

AN AGENDA FOR THE DEVELOPMENT OF THE AMAZON

AMAZON
CONCERTATION



AN AGENDA FOR THE DEVELOPMENT OF THE AMAZON

AMAZON
CONCERTATION

Executive summary.....	4
An agenda for the development of the Amazon	6
Four amazons to recognize and know the brazilian Amazon	14
Specific action fronts	24
Structure building	56
Transversal action fronts	70
About the <i>Amazon Concertation initiative</i>	88

EXECUTIVE SUMMARY

This document is a contribution from the **Amazon Concertation** initiative to planning efforts and proposals of actions for the development of the Amazon based on the capture of dialogues within the network. Valuing other initiatives underway and incorporating a multiplicity of perspectives, the intention is to indicate some premises, ambiguities and possible courses for the region's future. More specifically, it was prepared to provide inputs for decision makers involved in some current events, processes and movements, such as the Conference of the Parties (COP26) of the United Nations Framework Convention on Climate Change (UNFCCC), from the Climate and Development initiative: 2030 visions for Brazil 2030 and the 2022 political-electoral context.

In the coming pages some paths for the development of the Amazon are presented based on a set of ambitions: an increase in quality of life for the local population, valuing the cultural-identitary dimension, establishing the region as a major net remover of carbon emissions, reinforcing incentives for all economic activities (from extensive livestock production to extractivism) that value the standing forest, and the reconstitution and strengthening of democratic principles (especially for civil society, the indigenous peoples and the traditional communities). The **paths** proposed include:

- *The articulation between public and private resources and the manifold knowledge fields to achieve multiplication and scale;*
- *The valorization of experience and knowledge from an approach based on the technical-scientific, sensitive, and cultural tripod;*
- *Local-global cooperation;*
- *The recognition of the plurality and diversity of the Amazon.*

In addition to the paths, a **framework** that didactically references the Amazon based on “**four Amazons**” is proposed, with specific, structure building, and transversal action fronts:

Conserved areas	Transition areas	Converted areas	Cities
Basic premises			
Specific action fronts			
Structure building			
Transversal action fronts			

In terms of occupation, soil use and economic opportunities, the specific action fronts are oriented by the four clusters formed by areas of **conserved forest, transition areas, converted areas and cities**. In order that a set of premises for each of the four Amazons may be observed, **specific actions** grouped in **six fronts** are necessary:

1. Economy 2. Fiscal instruments and financial mechanisms 3. Territorial organization and land title regularization 4. Science, technology and innovation 5. Infrastructure 6. Indigenous issues

For the six **specific action fronts**, as well as for the structure building and **transversal** actions, **concrete actions** are listed based on the proposals and actions of the members of the Amazon Concertation and are presented at the end of this publication. Together with the engagement of the initiative's network throughout 2020 and 2021, the concrete actions make up the pulse and place of realization of the shared vision of development for the Amazon region.

Enjoy reading it!

AN AGENDA FOR THE DEVELOPMENT OF THE AMAZON

The development of the Amazon is based on the premise of constant reinforcement of **compatibility between the standing forest and economic development**. Throughout the diverse cycles of exploration of the region, the environment has been continuously associated with barriers to production activities. A contemporary conception of development in areas characterized by high natural capital and the pursuit of social justice, as is the case of the Amazon region, must be based on its main assets: the forest and the rivers, with all the elements they comprise - soils, water, vegetation and animals, and the histories and modes of life. From the local standpoint, such a conception should include a stronger connection with the quality of life of its population.

Addressing the development of the Amazon also means understanding two of its main common denominators: **land use and water resources**.

Much more than property itself, the ways in which the land is used are fundamental for enabling the maintenance of the standing forest, for territorial organization and for the proper use of the soil, for the creation of cultural and identity links between people and the environment, for the productivity of the land by means of hydrological cycles and flowing rivers and for incentivizing economic activities based on the fair distribution of wealth generated across generations. Moreover, the **standing forest** as an **economic and socio-environmental asset** and also as an **ethical-normative value of nature** is an inspiration for the management of cities based on nature-based solutions.

The **rivers** and other water bodies in the Amazon are linked with the constitution of local citizenship, with access to health and to essential services (such as social security), with the food systems, with personal mobility and with the dynamics of the regional economy. And all of this taking into account the forest, rural and urban environments.

Land use and the use of water resources is equally related to the topics of **deforestation** and **environmental degradation**, which are central to the debate on the development model for the Amazon. It is known that deforestation exacerbates multiple crises in the region. From recent years to the present, we



Artist: Chermie
Ferreira

¹ Different key landmarks reinforce the urgent need for action in relation to the so-called tipping point: the clamour of indigenous peoples for conservation of 80% of the Amazon biome, the Science Panel for the Amazon (SPA), the Sixth IPCC Assessment Report (“Climate Change 2021: the Physical Science Basis”)

have accompanied the confluence of a series of crises, denominated the **perfect storm**. The increase in deforestation, dangerous closeness to the tipping point¹, aggravation of poverty, the weakening or interruption of development policies in healthcare, education, sanitation and infrastructure (access to energy and connectivity, for example), democratic fragility and restriction of the civic space of organizations and individuals, the intensification of illicit and illegal economic activities and a carbon intensive economy, losses in biodiversity and in ecosystems are the components of this storm. Such a destructive political-cultural environment blocks the emergence of virtuous economic initiatives supported by modern technologies to face the challenges to well-being in rural, forest and urban areas and the preservation and regeneration of valuable forest assets.

In addition to representing the aggravation of regional crises, the deforestation of the Amazon puts at risk the commitment (assumed under the Paris Agreement) to ensure that the increase in average global temperature does not exceed 2°C compared with pre-industrial levels, with efforts to limit the temperature increase to 1.5°C, as well as the 2030 Agenda, the Sustainable Development Goals (SDGs), the Aichi targets and the post-2020 Global Biodiversity Framework under discussion in the Biological Diversity Convention. These factors position the Amazon at the **center of global climate change and biodiversity geopolitics**. Why?

For a long time, it has been known that the region is extremely relevant, not just for Brazilians, but for the global population. Its assets and socio-environmental flows are central for **climate balance**, for the **conservation of biodiversity**, for the **vitality of ecosystem services** (especially carbon and its relationship with rainfall and food production), for the health of the close connection between Pan-Amazon dynamics and for **regional culture**. In another way, the Amazon also entered the center of climate geopolitics due to its construction of pathways to institutional innovation in terms of **inter and intra-regional dynamics and the constitution of sub-national instances, the expanded participation of non-state actors and the decentralization of environmental policies** (such as the Leticia Pact and the Consórcio Interestadual da Amazônia Legal (Legal Amazon Interstate Consortium) and the recently launched Plano de Recuperação Verde [Green Recovery Plan]). Lastly, in the midst of global and local contexts of high relevance to the development of the Amazon, there are many ways in which Brazil impacts the Amazon and that extrapolate its territorial dynamics.

Accordingly, Brazil’s relationship with contemporaneity involves the Amazon. Climate change and the structural transformations in global society in the 21st century, in particular those provoked by technology, intensify **the region’s position in the construction of a new development paradigm — for Brazil and for the world** — oriented to natural capital, the reduction of inequalities and

“We have never been able to think of the Amazon as an integrated project. It needs to be the material base for a dignified life for people. We need to be courageous and to dare to do something new in the Amazon. Perhaps a triple revolution. A revolution in knowledge, a revolution in production and a revolution in new forms of management and governance.”

(Simão Jatene)

valuing culture. In movements at times synergic and at other times conflicting, the **region inserts and removes Brazil from the world scene, driving the country towards the future**. Thus, the Amazon is a thread that realigns us not only with contemporaneity, but with the world. Additionally, it provokes a **new sense of (green) sovereignty**, associated with knowing how to care for and protect the planet’s natural assets.

Given the points above, it seems that we are faced with an **urgent transition to a new development model** for the Amazon. The major challenge for contemporary societies (and the report of the IPCC Working Group I for the Sixth Assessment Cycle (AR6), entitled *Climate Change 2021: the Physical Science Basis* - highlighted its predominance) is to **transform the relationship between economy and nature** and the region is in a privileged position to be in the forefront of this movement. This is where we may encounter the **opportunities for its economic growth to regenerate the social and natural fabric**, hitherto frayed by existing predominant activities. This regeneration has the potential to inspire transformations that, by means of research, science and technological innovation, may benefit not only its territory, but the country as a whole.

In this regard, one question posed is **to which model** do we want to migrate as a society? In overall terms, the ambition may be formulated as an increase in quality of life for the local population, valuing the cultural-identitary dimension, establishing the region as a major net remover of carbon emissions², reinforcing incentives for all economic activities (from extensive livestock production to

² The Amazon as a large carbon sink that enables Brazil to become a net zero country.

extractivism) that value the standing forest, and the revival and strengthening of democratic principles (especially for civil society, the indigenous peoples and the traditional communities).

Another fundamental question is how this transition will take place. The following points indicate paths:

- The affirmation of the **Amazon as a solution, and not a problem**. There is extensive recognition of the region's structural and transversal problems, that persist in time, in space and in the landscape, but it is necessary to think about how the region itself presents solutions for its development. In this regard, the relationship between the Amazon and the affirmation of democracy and climate commitments becomes closer. As does the relationship between mankind and nature and well-being by considering the territory as a provider of environmental services for the planet in development proposals aligned with contemporaneity.
- The declaration of the **Amazon as a priority for Brazil's sustainable development**. The Amazon has an important role in national development and will exercise this by means of local and regional solutions and by the appropriation of the region by the rest of the country, with respect for the indigenous peoples and traditional communities.
- The **(re)connection of the Amazon as the identity of Brazilians**, which in itself contains an immense diversity (in the forests, the rural and urban zones). The forest represents science, the climate, civil society, international cooperation and many other aspects of our nation. The region is the result of its interaction with diverse population groups in Brazil, that contribute to it, an example being the Northeast region. Together with its great biological diversity, the Amazon has a lot to teach us about social plurality and the interaction individual/nature and other possible modes of constituting society and life on the planet. Accordingly, the region can inspire other modes of life for those who do not live there. Lastly, the investments in education and in valuing culture are fundamental for us to incorporate the forest into the lives of those who live in it and into the collective imaginary of all Brazilians.

“What should any Brazilian know about the Amazon? That the Amazon is part of Brazil, that the conflicts taking place there are conflicts of Brazilian society, they just appear with more clarity there due to the geographic particularities of the region; that the Amazon is not a demographic void.”

(Bertha Becker, 2004)

- Since the Amazon represents a global commitment, the solutions for the transition require the **articulation of resources and knowledge** in their diverse natures and fields for us to achieve:
 - » **multiplication and scale** in order to conjugate strategies of localized initiatives (and their potential for multiplication) with macro-approaches that constitute the basis for a state defragmentation policy that goes beyond political cycles and partisan logic;
 - » **recognition of and valuing** experience, knowledge and wisdom based on a **landscape approach** sustained by **technical-scientific, sensitive and cultural** elements;
 - » **mobilization** of public and private resources in innovative formats to enable major development initiatives and programs, and thus overcoming the logic of projects;
 - » **local-global cooperation** open to institutional innovations to generate proposals for development.

