement, which I repeat here, because this is the COP. We're already at the COP, and you're participating in the COP. I'm thrilled to come here and see this demonstration of how much the Amazon can offer in contribute to the world and how President Lula's choice to hold the COP in the Amazon will have an absolutely extraordinary impact on Brazil as well.

Most Brazilians have no idea what's happening in the Amazon, and we're all learning. I want to thank Ms. Tanara Laushner, the magnificent Rector of the Federal University of Amazonas (UFAM), for welcoming us to Manaus with this fantastic audience. Of course, I'd like to thank the Minister of Science, Technology, and Innovation and the President of the Brazilian Society for the Advancement of Science (SBPC). I must also address what I dare call my team, which includes the Special Envoy for Women, Janja Lula da Silva. Also included at this table are Denis Minev, who took me along the Amazon rivers to explore this region; Tatiana Sá, who is participating here and is incredible; Ima Vieira, who has been fabulous, both members of my Scientific Council. I also address Virgílio Viana, from my Adaptation Council.

Be aware that the Amazon is fully into the preparations for COP 30. And COP 30 must have, in Brazil, the same impact as Rio 92, which was to show the nation that no one knows Brazil better than Brazilians. This stemmed

from Rio 92, when it was discovered that the whole world was interested in Brazil and that we needed more science, more institutions, more people who know Brazil. Because we have to be the greatest experts in ourselves, and that's why I receive this document today with such enthusiasm.

Brazil does produce science, as the president of the SBPC says, and how proud we are of this throughout the country. So, be invited to COP; it's essential that everyone comes. The presence of social movements at COP 30 in Belém is essential, and Minister Márcio Macedo is responsible for ensuring that.

All social movements will certainly be at the COP. There's room for everyone, because this COP needs to be inclusive. We must bring Brazil togethet in orde to show the world that we are united around the Amazon. And that this incredible region, so associated with problems and challenges, is the region from which some of the most important solutions for the world will emerge.

I am extremely grateful for your contribution!

Manaus, August 20, 2025.

ANDRE ARANHA CORREA DO LAGO

President-Designate of COP 30

List of Institutions

Associação Nacional dos Dirigentes das Instituições Federais de Ensino Superior Região Norte - ANDIFES

Empresa Brasileira de Pesquisa Agropecuária – Embrapa

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Fundação de Medicina Tropical Dr. Heitor Vieira Dourado – FMT-HVD

Fundação Oswaldo Cruz – Fiocruz

Fundação Oswaldo Cruz do Amazonas

Fundação Oswaldo Cruz Noroeste - Fiocruz-RO

Fundação Universidade Aberta da Terceira Idade – FUnATI

Instituto de Conservação e Desenvolvimento Sustentável do Amazonas – IDESAM

Instituto de Desenvolvimento Sustentável Mamirauá – IDSM

Instituto de Tecnologia da Amazônia – Intencam

Instituto Evandro Chagas – IEC

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Instituto Federal de Educação, Ciência e Tecnologia do Amapá – IFAP

Instituto Federal de Educação, Ciência e Tecnologia do Amazonas – IFAM

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Universidade Federal de Rondônia – UNIR