³ This structure is inspired by the work of Danielle Celentano and Adalberto Verissimo, from 2007, in which they analysed the “boom-collapse” standard in the model of occupation and the advance of the frontier in the Amazon, available at: <https://amazon.org.br/publicacoes/avanco-da-fronteira-na-amazonia-do-boom-ao-colapso/>. It was discussed initially in November 2020 (6th plenary) with all network participants. As will be discussed ahead, this is only one lens, as is the proposal of Samuel Benchimol of a formulation based on eight Amazons.

- Recognition of the **Amazon’s plurality and diversity**, respecting the diverse voices and visions of development in the region.

Accordingly, we assume that the Amazon does not permit simplifications and that, from the point of view of the landscape, one of its possible visualizations would be based on a **framework made up of four Amazons and would consider courses and actions to reconcile conservation and a forest economy and the quality of life of its inhabitants**³.

It should be noted that the framework below does not exhaust all the actions to be implemented, but takes into account social and natural diversity and, based on this, offers a reference for the preparation of an initial plan for any intervention that seeks to provoke a wide-ranging, long-lasting impact on the region. It should also be considered that the socio-spatial inequalities are transversal to the regions and should be treated centrally in any development proposal that keeps the forest standing.

It should also be noted that just as important as identifying the needs and specific actions for the four regions delineated is understanding the coexistence and permeability among them, considering the intense dynamism of flows and frontiers of the Amazon. Furthermore, the socio-economic vocations of the different Amazonian territories should be taken into account.

Lastly, the proposal of the Four Amazons is only one of the many ways of recognizing the region’s diversity.

“Ah, Brazil is not a country, not a nation, not a people, but rather a landscape.”

(Nelson Rodrigues)



Artist: Raket Caminha

FOUR
AMAZONS
TO RECOGNIZE
AND KNOW
THE BRAZILIAN
AMAZON

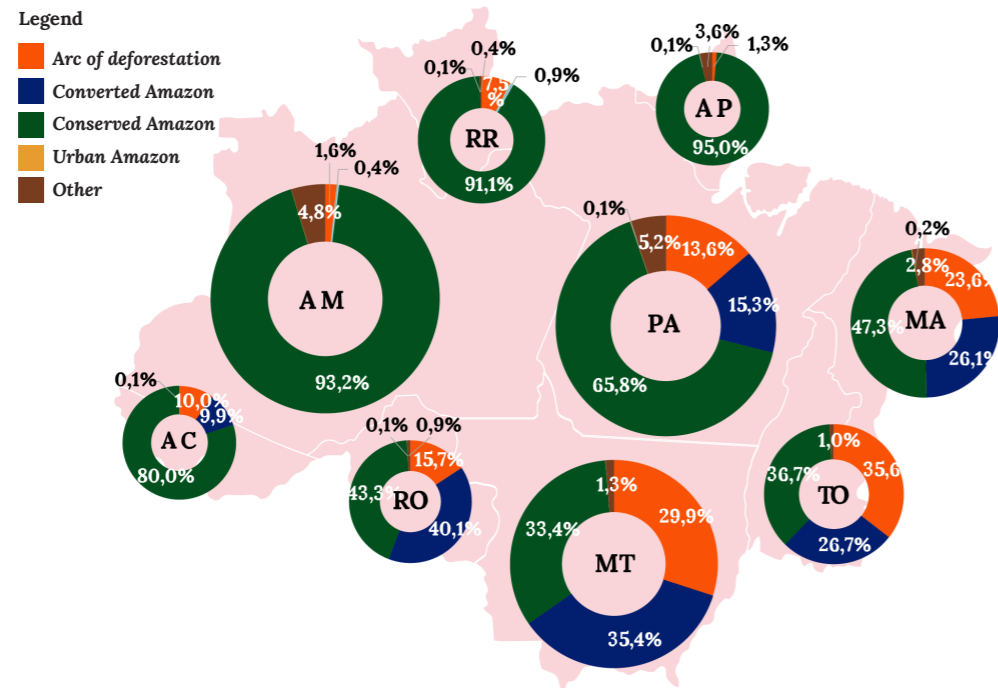


FOUR AMAZONS TO RECOGNIZE AND KNOW THE BRAZILIAN AMAZON

The Legal Amazon region comprises different biomes and types of vegetation. The region has forests in dry lands, flood plains and wetlands, as well as cultivated areas and many other types of vegetation physiognomies. There are conserved forest areas and deforested, areas as well as areas of transition between the two. It also includes municipalities similar to other urban centers in Brazil.

In this context, even if any attempt at simplification of a complex reality could require adjustments and complements, a characterization that permits the distinction of some sub-regions is fundamental for identifying which are the predominant activities, specific needs and priority actions in each one of them.

Breaking the territory of the states down into the Four Amazons - 2019



Source: MapBiomias.
Note: Others refers to the portion of the territory that cannot be classified in any of the categories of the Four Amazons.



Artist: Chermie Ferreira

4 The term transition can be understood as synonymous with areas under pressure. It does not imply to increase the converted areas, because the transition is a two-way street. The theory of forestry transition, for example, posits that the territories that have extensive forest coverage undergo a process initially characterized by the conversion of forests to other uses, reaching a lower limit, from which the forest area starts to increase again, under the influence of the dynamics of urban sectors, among other factors. For details, see Brandão, F., Moreira, T., Fonseca, F. (2021). *Recomendações para a consolidação do Plano Estadual Amazônia Agora para o horizonte de 2030.* (Recommendations for the consolidation of the Plano Estadual Amazônia Agora for the horizon of 2030). Belém-PA: The Nature Conservancy (TNC), Center for International Forestry Research (CIFOR) and World Agroforestry (ICRAF). However, it is necessary to recognize that the recovery of forests on anthropized land does not necessarily mean the recovery of biodiversity. The mass of trees might even be recovered in some decades, but they will potentially be forests impoverished in terms of species and without the same interaction networks compared with pristine forests.

In terms of occupation, soil use and economic opportunities, an effort was made to characterize specific action fronts for the four clusters formed by areas of conserved forest, transition areas⁴ (what has come to be called the “arc of deforestation”), converted areas and cities. There are also transversal action fronts, in which there is no distinction between the four groupings. Command and control policies and the guarantee of a broad range of rights, including protection for the indigenous peoples and traditional communities, for example, should be part of an agenda for the Legal Amazon as a whole.

Nevertheless, in the conserved Amazon, the predominant activity is **conservation**, having a bioeconomy based on social biodiversity (socio-bioeconomy) with a low environmental impact as an alternative. In this case, the basic premise is that the intact forest remains intact. Whereas in the transition areas, the premise involves not only containing deforestation, but also regeneration, and the predominant activity would be the extraction of forestry, timber and non-timber products by means of forest reclamation and sustainable forest stewardship, also linked with the socio-bioeconomy. Here the concept of **mosaics** is important. These consider the existence of forest fragments interspersed with other production systems, in a **landscape perspective** that establishes balanced soil use, with space for agroforestry systems (AFS), integrated crop-livestock-forestry systems (iCLF), as well as in the regions with already converted native vegetation, where the predominant activity is essentially the **production of agro-mineral commodities**.

In these areas, the basic premise is that full traceability of the value chains ensures the lowest possible environmental impact. Finally, the cities have **services, industries and entrepreneurship** as their main economic activity and should operate under the concepts of urban sustainability, including sanitation, a circular economy and mobility, among others. It is essential to point out that, in spite of the fact that urban nuclei have similar dynamics, it is artificial to treat such a broad set as the Amazonian cities in a standardized way. In the Amazon, the diversity of the forest also invades the urban environment, forming a specific ecosystem of urban situations that demand specific policies, programs and infrastructure, which means that each city and metropolis requires a different approach. Accordingly, the heterogeneous nature of the cities should be a central component in the proposal for a new development model, correlating social, economic and ecological requirements with the multiple forms of urban occupation.

In order to observe the premises, specific actions grouped in six fronts are necessary:

01. Economy includes models of economic activities that start to incorporate more sustainable forms of production;

02. Fiscal instruments and financial mechanisms covers fiscal instruments and financial mechanisms to guide this transition

03. Territorial organization and land title regularization covers the formulation of long-term state policies that, among other things, address the use of public areas, forestry concessions and the consolidation of protected areas; the construction of a robust land administration system; the integration of the constituent organizations; the engagement of society; and the active coordination of implementation at state level;

04. Science, technology and innovation involves means of promoting science, technology, innovation, research and development;





05. Infrastructure includes understanding nature as infrastructure, logistics infrastructure, people flows, connectivities, the infrastructure of the care economy;

06. Indigenous issues contemplates the integral protection of the Indigenous Peoples and Lands and the support to the elaboration and implementation of the Indigenous Lands' Environmental and Territorial Management Plans.

In addition to the six specific action fronts, the proposal involves intense activities in a set of structural development and transversal actions. The majority are strictly linked with State actions, but equally demand social control on the part of society so that they are effective for all social groups.

The following framework⁵ consolidates topics or focuses for the concentration of specific actions in these six fronts.

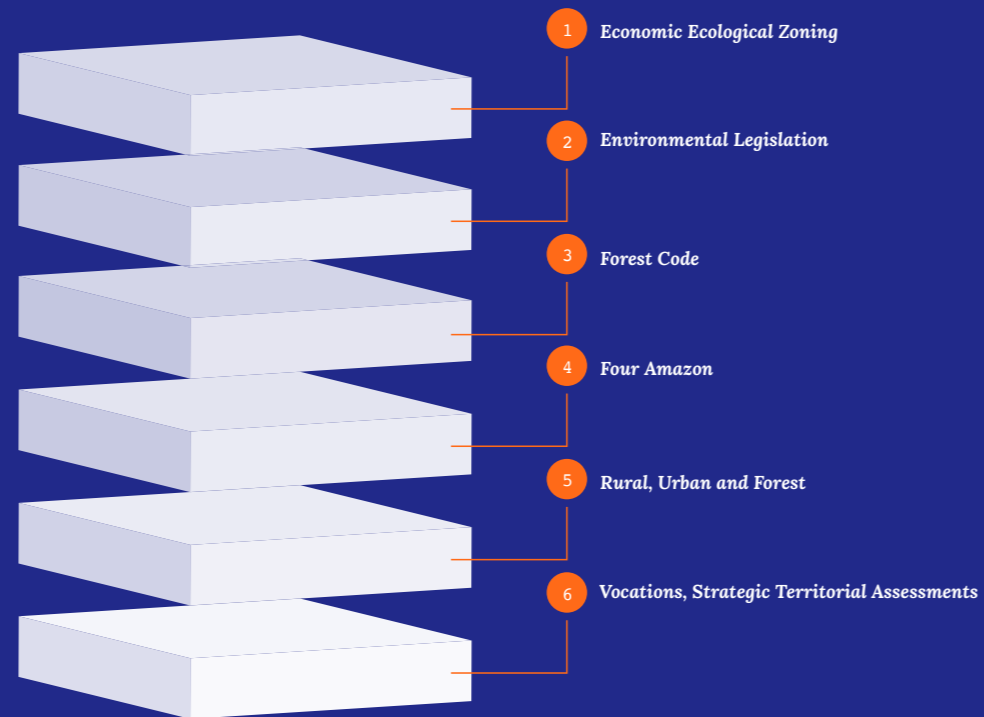
5. The table was discussed with the members of Amazon Concertation during a plenary session, a monthly encounter held by the initiative. Since the regions are isolated from each other, it is possible that some of the activities or topics included in one may apply to others.

 Conserved areas	 Transition areas	 Converted areas	 Cities
Basic premise <ul style="list-style-type: none"> The intact forest remains intact 	<ul style="list-style-type: none"> Containment of deforestation and regeneration of the forest and biodiversity 	<ul style="list-style-type: none"> Full traceability ensures minimization of negative externalities 	<ul style="list-style-type: none"> Increase in productivity of urban economic activities Urban sustainability (sanitation, circularity, mobility etc.) Application of Nature Based Solutions to the cities and their infrastructure
Specific action fronts			
1. Economy <ul style="list-style-type: none"> Forestry conservation, with general stewardship Socio-bioeconomy Accelerators of small bio-economy businesses, with use of technologies Tourism Creative economy Social and solidarity economy 	<ul style="list-style-type: none"> Forestry restoration, nature-based solutions, integration with sustainable stewardship, AFS, ICLF, socio-bioeconomy Forestry concessions Native silviculture Nature-based tourism Strengthening of existing agro-food chains 	<ul style="list-style-type: none"> Production of agro-mineral commodities Low externality commodities inserted in soil use mosaics covering preservation and production areas Ecological corridors to maintain biodiversity Ecosystem restoration Forestry concessions Maximum use of local products 	<ul style="list-style-type: none"> Services Industries Creative economy Social and solidarity economy Entrepreneurship Public-Private Partnerships (urban infrastructure, e.g. basic sanitation)
2. Fiscal instruments and financial mechanisms <ul style="list-style-type: none"> Financial mechanisms oriented to conservation, not limited to carbon REDD+ projects 	<ul style="list-style-type: none"> Payment for Environmental Services (PES), including in addition to Forest Code (CF) Tax incentives for the low impact bioeconomy 	<ul style="list-style-type: none"> PES (positive externalities) Sustainable agriculture incentive programs (e.g.: ABC program) Tax and financial incentives conditioned to conservation Elimination of financing for non-sustainable activities and, over time, ones without traceability 	<ul style="list-style-type: none"> Tax incentives that relate industry and services to conservation activities and distribute benefits to other areas of the Amazon Incentives for the circular economy (e.g.: solid waste) Urban initiatives inspired by Nature-Based Solutions
3. Territorial organization and land title regularization <ul style="list-style-type: none"> Revenue from public lands and registration in the land administration system Destination of public forests Consolidation and expansion of Conservation Units and indigenous lands Recognition of collective rights of other traditional communities 	<ul style="list-style-type: none"> Revenue from public lands and registration in the land administration system Destination of public forests Conservation Units and public concessions Emphasis on land administration with land title regularization related to individual and collective rights and conflict resolution 	<ul style="list-style-type: none"> Emphasis on land administration with land title regularization related to individual and collective rights and conflict resolution Full compliance with CF 	<ul style="list-style-type: none"> Revision of Amazon Steering Plans Incentives for the reoccupation and restoration of unoccupied and/or deteriorated properties to achieve targets related to compact and connected cities Urban land title regularization
4. Science, Technology and Innovation <ul style="list-style-type: none"> More in-depth knowledge of nature and local cultures Social technologies Inclusion of local populations, mainly youth 	<ul style="list-style-type: none"> Native silviculture Sustainable stewardship Science applied to low impact bioeconomy 	<ul style="list-style-type: none"> Strengthening of traceability systems (blockchain, remote sensing, etc.) Development of technologies more adequate for commodity-forest integration Food systems compatible with maintenance of biodiversity Technologies and methodologies for measuring carbon in activities related to soil use and monitoring of biodiversity 	<ul style="list-style-type: none"> Solid waste Circular economy Creative economy Energy Representativeness of local researchers Decentralized expansion of research and innovation centers
5. Infrastructure <ul style="list-style-type: none"> Very low impact basic logistics for access to remote locations, but with high technology to meet demands based on modern conceptions, for example waterway transportation 	<ul style="list-style-type: none"> Outflow of biodiversity products Very low impact green infrastructure 	<ul style="list-style-type: none"> Clean port and highway logistics, etc. 	<ul style="list-style-type: none"> Green infrastructure associated with housing agenda (water, sanitation, mobility, parks, restoration rings etc.) and based on new building materials (low carbon, energy efficiency etc.), to increase residents' comfort and reduce use of harmful products. Infrastructure for care, culture and well-being Climate change adaptation measures Integration of energy systems
6. Indigenous issues <ul style="list-style-type: none"> Full protection of indigenous lands, their social diversity and their biodiversity 	<ul style="list-style-type: none"> Removal of invaders who threaten the integrity of indigenous lands located in areas affected by the expansion of the Amazonian economic frontier 	<ul style="list-style-type: none"> Recovery of the ecosystem in indigenous lands that have been invaded 	<ul style="list-style-type: none"> Elaboration of programs to protect indigenous persons living in cities in the Amazon, in particular income generation and protection of their rights
Structure building <ul style="list-style-type: none"> Command and control actions for deforestation and degradation (rule of law), including combating land grabbing and full application of the Brazilian Forest Code Engagement of local populations in protecting natural resources, including by means of environmental education Strengthening of Basic General Education and Vocational Education, study grants Access to quality healthcare (strengthening the public healthcare system) Public security for everyone Combating illegal/illicit activities Climate change adaptation 			
Transversal action fronts <ul style="list-style-type: none"> Strengthening governance in the Amazon Local institutional capabilities and role of municipalities Sub-national bodies Interactions with international governance entities Valuing culture: The Amazon as extremely high value heritage for society as a whole 			

Note:ABC - Low Carbon Agriculture; CF - Forest Code; SET - Science and Technology; ICLF - Integration of crops-livestock-forest; PES - Payment for Environmental Services; AFS - Agroforestry Systems; REDD+ - Reducing Emissions from Deforestation and Forest Degradation; conservation; sustainable management of forests; and enhancement of forest carbon stocks.

Granularities and land use in the Amazon

The logic of the Four Amazons is one of the ways of thinking and ordering the use and ownership of land and the relations of people in the Amazon. It is fundamental to relate them with other territorial organization instruments, always taking into account reflections about in which areas it is possible to intensify land use, have population concentration centers, priorities for the preservation of the forest etc. And, above all, it is necessary to consider the flows and dynamics of peoples, the economy and nature, in addition to mobility on the frontiers of the Amazon. The image below illustrates some of these instruments:



Artist: Paula Sampaio

SPECIFIC

ACTION FRONTS

SPECIFIC

ACTION FRONTS

SPECIFIC

ACTION FRONTS



SPECIFIC ACTION FRONTS

1. Economy

The role the Amazon plays in the country's development is observed by means of diverse connections with the rest of the country, including the economy, but the regional economy also depends on the performance of the national and global economy. In 2018, the Legal Amazon corresponded to 9.8% of the country's GDP, which was R\$ 623 billion that year, reflecting an increase of 1.5 p.p. compared with 2008. Nevertheless, the share is lower than the representativeness of the region's population (15.8%). Furthermore, the per capita GDP of the region is 38.7% lower than the rest of the country. In the State Competitiveness Ranking it may be noted that those in the Amazon region are among the lowest positions, with one or other exception.⁶

As in the rest of Brazil, **Services have a higher participation in the economy** in the Amazon and the region's labor market has little to do with the forest. Assessing the composition of the Legal Amazon's Gross Value Added (GVA) in 2018, it may be seen that 41.3% comes from the Service sector, although this share is lower than the average for the rest of Brazil (57.1%). On the other hand, the share of Public Administration (24.2%) and Agriculture and Livestock (11.9%) is considerably higher in the region than in the rest of the country (16.7% and 4.5%, respectively).⁷

In the labor market, a similar pattern is observed. **The service sector is also the one that most employs people** (46% of the employed), notably in the education and healthcare areas, in public administration and financial activities, followed by Commerce (21%), Agriculture (17%), Industry (9%) and Construction (7%). However, compared with the rest of the country, the states in the region are distinguished by having people in the lowest income groups highly dependent on informal occupations and government assistance, while the higher income⁸ households receive a much higher proportion of civil service and armed forces income, underscoring the fact that the **local economy depends to a large extent on the public sector.**

6. State Competitiveness Ranking elaborated by the Centro de Liderança Pública. Available at: https://d335luupugsy2.cloudfront.net/cms/files/7589/1600170338RelatRio_Tcnico_2020.pdf.

7. Plataforma Amazônia Legal em Dados, based on data from the Instituto Brasileiro de Geografia e Estatística (IBGE).

8. Alfenas, F., Cavalcanti, F. and Gonzaga, G. (2020). Mercado de trabalho na Amazônia Legal: uma análise comparativa com o resto do Brasil. Amazônia 2030.



⁹ *Idem.*

¹⁰ Dasgupta, P. (2021). *The Economics of Biodiversity: The Dasgupta Review*. London: HM Treasury.

Additionally, it is important to note the **discouragement among young people**. Although it is normal to have lower employment and labor market participation rates among the young (between 14 and 29 years), the difficulties of inserting this segment in the labor market in the Amazon are much greater than in the rest of the country. This vulnerable situation puts the region's **demographic bonus** at risk. This refers to the proportion of people at working age compared with the dependent population, considered a factor that is favorable for economic growth, reducing poverty and increasing well-being.⁹

The situation described raises the need for the formulation of policies and programs aimed at youth. In this respect, there is an opportunity to strengthen the relationship between the **digital economy, the creative and the solidarity economy and the forest**, expanding internet access so that young people may be a link between the cities – and the world – and the forest culture.

Certainly, these are some of the aspects that could influence the pursuit of a development model based on the conservation and regeneration of natural ecosystems. But this process still requires deeper understanding of the **dynamics of interaction between the national economy and the Amazonian economy**, taking into account a variety of determinants, such as the productivity of the different sectors (agriculture, industry, services), competitiveness in international markets, trends in consumption patterns, as well as factors such as environmental and land title legislation.

In view of what has been described, many efforts have been made to propose a renewed economic matrix for the Amazon. This proposition cannot be made without considering the movements and reflections that have permeated public policies worldwide, including the need for an urgent revision of economic performance metrics so that they incorporate natural capital¹⁰ and the compatibility of recovery measures with the responses to the multiple crises we face, which have also influenced instruments such as the Plano de Recuperação Verde (Green Recovery Plan) of the Consórcio Interestadual da Amazônia Legal. Reflections of this nature should permit the construction of an integrated future vision for the region that goes beyond the economic activities currently restricted to simple chains based on extractivism or agribusiness, with the incorporation of information and intelligence into local production. In this context, growing attention has been paid to the ways of developing the bioeconomy in the Amazon.