Universidade Federal de Roraima – UFRR

Universidade Federal de Tocantins – UFT

Universidade Federal do Amapá – UNIFAP

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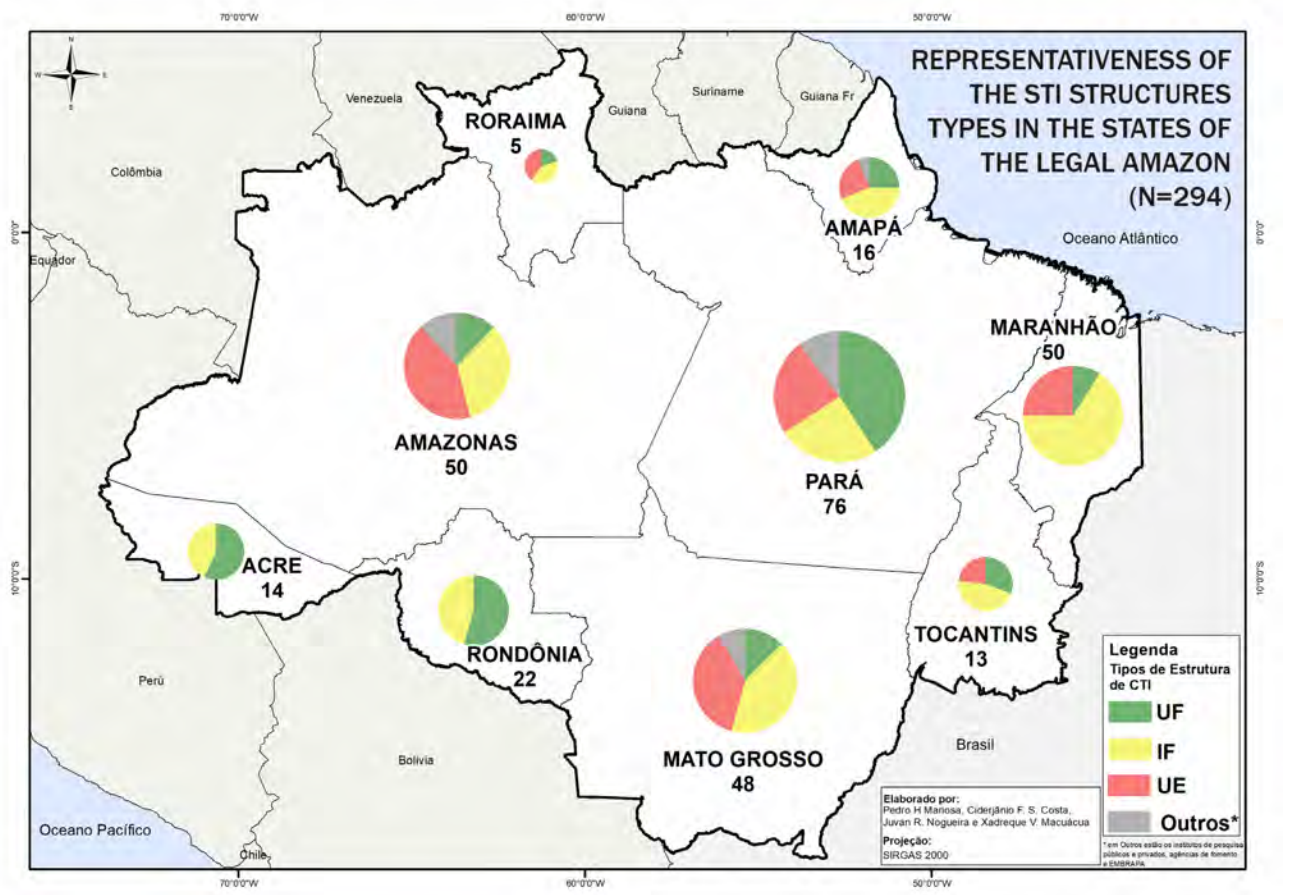
Universidade Federal do Oeste do Pará – UFOPA

Universidade Federal do Pará – UFPA

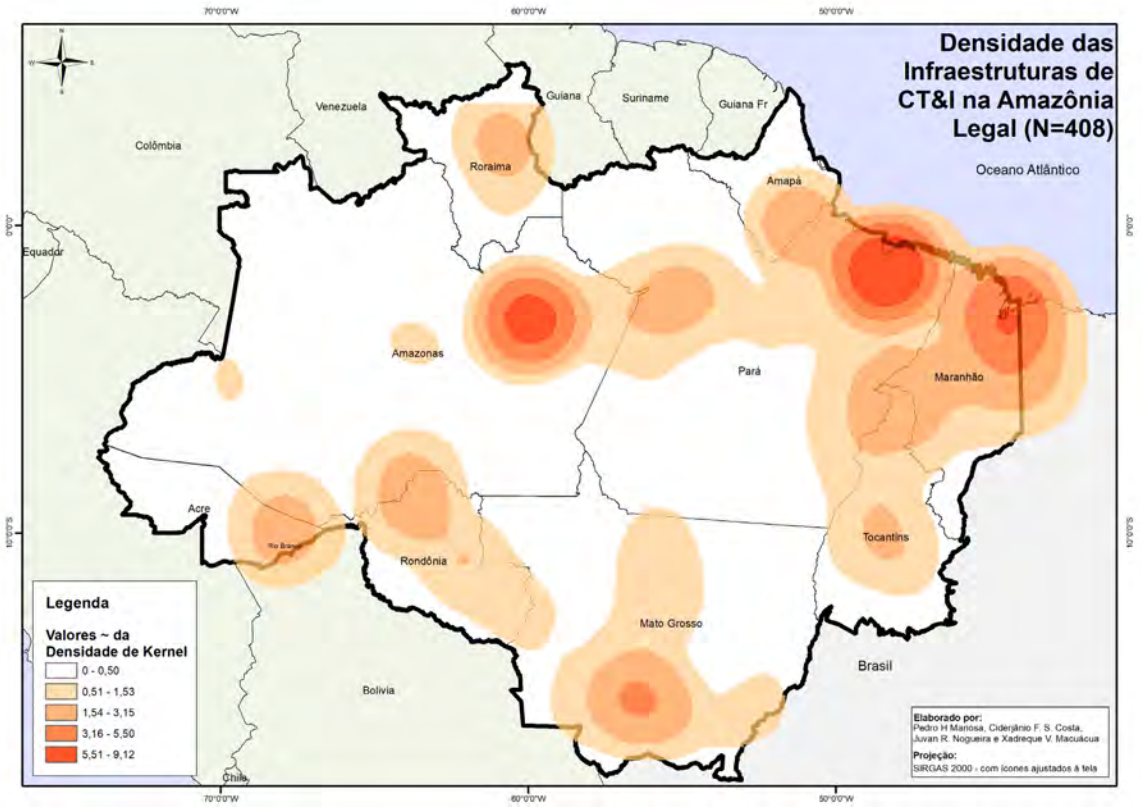
Universidade Federal do Sul e Sudeste do Pará – UNIFESSPA