Bioeconomy has become an umbrella term for economic activities that have been in place in the Amazon for centuries, as well as promises whose economic viability is still proving difficult. More than a production sector, which is defined by the origin of the inputs or by the markets which its products supply, the

bioeconomy is characterized by a change in the form in which the raw materials are produced and commercialized, which involves adding greater value to the products of extractivism and greater equity in the distribution of this value among the links of the **production chains**. In this respect, the bioeconomy involves a set of ethical-normative values regarding the way society relates to nature and its consequences¹¹. This new perspective permits greater proximity with local ways of life and production and raises the need for care in observing that the economy of the traditional populations in the Amazon has a different rhythm, timing and logic from the market economy in the great part of the major centers and in the West as a whole. With the expectations that the bioeconomy should be driver of economic development in the Amazon, some crucial questions arise, such as: who will profit, the local populations or the big companies? What will the distribution of benefits be like taking into account the collectivist and associativist ways in which these populations work? Will rural communities be prepared for production on a larger scale? Furthermore: do these communities want to produce on a larger scale?

The traditional agriculture, livestock and forestry sectors continue to be central to economic development. However, today business models are strongly influenced by global questions, such as climate change and loss of biodiversity. New opportunities are opening up with the emergence of concepts such as the **regenerative economy, circular economy, nature-based solutions and payment for environmental services**. Concerns about water, food, nutritional and energy security, as well as human rights and racial, ethnic and gender equality require an integrated view of the safeguards that should exist for the diverse value chains.

¹¹ Abramovay, R. and Ferreira, J. (2021). *The new bioeconomy in the Amazon – Opportunities and challenges for a healthy standing forest and flowing rivers*. Science Panel for the Amazon.

¹² Secretaria de Estado de Desenvolvimento Econômico, Ciência, Tecnologia e Inovação do Amazonas (2021). *Technical notes: Science, Technology and Innovation in the Amazonian Bioeconomy*. Diretrizes para a Construção Conceitual da Bioeconomia no Amazonas / SEDECTI – AM, Manaus: Government of Amazonas.

Principles of the Amazon bioeconomy and the production knowledge networks¹²

Considering the complexity of the bioeconomy and its imperfect markets in the Amazon, instead of dealing with production chains, it might be more appropriate to think in terms of **networks of production knowledge**. In Amazonas, for example, such networks are fundamental for understanding the state of the art of the bioeconomy market structures and for building collaborative mechanisms that strengthen the **guiding principles of the Amazon bioeconomy**. These are: conservation of biodiversity; expansion of biodiverse and sustainable forested areas; science and technology oriented to the sustainable use of social biodiversity; and a decrease in social and territorial inequalities.

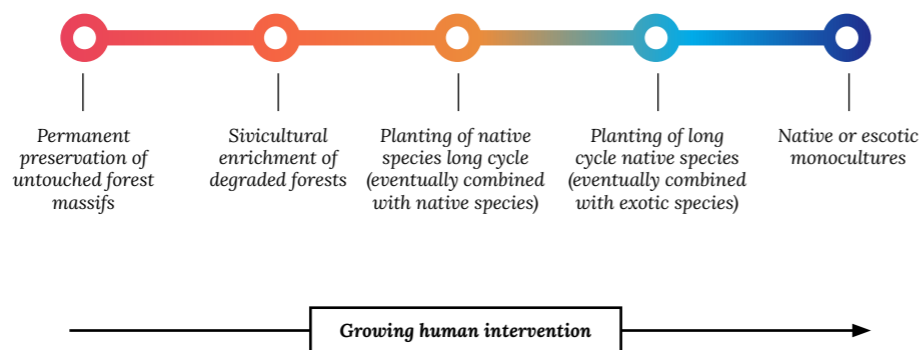
13 See the thematic portrait available at: <https://concertacaoamazonia.com.br/wp-content/uploads/2021/06/Retrato-setorial-sobre-Bioeconomia.pdf>

14 The article presenting this typology in greater detail is available at: <https://pagina22.com.br/2021/02/01/o-valor-da-diversidade-para-a-bioeconomia/>.

Since the first discussions held by **Concertation**, efforts have been made to understand the meaning of bioeconomy, particularly in the context of tropical countries. In dialogue with the framework of the Four Amazons and recognizing the diversity of interpretations, the working group dedicated to this topic in Concertation identified different “promotion fronts” of the bioeconomy in the Amazon, based on the concept of the (agro)forestry continuum illustrated below. This exercise resulted in a typology which sought to support a broader understanding of the topic, as a common denominator and also considering the relations between the different bioeconomies.¹⁴

In the conserved Amazon, worthy of note is (neo)extractivism, offering bases for the development of the bioeconomy associated with social biodiversity – the **socio-bioeconomy**. In the converted Amazon, the so-called consolidated areas are used for the intensive culture of some crops and for livestock – the **agro-bioeconomy**. Between them, as the gradient in the figure suggests, there is a series of possible combinations, which could include sustainable forest stewardship, restoration with the planting of exotic and native species, growing food and breeding animals, with different levels of integration and diversity.

Transversally, it is important to note the role of **science, technology and innovation**, which enables making the production arrangements more complex and integrated, ranging from extractivism, through processing, to the use of molecules and active principles in sophisticated industrial processes. This technological transversality enables the observation of **synergies among the three fronts**, for example, with the development of biorefineries, which are inspired by the experience of agribusiness, but converse with the diversity of forest inputs, which, in turn, could give rise to bio-inputs capable of substituting chemical fertilizers and pesticides, making agricultural practices in converted areas more sustainable.



Note: B2B - Business to Business; B2B2C - Business to Business to Consumer; Bio-ICT - Information and Communication Technology oriented to Bioeconomy and Biotechnology; CETAM - Centro de Educação Tecnológica do Amazonas; ST&I - Science, Technology and Innovation; RDEI - Research, Development and Innovation; SEBRAE - Serviço Brasileiro de Apoio às Micro e Pequenas Empresas; SENAI - Serviço Nacional de Aprendizagem Industrial; UEA - Amazonas State University; IFAM - Instituto Federal do Amazonas.

Framework for a bioeconomy in the Amazon (abbreviated version)

	Socio-bioeconomy (based on social biodiversity)	Forestry based bioeconomy (based on forest stewardship)	Agro-bioeconomy (based on the production of commodities)
Activities currently predominant	<ul style="list-style-type: none"> • Extractivism • Neo-extractivism • Agriculture for own use • Fishing 	<ul style="list-style-type: none"> • Native forest silviculture 	<ul style="list-style-type: none"> • Planted forests • Commercial agriculture
Degree of anthropization and physical production volume	<ul style="list-style-type: none"> • Low 	<ul style="list-style-type: none"> • Medium 	<ul style="list-style-type: none"> • High
Relationship with biodiversity	<ul style="list-style-type: none"> • High dependency and high contribution to its maintenance 	<ul style="list-style-type: none"> • Medium dependency • More or less biodiverse production systems 	<ul style="list-style-type: none"> • Low dependency on biodiversity; plantations based on monoculture contribute little and can even threaten biodiversity
Relation to climate change	<ul style="list-style-type: none"> • The mode of production is compatible with maintenance of the stock of CO₂ • High resilience to the effects of climate change 	<ul style="list-style-type: none"> • The mode of production is compatible with maintenance of the stock of CO₂ 	<ul style="list-style-type: none"> • The substitution of fossil based fuels and materials potentially reduces emissions; however, large-scale production exerts pressure for the conversion of forests (e.g. açaí may also be a driver of deforestation) as well as on other resources (water, for example) • Low resilience to the effects of climate change
Actions to encourage/ promote bioeconomy businesses	<ul style="list-style-type: none"> • Consolidation of protected areas and land title rights • Strengthening of associations and cooperatives (chain integrators) • Professional training (SENAI and SEBRAE; Rainforest Social Business School (UEA); Federal Institutes; federal and state universities and public and private research institutes, such as CETAM and IFAM) • Creation of a network of phytosanitary and water quality laboratories • Creation of Amazonian Merchandise Exchange (to circumvent asymmetry of information) • Control and standardization of products, with system to indicate geographical origin • Strengthening and expansion of human resources and laboratory infrastructure base for advanced research into synthetic biology, genomics and biomaterials. E.g.: Laboratórios Criativos da Amazônia and Parque Científico e Tecnológico do Alto Solimões • Development of businesses to supply inputs to industry (B2B) 	<ul style="list-style-type: none"> • Control/inspection to eliminate illegality • Consolidation of protected areas • Adjustment of forestry concession legislation to increase legal security and economic feasibility, and expand sustainable activities, as well as the sustainable stewardship of timber • Revision of forestry concession legislation • Expansion of forestry concession areas • Review of legal frameworks and rules that hinder agroforestry development • Greater coordination of policies between sectors • Communication and diffusion of knowledge • Have “benchmark” projects • Investments in ST&I, including certified seed banks and nurseries • Support for beekeeping 	<ul style="list-style-type: none"> • Adoption of environmentally and socially sustainable practices to reduce negative externalities • Adaptation of credit programs to include socioenvironmental criteria as conditioning factors • Re-establishment of Sugarcane Agro-ecological Zoning • Diversification of production aimed at food security • Development of technologies for the large-scale production of Amazon biodiversity commodities. • Technical Assistance and Rural Extension
	<ul style="list-style-type: none"> • Increase in R&D investments (basic and applied research) • Innovation in Economic Ecological Zoning, incorporating bioeconomy (“Bioeconomic and Socio-ecological Zoning”) • Infrastructure (stable power supply, logistics, connectivity) • Development of bioindustries • Development of technology based and Bio-ICT start-ups • Strengthening of governance structures for distributing resources • Environmental service payment policies • Coordination of public and private actions (systemic challenge) 		

15 Lima Filho, F. L., Bragança, A., Assunção, J. (2021). Um novo modelo de negócios é necessário para aumentar a produtividade da pecuária na Amazônia. *Amazônia 2030*. <https://amazonia2030.org.br/um-novo-modelo-de-negocios-e-necessario-para-aumentar-a-produtividade-da-pecuaria-na-amazonia/>.

16 Negative externalities of the agricultural and livestock industry include deforestation and soil degradation, environmental contamination and harm to human health from the use of crop defence products and fertilizers, greenhouse gas emissions, loss of biodiversity and threats to water resources, among others. The pursuit of environmental sustainability for the sector essentially involves reducing these externalities, which could include practices such as low carbon agriculture, transition to agro-ecological and organic systems, environmental regularization of rural properties, reclamation of forests and management of agro-industrial water footprint by means, for example, of more advanced irrigation technologies and the rational use of water, as well as environmental education measures for the public. As an

“The chance for us to be innovative is in the sustainable use of biodiversity. The Amazon forest is not yet part of the contemporary bioeconomy. The potential is huge. But what do the Brazilians want from the Amazon?”

(Ricardo Abramovay)

The typology makes the trade-offs and risks of the bioeconomy agenda more explicit, such as the possible net increase in emissions or the loss of biodiversity resulting from the substitution of fossil-based raw materials with the unrestricted cultivation of biomass. The scale of production is frequently cited as a point requiring attention because the expansion of production areas could threaten conserved areas. Such risks should be recognized and make the monitoring of direct and indirect impacts fundamental. In combination with the principles mentioned, this enables the distinction, for example, between **extensive low productivity livestock breeding**, used as an instrument for the illegal appropriation of public lands (land grabbing), and **sustainable livestock breeding** and activities that employ remote sensing technologies to enable the full traceability of the value chain, and employ socio-environmental safeguards and monitoring systems that **minimize negative externalities**.¹⁶

In the first case, the low productivity is not only a consequence of the non-incorporation of technology, little use of adequate stewardship inputs or practices, but the employment of livestock breeding as a driver of speculation related to the invasion of properties. Moreover, it is essential to contain the advance of land grabbing and illegal deforestation, which occur mainly due to legal insecurity, which stimulates speculation in detriment of productivity. Actions in this regard should include targeted policies, the destination of public lands and the implementation of the Forest Code, in parallel with the promotion of the intensification of livestock breeding by means of modernization in production.¹⁷

Food security in the Amazon

The preponderance of the agriculture and livestock sector in the region, and its leading role in the deforestation of conserved areas, bears a complex relationship with the weight of the activity in the Brazilian trade balance and its intersections with one of the central topics of the human rights agenda: food security for the population of the Amazon. In spite of the prominent position of states in the Legal Amazon, such as Mato Grosso and Pará, in livestock and grain production, respectively, the Northern region continues to present the worst food security rates in Brazil, with 57% of households facing some level of food insecurity.¹⁸ Brazil's large agro-industrial production, in turn, is represented primarily by corn and soybean crops, the main destination of which is the production of animal feed or exportation.¹⁹ On the other hand, the demand for feed for herds, as well as the impacts arising from changes in soil use, make meat consumption a habit that overloads ecosystems due to the intense use of natural resources. The Brazilian population's access to animal protein, however, is extremely unequal, given that one of the core factors of food insecurity in the country is the lack of economic capacity to purchase food. Consequently, in spite of the immense biodiversity present in the Amazon, the local food culture is increasingly permeated by ultra-processed foods, characterized by low nutritional content. Even though agriculture and livestock production is responsible for the major part of jobs in the Legal Amazon – 1.7 million people, or 15.9% of the total –, the relative importance of the sector has been decreasing in this area, with a 16% reduction in the number of people employed between 2012

and 2019, very much in function of the mechanization of agriculture. Additionally, the numbers employed do not translate into quality employment, with the workers in the agricultural and livestock sector submitted to precarious income levels and low rates of formal employment.²⁰ Ensuring food security in the Amazon will only be possible together with mechanisms that promote income generation and social inclusion of the population, in contrast with the unimpeded advance of the agricultural frontier. Historically, public policies in agriculture in Brazil prioritize large properties owned by small groups. There is a lack of support for the consolidation of a rural culture that values family agricultural producers. Even so, family agriculture is responsible for a large part of the food consumed by Brazilians, principally considering the proportion of arable lands it occupies. Food security for the population in the Amazon also includes the standing and regenerated forest, given that it is from the forest that new opportunities for income, work and nutritional autonomy will emerge. One example is the agroforestry systems, which in the Amazon permit better stewardship of production practices and the possibility of diversified production, combining native trees and fruit trees in a continuous cropping system that is more respectful of the cycles of the forest, emits fewer greenhouse gases and ensures greater resilience for the producer. In contrast, the role of the agro-industrial sector in ensuring food security involves pursuing the intensification of agricultural productivity in order to contain the expansion of the planted area, as well as containing illegal deforestation while protecting ecosystems.

example of policies in this regard, we have the ABC low carbon emission in agriculture plan (Plano Agricultura de Baixa Emissão de Carbono), which promotes the mitigation of GHG emissions and adaptation to climate change in the agriculture and livestock sector.

17 Lima Filho, F. L., Bragança, A., Assunção, J. (2021).

18 IBGE - Pesquisa de Orçamentos Familiares 2017-2018: Análise da segurança alimentar no Brasil.

19 Companhia Nacional de Abastecimento (Conab); Associação Brasileira das Indústrias de Milho (Abimilho).

20 Alfenas, F., Cavalcanti, F. e Gonzaga, G. (2020).

21 IBGE - 2016-2017 Agriculture and Livestock Census. For example, family agriculture was responsible for 31% of beef, 45.5% of poultry, 51.4% of swine, 70.2% of goat, 23.1% of bean, 69.6% of manioc, 48.5% of banana, 78.7% of açaí production, in addition to the major part of market garden products and some fruit species.



Artist: Rui Machado

Regarding the consequences for businesses, it may be noted that in each dominion there are implications for the scale of production and needs and forms of financing because projects that involve the use of biodiversity present different risk/return ratios for investors. Whereas from the public policy standpoint, an integrated approach should adopt a clear commitment to protecting biodiversity and the climate. Brazil already has policies that support the bioeconomy from different perspectives (science and technology, family agriculture, regional development, energy, among others), however without broader overall coordination.²²

Reflection on business models that add value for the standing forest is extended to urban areas, because it involves understanding not only the genetic resources of the forest or the forestry products themselves, but also valuing waste – agroforestry and urban – in accordance with the **logic of circularity**, given that the notion of a circular bioeconomy has become stronger globally in the expectation of dialogue with growing restrictions on the availability of natural resources. Moreover, supported by actions to strengthen education and value culture, cities could consolidate their position as drivers of local economic development.

Opportunities could be extended to commercial services, logistics, monitoring and certification systems as well as the actual environmental services. These elements favor the emergence of new businesses, including technology-based start-ups, supported by incubators and accelerators. For these new businesses to be economically viable, both negative and positive externalities need to be explicitly recognized.

In addition to the ethical-normative dimension mentioned previously, the major differential for the bioeconomy compared with how primary activities have developed in the region is the capacity to add value to agroforestry products, which could be leveraged by incentives for the **creative economy** by valuing activities such as tourism, gastronomy and audiovisual production, and for **industrial processing using advanced technology**²³, strengthening the relationship between the urban Amazon and the other regions.

However, the debate about the role of industry in the development of the Amazon was not always focused on valuing forest resources. The current model of the Manaus Free Trade Zone (ZFM) was structured to attract companies via tax incentives in 1967. Although three hubs were planned – industrial, commercial and agricultural – the activities in the zone ended up being concentrated on the Manaus Industrial hub (Polo Industrial de Manaus - PIM), where 450 companies employ some 500,000 people directly and indirectly, focused on a limited number of products, such as televisions, cellular telephones and motorcycles.

²² In this regard, recently the Coalizão Brasil Clima, Florestas e Agricultura published a position statement defending the formulation of a national bioeconomy policy. See it at: <http://coalizaobr.com.br/home/index.php/posicionamentos/item/1252-forca-tarefa-de-bioeconomia-da-coalizao-define-posicao-e-propostas-de-acoes-sobre-o-tema>.

²³ Ver retrato temático Bioeconomia no contexto da ZFM: <https://concertacaoamazonia.com.br/wp-content/uploads/2021/06/Retrato-setorial-sobre-PPBio-e-ZFM.pdf>.

24 An overview of the controversies and proposals for the renewal of the Manaus Free Trade Zone is presented in the sector portrait available at: [https://concertacaoamazonia.com.br/conhecimento/\(Eixo 5 - Atuação Empresarial\)](https://concertacaoamazonia.com.br/conhecimento/(Eixo%205%20-%20Atua%C3%A7%C3%A3o%20Empresarial)).

25 Schutze, A., Holz, R. and Assunção, J. (2021). *Aprimorando a Zona Franca de Manaus: Lições da Experiência Internacional. Amazônia 2030 Project*. Available at: <https://amazonia2030.org.br/aprimorando-zona-franca-manaus/>.

The lack of diversification in production in the free trade zone has been one of the main focuses of discussion about the modernization of the model, which has little or nothing to do with the potential of the region. Moreover, there is discussion of Manaus' role as a concentrator of people and capital, resulting in the emptying out of the interior of the state and the increase in inequalities. Because of the requirements related to domestic production and logistics costs, many of the production lines installed in the zone are only sustained by tax incentives. This does not translate into gains in productivity or competitiveness for the country, with the zone growing further and further apart from global trends in technology.

There are many criticisms of the model which are mainly related to the perception of very high forgone tax revenues – in 2018, the tax expense was R\$ 26.36 billion, equivalent to 26.95% of federal spending on industry – as well as the number and the remuneration of the jobs generated, even though they are formal. On the other hand, it is argued that the Manaus free trade zone generates considerable revenue for the state of Amazonas and the Federal Government, in addition to the counterpart in the production of computing equipment, which totaled almost R\$ 700 million in 2016.

Overall, the 1967 model remains unaltered, with no updating and enhancement of its goals or the management of the incentives granted. But the period of concession of benefits has been prolonged three times and is currently valid until 2073. Some discussions are underway sharing a focus on regional development based on the sustainable use of local biodiversity and economic diversification, but there are differences in relation to the mechanisms proposed, the intensity and speed of changes and the investment of funds. While some emphasize the need for better governance of the matching contributions, others propose investments in infrastructure to leverage bioeconomy companies, digital transformation, ecotourism and fish farming. In this respect, the proposals are concentrated on complementing the current activities, that is, they support the continuity of the existing profile, however, allied with new local production chains.²⁴

True renewal would firstly involve the clear definition of an identity for the free trade zone, which would permit the alignment of its goals and incentive policies. Currently, the model is somewhere between a hybrid of a free trade zone and a business zone, which is neither focused on the international market nor explicitly on regional development and ends up failing on both fronts.²⁵

Another relevant activity which should continue to be important is **mining**, whose role in the development of the Amazon led to the production of iron ore, bauxite and manganese, among others. During recent decades there was an expectation that mining and metallurgy activities would constitute a building block in regional development, which has not always proved to be the case.

Even so, the amount associated with Financial Compensation for the Exploration of Mineral Resources (CFEM) in 2020 totaled R\$ 3.2 billion in the region. The careful development of mining activities outside protected areas and indigenous lands, observing good practices, should continue to be important for the region's economy, to the extent that the demand for diverse minerals for sustainable energy infrastructure and data processing and communication equipment will grow in digital economies in line with decarbonization targets.