Universidade Federal Rural da Amazônia – UFRA

Annexes



Source: UFAM/Acariquara Institute. RHISA Network Project. Prepared by: Pedro H. Mariosa, Juvan R. Nogueira, Danilo Egle, Henrique S. Pereira, Ciderjânio F. S. Costa, Manaus, 2025.



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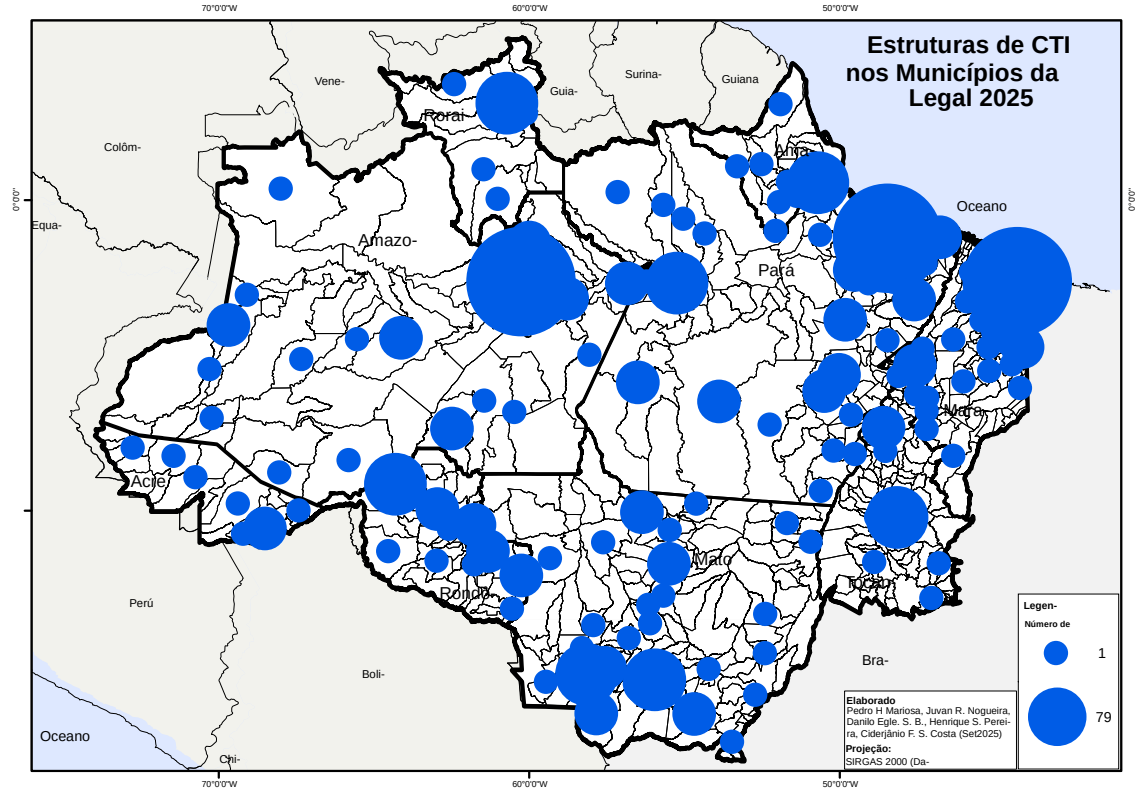

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