This development will require research into new mineral assets, as well as the enhancement of the current mining legal framework. This practice in forested areas is a delicate question, which also involves cultural uses of mineral resources. Currently, the mining front is advancing on protected areas in the Amazon, not only causing damage to the environment but also to the existential rights of indigenous peoples. In 2020, Brazil exported more than 110 tons of gold, corresponding to US\$ 4.9 billion. However, 17% of this volume was illegal in origin²⁶, using false declarations of origin of the mineral, the mining permits or PLGs (Permissões de Lavra Garimpeira). To combat this type of crime, the implementation of more transparent and rigorous control systems is indicated (with the revision of the rules for the renovation of mining prospecting permits, for example), as well making those benefiting from the purchase of the material civilly and criminally responsible for its origin²⁷. In addition to the direct responsibilities of the agency responsible, the National Mining Agency (Agência Nacional de Mineração), which controls the issue of permits, it should be noted that the laws and regulations of the Brazilian Central Bank (resolutions, instructions etc.) give this authority broad discretion in the control of transactions involving the gold mined, in particular with the securities traders and distributors²⁸. The repression of illegal mining and the conception of adequate compensation arrangements for legal operations, including fair taxation, are essential. Furthermore, the indigenous peoples and the communities affected need to participate in decision making processes.

26 Instituto Escolhas (2021). *Brasil exporta ouro ilegal*. <https://www.escolhas.org/wp-content/uploads/Brasil-Exporta-Ouro-Ilegal.pdf>.

27 Manzolli, B. et al. (2021). *Legalidade da produção de ouro no Brasil*. Belo Horizonte: IGC, UFMG. Available at: http://www.lagesa.org/wp-content/uploads/documents/Manzolini_Rajao_21_Illegalidade%20cadeia%20do%20Ouro.pdf.

28 Recommendations of the Federal Public Prosecution Office available at: <http://www.mpf.mp.br/pa/sala-de-im-prensa/documentos/2021/1001432-50-2021-4-01-3908-3-94-assinada.pdf>.

29 The analysis of the fiscal situation of the states in the Amazon is available at: [https://concertacaoamazonia.com.br/conhecimento/\(Eixo 3 - Recursos Financeiros\)](https://concertacaoamazonia.com.br/conhecimento/(Eixo%203%20-%20Recursos%20Financeiros)).

30 Conexsus (2021). *Finanças que impactam - Estudo sobre oportunidades de financiamento para a cadeia da castanha-do-brasil*. Available at: <https://www.conexsus.org/website/wp-content/uploads/2021/04/cx-estudo-sobre-oportunidades-de-financiamento-para-a-cadeia-da-castanha-do-brasil.pdf>.

31 Barreto, P. (2021). *Políticas para desenvolver a pecuária na Amazônia sem desmatamento. Amazônia 2030 Project*. Available at: https://amazonia2030.org.br/wp-content/uploads/2021/09/pecuaria-extratativa_final_Paulo-Barreto-1.pdf.

32 Pereira, R.; Barreto, P. and Baima, S. (2019). *Municípios amazônicos poderiam arrecadar mais impostos de proprietários rurais*. Belém: Imazon.

2. Fiscal instruments and financial mechanisms

Analysis of the revenue and expenditures of the states in the Legal Amazon reveals that the local governments have little margin to undertake investments in logistics and social infrastructure, in environmental management and in science and technology. In terms of revenues, between 2014 and 2019, there were significant decreases in credit operations (58.7%) and capital transfers (75.6%), due to federal government austerity measures to contain the fiscal crisis. On the expenditure side, 93.6% of public funds are committed to only five aggregates²⁹. The debilitated fiscal situation of the states makes us reflect on how to finance the transition and throws light on the role of private funding, as well as trends in the finance sector, in private investments and in philanthropy.

In many cases, the economic feasibility of sustainable projects is only materialized by means of tax incentives, subsidies or the monetization of the environmental services that they ensure. In this regard, fiscal policy plays a fundamental role in orientating the desired transition, by means of matching conditions related to the conservation of ecosystems. Currently, for example, less than 3% of the funds of the family agriculture reinforcement program (Pronaf - Programa de Fortalecimento da Agricultura Familiar), which offers R\$ 2 billion in subsidized rural credit in the Amazon, is used to finance sustainable production activities in the region³⁰. Moreover, a critical measure is containing extensive livestock production which deforests and degrades in a repetitive cycle. Beyond traceability, there are other proposals, such as linking the concession of rural credit to increased productivity³¹. Similarly, land speculation could also be discouraged using taxes, such as the ITR rural property tax (Imposto sobre a Propriedade Rural)³². Therefore, it is fundamental to discuss **changes in the distribution of subsidies** that currently finance low productivity activities and that put pressure on deforestation so that they are aligned with sustainability criteria and add value.

The environmental services rendered by the forest benefit people and production sectors in distinct regions of the continent and the world. The discussion on **Payment for Environmental Services** (PES) should therefore take place in a broad manner, aimed at generating income for the Amazon as a whole. For this reason, greater understanding of hydrological cycles and carbon absorption capacity, among others, is necessary so that the eventual remuneration of activities that support them is worthwhile.

In the regulatory area, the national payment for environmental services policy (Política Nacional de Pagamentos por Serviços Ambientais - PNPES), instituted by law n° 14.119, on January 13, 2021, is an advance in this direction. It does, however, have one major frailty in not guaranteeing funding for its implementation. Once the source of income is assured, it is still necessary to define the governance and destination of the resources, be it via investments, incentives or **compensations**. However, it is important to recognize the possible limitation of mechanisms such as PES and the promises of the bioeconomy, in particular in the short term, in order to establish a frank debate about **instruments for the distribution of income** and **reduction of poverty** in the Four Amazons, considering learnings from policies already implemented in the past such as the Bolsa Floresta (Forest Grant). The reduction of inequality could work as a driver of innovation and gains in productivity with work and capital aligned.

In the private sector, similar movements occur so that the environmental services are explicitly recognized in financial assessments. The *framework* of the *Taskforce on Nature-related Financial Disclosures* (TNFD) is an example of how public and private actors can work on incorporating biodiversity into the risk analyses of financial institutions, as the *Task force on Climate-related Financial Disclosures* (TCFD) does in the introduction of risk analyses and mitigation measures linked with climate change.

In fact, the global financial sector is undergoing a transformation with the ascension of Environmental, Social and Governance (ESG) practices and innovations involving from the creation of currencies to new forms of managing and sharing information. The incorporation of natural capital into national accounts and metrics of economic success is the next step. A profusion of innovative instruments may be seen emerging under labels such as climate financing and green securities. So, it is necessary to assess how the transformations targeted in the modes of production and consumption — directly or indirectly linked with the conservation of ecosystems — dialogue with these trends.

In Brazil, the three major private banks have been discussing specific strategies for the region for over a year. In this context, civil society has an equally important role to play in enhancing these instruments, which also involves mitigating the risk of greenwashing, which is increasingly denounced as companies and financial institutions publish their ESG commitments.

In the Amazon, innovation in financing is becoming even more necessary with the purpose of recognizing the different “times” of the investments, which are due

33 In this respect the Forum of Innovation in Investments in the Amazon Bioeconomy (F2iBAM - Fórum de Inovação em Investimentos na Bioeconomia Amazônica), held by Concertation in partnership with the Consórcio Interestadual da Amazônia Legal in June 2021 is worthy of note. The event constituted an important space for articulation between bioeconomy initiatives in the region and its content may be accessed at: <https://pagina22.com.br/forum-de-inovacao-em-investimentos-na-bioeconomia-amazonica/>.

both to natural cycles and to factors such as deficiencies in logistics and training and criminality, which increase the financial risk, in addition to compromising the socio-environmental return. Accordingly, it is fundamental to mobilize diverse types of capital to catalyze investments and adapt the risk-return ratios for the diverse types of actors, from private individuals to institutional investors.

In this regard, the number of experiments involving **blended finance structures** has multiplied. In these, non-returnable funds assume the risk of the initial phase of the impact businesses or provide funds for financial, administrative or training support. Major opportunities exist to strengthen international cooperation programs with help from the local impact investment ecosystem that has been developing over recent years. For this to happen, it is necessary for philanthropy, as well as development bank funds to assume new roles in the mitigation of risk, provision of seed capital, incubation and acceleration of impact businesses to leverage private investments³³.

The changes observed in the financial institutions and the innovations involving private investors who are increasing sensitive to the socio-environmental agenda, does not rule out the need for a state policy that orientates the diverse public and private actors, mobilizes financial and non-financial resources and permits spaces to be built and occupied by civil society for the construction of innovative solutions and the achievement of the goals of this policy.

3. Territorial organization and land title regularization

A major part of the debate on land title regularization in the Amazon has occurred in the form of proposals of laws on this question, from 2016 until the present. The premise of the discussion is that land title regularization does not advance due to the absence of good laws. The working group on Territorial Organization and Land Title Regularization (Ordenamento Territorial e Regularização Fundiária), part of the Amazon Concertation initiative, has a distinct understanding: the question does not advance due to structure development actions that limit the execution of the laws. Therefore, overcoming the many bottlenecks involves the construction of long-term State policies, the construction of a robust land administration system, the integration of the constituent organizations, the engagement of society and the active coordination of implementation at state level.

Brazilian land title chaos has its historical origin in the combination of inequality in the distribution of land and the disordered territorial occupation, in addition to incapacity to implement a public policy for land. The lack of a land administration system resulted in the superimposition or overlap in land ownership titles for single areas and facilitated the illegal appropriation of public lands (land grabbing). Frequently occupation was encouraged, without the due accompaniment of the conditions necessary for the consolidation of the rights to the property or verification of conformance with the social function of the land. The insecurity remained in spite of diverse initiatives aimed at promoting territorial organization and recognition of rights, including by means of agricultural reform and legal mechanisms to discriminate public lands.

There are a number of bottlenecks that impede the rapid and effective advance of the territorial organization and land title regularization agenda in Brazil. These reflect questions of infrastructure, data quality, support for public authorities, the standardization of consultation and decision-making procedures, the informality of the land market and the lack of monitoring and punishment of infractions associated with the illegal occupation and deforestation of public lands. Recognizing the obstacles to territorial organization and land title regularization is necessary to propose actions to overcome them.

Territorial Organization and Land Title Regularization, in addition to constituting a complex question due to its historical origin and the existence of diverse impediments, is also permeated by ambiguities. **For this reason, it is essential that Amazon and Brazilian society discuss and make their choices with a view to guiding implementation measures, such as:**

- **Uses of territory** to simultaneously fulfil the objectives of conserving the environment, providing ecosystem services, providing means of livelihood for traditional populations, preserving ethnic knowledge and promoting sustainable development, eliminating poverty, fixing the population, increasing levels of education, healthcare and per capita income.
- **Priorities in the implementation of regularization**, in order to define, for example, whether the focus should be on occupations prior to 2008 or on all the occupations to date with up to 4 or 6 fiscal modules or for those up to 1,500 hectares, in new titles or in the clean up of old titles not registered in the land administration system, which compromise the legal security of the new titles.

³⁴ See detailed proposals in the text for discussion from the Territorial Organization and Land Title Regularization Working Group (“Ordenamento territorial e regularização fundiária na Amazônia: do caos à superação”) (in the article).

- **Emphasis on the ordering and regularization of individual and collective rights**, given that, at the moment, the focus has been on the first group, due to the fact that the process is more agile than the second, which does however reinforce the process of making communities more vulnerable.
- **Degree of control by the state and by society**, given that simplified regularization means less control by the state and the increased risk of violence in the countryside; the decentralized regularization implies less control by the federal and state governments on the one hand, and more control on a municipal level; the monitoring of decisive clauses that condition the issue of the definitive land ownership deeds leads to greater control and additional costs for the state; social participation means more control by society and requires the prior construction of capabilities and trust.

What can be done to overcome land title chaos? Five courses of intervention are capable of jointly achieving a level of territorial organization that could simultaneously fulfil three objectives: promote the economic development of the Amazon, protect the rights of vulnerable groups and conserve the environment. These are:

1. Make Territorial Organization and Land Title Regularization a state policy;
2. Implement a robust land administration system;
3. Integrate the public institutions that constitute the land administration system;
4. Guarantee social participation in territorial organization;
5. Reaffirm the role of the state governments as coordinators of the actions in the territories.

The private sector and civil society are expected to contribute to the advances in the public sphere, manifesting support, qualifying the debate, providing technical and financial resources, monitoring supply chains to identify infractions of the law and playing an active role in the instances of social participation.

Territorial organization and land title regularization are possible and necessary for the development of the Amazon³⁴.

4. Science, technology and innovation

The consolidation of a system of science, technology and innovation (ST&I) in the Amazon involves not only understanding its **historical deficiencies**, reflected in current gaps and having significant impact on regional development, but also understanding factors that, over time, have shaped perceptions and propositions that currently characterize the territory and its physical, social and economic expressions. In this context, recent questioning related to ST&I in the Amazon addresses development as a catalyst for social and ecological rather than only economic demands, while in parallel reconciling the fulfilment of local needs and national interests related to conserving the forest and its biological flow, bringing the major demands of contemporary society to the laboratory benches.

“What is our plan for the Amazon? It’s not fair to see a country of this size with no planning. The political elite in the Amazon is retrograde. If I were governor, my main undertaking would be connectivity [fiber optic]. We need to turn the page in the Amazon.”

(Jorge Viana)

As such, a new development model for the Amazon requires new forms of production and application of information, processes which in Latin America have historically occurred with low incorporation of technical and scientific knowledge. Such a movement should be accompanied by new forms of political and social organization, which require innovative arrangements in planning and implementing an integrated ST&I system.

35 A more detailed portrait of SET in the Amazon is available at: <https://concertacaoamazonia.com.br/wp-content/uploads/2021/06/Retrato-setorial-sobre-Cie%CC%82ncia-e-Tecnologia.pdf>.

36 Centro de Gestão e Estudos Estratégicos (2013). *Plano de Ciência, Tecnologia e Inovação para o Desenvolvimento da Amazônia Legal*. Brasília: CGEE.

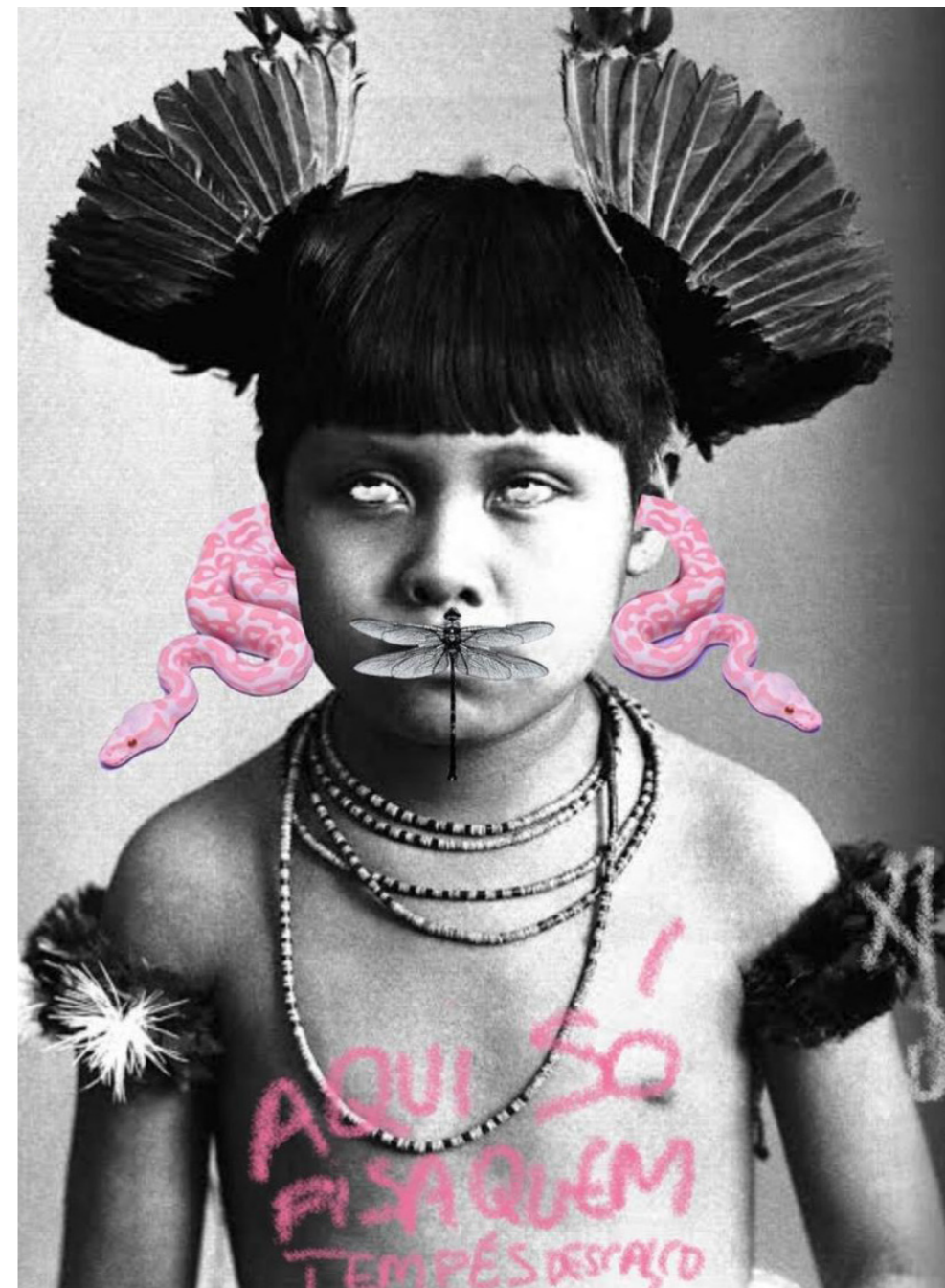
37 Plataforma Amazônia Legal em Dados, from the IBGE (2019). Available at: <https://amazonialegaledados.info/home/home.php>

38 Becker, B. K. e Stenner, C. (2008). *Um futuro para a Amazônia*. São Paulo: Oficina de Textos.

Currently the ST&I systems in the Amazon are developed regionally based on the articulation of research and development structures that include, for example, government support institutions – such as ministries, development agencies and science, technology and innovation departments –, higher education institutions, technical education institutes, technology parks, incubators and accelerators, non-governmental organizations and technology-based companies, among others³⁵. Although there have been key achievements, such as the presence of a significant number of respected science and technology institutions and higher education institutions, as well as extensive capillarity in the territory and a diversity of research fields, the bases for the wide-ranging, structured development of such systems in the Amazon are still very precarious. As result, the infrastructure to enable ST&I activities, such as **laboratories and equipment, is insufficient. Resources and local technical assistance to maintain the structures are lacking.** Moreover, the region faces historical deficiencies in its educational system, both at basic and higher level, with only 5.8% of master's programs in the country located in the Amazon, compared 50.6% based in the Southeast. This situation is directly related to one of the major ST&I challenges in the region, which is the **training, retention and expansion of the number of researchers.**

Another aspect commonly indicated as one of the major challenges for ST&I in the Amazon is the **lack of articulation between** the bases of scientific and technological knowledge, as well as between basic and applied science. The Amazon biome covers 60%³⁷ of Brazilian territory and is home to one of the largest biodiversities on the planet. The efforts to obtain information about the thousands of animals, vegetables and micro-organisms – whose genetic information carries the secrets of life on earth – as well as the different age-old cultures that have made and make up the region, should be proportional to the magnitude and relevance of the region. **In spite of everything that is known, which is not little, there is still much to find out.** The sum of all the scientific and traditional knowledge of the last 10,000 years does not correspond to even 1% of what is contained in Amazonian biodiversity³⁸. While it is necessary to continue with investment in basic research to understand the potential of this unknown ecological universe, it is indispensable to develop the bases for the use of the knowledge already acquired, in order to drive a new development model for the region and, furthermore, to act in alignment with the challenges of the present. Accordingly, it is fundamental to recognize the arsenal that ST&I represents in the increasingly need for society to look ahead and enable the actions identified as more urgent.

The precariousness of the ST&I regional systems in the Amazon is related to and aggravated by the living conditions of the population in the region, which in large part still does not have access to essential services such as **healthcare, sanitation,**



Artist: Rakel Caminha

electricity and connectivity. Despite successful experiences in applications in the field of science and technology to generate income and social inclusion in the Amazon, such elements are configured as **structural barriers** that at times make investment in the region more burdensome. Additionally, there are issues such as the difficulty of placing products in the market, due to low quality, quantity, uniformity and access to the resources necessary for production at significant scale, as well as the possibility of achieving regional autonomy. This is exacerbated by the lack of targeted scientific-technological knowledge, a lack of political incentives and the absence of enough entrepreneurs willing and able to take the acquired knowledge to a next level of use that would enable benefits both at a regional and national level.

Such historical deficiencies in ST&I in the Amazon are also related to the absence of a plan for the region, which throughout its history has been suspended between the dual discourses of preservation and developmentalism. The sectors that have prospered most in the Amazon, although contributing to the country's economy, have done little in terms of integrating local populations, boosting quality of life and employing the potential of the standing forest. On the contrary, they have frequently promoted its destruction.

A new development model fundamentally requires a change in paradigm which essentially implies new objectives, methods and, consequently, results. Accordingly, valuing ST&I in the Amazon reflects the actual construction of a Brazil that, as a nation, targets the development not only of the global economy, but of an autonomous population and its particular stock of knowledge. In this new paradigm, science and technology should work on a **cross-disciplinary** basis, pursuing innovative models in all dimensions, from contracting researchers to defining research priorities and establishing production chains. In this respect, it is necessary to promote production arrangements that, in addition to innovative, are creative and complex and may favor the advance of productivity in the Amazon and its correlated aspects. Therefore, the reduction of inequality could work as a driver of innovation, with work and income aligned. **The more complex and wide-reaching the forest-based chains are, the more engaged society as a whole will be in protecting the forest.** For this to happen, it is necessary to propose coordination mechanisms to optimize infrastructure, create traceability and monitoring, ensure an economy at scale and reduce information asymmetries that elevate risks in the forest chains. Such models require packages of technology linked with financial mechanisms.

In this respect, **engaging the traditional communities**, whose knowledge incorporates the history of the presence of these peoples in the Amazon by means of complex cultural systems involving knowledge and the domestication of the regional biodiversity, is fundamental for the use of this biodiversity.

Among the **priority topics** to be developed in ST&I in the Amazon, worthy of note are: **basic science, applied science, bioeconomy of product chains and sub-products linked with the forest, agro-food systems, integrated healthcare (One Health), medicine and drugs, and bio-inputs.**

Based on the definition of priority topics, it is possible to think about collective institutional arrangements transversal to the structures involved in the construction of knowledge. Such arrangements should articulate governmental and non-governmental institutions, communities and companies around innovative projects that add value throughout all their stages, with **social inclusion and income generation**, inspired by the concept of the **quintuple helix**³⁹. **Social technologies**, that are characterized by the commitment to social transformation, dialogue between different types of knowledge and participative processes, among other aspects, may play an important role.⁴⁰

To obtain an environment favorable for the development ST&I in the Amazon, commitment is needed for the participative creation of a new economy and society based on valuing traditional knowledge, assuming high levels of risk, indefinite profits and possibly many operational difficulties; knowing, however, that this is what the encounter between man and the enormous potential of one of the greatest biodiversities in the world is like.

Without consistent planning and ongoing investment in science and technology, the realization of the potential of the Amazon will be difficult, which is why **understanding of timing in ST&I is essential.** Projects for the Amazon need to be based on thinking 15, 30 years into the future, in addition to considering investment needs three to four times higher than current levels. Given the dimension of the Amazon ecosystem, there is still no wide-ranging mapping of all the ST&I initiatives developed in the region, which is one of the most pressing requirements. Therefore, a survey of the capabilities, aptitudes and stages of development existing in the territory is indispensable to form partnerships that establish the connections necessary between the stages of development of the ST&I systems. An example in this respect is the Rede Rhisa network⁴¹,

³⁹ *Diverse spheres of government, private sector, academia, civil society, grass roots communities and investors (SEDECTI – AM, 2021).*

⁴⁰ Gutierrez, D.M. D.; Oliveira, F. R. M. (2018). *Tecnologias para inclusão social: experiências contemporâneas do INPA em extensão com foco nas tecnologias sociais.* Manaus: Editora INPA.

⁴¹ An initiative by Sedecti, the State Department of Economic, Scientific, Technological and Innovation Development (Secretaria de Estado de Desenvolvimento Econômico, Ciência, Tecnologia e Inovação) in partnership with the Federal University of Amazonas (Ufam) and the Instituto Acariquara, with support from the Instituto Clima e Sociedade (ICS).

which initiated the mapping of technological and innovation capabilities for the sustainable development of the Amazon, putting together a data bank with thousands of résumés of professionals active in the region, as well as registering and validating 1,300 associations and cooperatives.

It is also important to note **the role of the Manaus Industrial Hub (PIM) in the Amazonian ST&I ecosystem**. With the Manaus Industrial Hub (PIM) focused mainly on products incorporating a low level of leading edge technologies, it is not very probable that the current Manaus Free Trade Zone model will be able to raise the country to a position of prominence within the field of ST&I. The infrastructure of the Hub and its differentiated tax policy, as well as the network of companies established there, however, are fundamental in the transition to a new Amazonian economy, with the Bioeconomy Priority Program (Programa Prioritário em Bioeconomia) constituting a reference indicating the potential of the Manaus Industrial Hub matching requirements to leverage this transition.

Lastly, given the Amazon's geography, as well as the logistics and infrastructure gaps that make command and control mechanisms more complex, it is essential to integrate the advance of capabilities in the field of ST&I with the interests of territorial defense, for example, expanding and updating the efforts organized by the Amazon Surveillance System Sivam (Sistema de Vigilância da Amazônia).

Connectivity and development in the Amazon

Currently, another central aspect of the ST&I agenda – which is also related to the infrastructure agenda – in the Amazon is in regard to connectivity, that is, access to Information and Communication Technologies (ICT), such as internet and telephony, by different actors in the Amazon territory, including schools, research institutes, healthcare units and civil society as a whole. Logistics challenges associated with environmental, economic and social factors contribute to the low performance in terms of digital inclusion in the Northern region, which presents one of the lowest percentages of households using the internet, totaling 72.1%, and the lowest in rural areas, where connectivity is available in only 33.1% of households⁴².

In the Northern region, the three main reasons for nonuse of the internet include lack of interest in access, lack of availability of the service and the high price associated with its use. There are many deficiencies in the telecommunications networks in the Amazon, ranging from the low offer and limited reach of the services to limited data transmission capacity, barriers that are exacerbated by the size of the Amazon territory and the natural challenges to the installation of infrastructure in complex geographies.

Nevertheless, the universalization of broadband is an important step for the economic and social development of the region, where quality access to the internet and availability will be a catalyst for the generation of employment and income, the decrease in inequalities and facilitation of the use of public services, as well as the effective insertion of the Amazon population in the information

society⁴³. In this respect, movements for digital inclusion should ensure that access to services is compatible with the economic capacity of the population and it should reach communities that are not served, whether they are urban, rural or remote.

Launched in 2020, the Connected North Program (Programa Norte Conectado) intends to expand telecommunications infrastructure in the Amazon by means of underwater fiber optic. This initiative, led by the Ministry of Science, Technology and Innovations, intends to complement the prior efforts of the Brazilian Army and the Ministry of Defense in the Connected Amazon Project (Projeto Amazônia Conectada), which managed to implement a stretch of 900 km of network. The objectives of the program include the interconnection of 10,000 km of fiber optic by means of the beds of the Amazon rivers to serve a population of 9.2 million people, to improve and expand the ST&I systems in the region and to achieve broader development goals, such as public education and healthcare⁴⁴.

It is also necessary to ensure the implementation of infrastructure by private initiative in equal measure throughout the territory in line with the needs of each region. Connectivity is central for ST&I because there will be no development without the transmission of knowledge and, in contemporary society, the internet is the broadest expression of these processes. Accordingly, in the Amazon internet access should dialogue with local cultural traits, logistics and infrastructure challenges, as well as the historical and current requirements of the population in pursuit of better quality of life.

⁴² National Ongoing Household Research by Sampling – Information and Communication Technology (Pesquisa Nacional por Amostra de Domicílios Contínua – Tecnologia da Informação e Comunicação PNAD Contínua TIC) from 2018.

⁴³ Conectividade digital em comunidades ribeirinhas remotas no interior do estado do Amazonas [electronic book] / [Fundação Amazônia Sustentável]. – Manaus, AM: Fundação Amazonas Sustentável, 2021.

⁴⁴ <https://norteconectado.rnp.br/>.

⁴⁵ IDB (2018). What is sustainable infrastructure? A framework to guide sustainability across a project cycle. Available at https://publications.iadb.org/publications/english/document/What_is_Sustainable_Infrastructure__A_Framework_to_Guide_Sustainability_Across_the_Project_Cycle.pdf

⁴⁶ HERZOG, C. P. Cidade para todos: (re)aprendendo a conviver com a natureza. 1 ed. Rio de Janeiro, Mauad X: Inverde, 2013.

5. Infrastructure

The overall vision of infrastructure has undergone important changes in the global context. Good projects are ones that address two challenges: inequality and climate change.

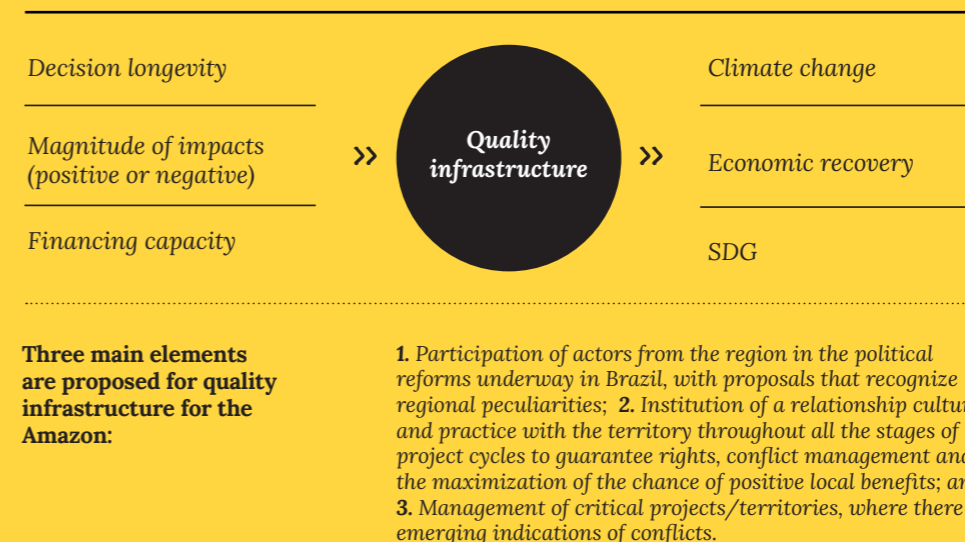
The Amazon region's most important infrastructure — in other words, the essence of its existence — is its forests and its rivers. Especially regarding the cities in the Amazon, natural infrastructure in association with grey infrastructure (linked with civil engineering works) is important for generating social benefits. For a vibrant socio-diversity economy to emerge, it is necessary to have quality internet, decentralized renewable energy, intelligent use of the rivers, mobility infrastructure and information systems.

Natural infrastructure, also known as sustainable infrastructure, may be defined as infrastructure that “preserves, restores and integrates the natural environment, including biodiversity and ecosystems. It supports the sustainable and efficient use of natural resources, including energy, water and materials. It also limits all types of pollution throughout the project life cycle and contributes towards a low carbon economy that is resilient and efficient in terms of resources. Sustainable infrastructure projects are (or should be) located and projected to ensure resilience against climate risks and natural disasters.”⁴⁵ The correlated concept of green infrastructure is characterized by being “an ecological urban network that restructures the landscape and mimics natural processes in order to maintain or restore functions of the urban ecosystem, offering ecosystemic services in the location. [...] This type of infrastructure is aimed at making urban environments more sustainable and resilient by means of the daily interaction of people with nature in spaces where both have total priority.”⁴⁶

An infrastructure agenda for the Amazon should have two fronts that need to be reconciled: one comprising projects of national interest that have traditionally caused negative impacts and few local benefits, and the demand for infrastructure services that meet the needs of the inhabitants and enable a forest-based economy.

On the international scene, infrastructure has the status of being a “solution” for the resumption of economic growth, for climate change and for the delivery of the Sustainable Development Goals (SDGs). There are cumulative consensuses on how to promote quality infrastructure, represented by six principles recommended by the G20 in 2019. Transparency, social participation in all phases of the project cycle and full accounting for costs, which includes social and environmental components,

Sustainable infrastructure as the solution for mankind's main current challenges



are some ingredients, as are careful feasibility assessments applied as early as possible in the decision-making process.

The success of an infrastructure agenda, however, will depend on a number of efforts, including control of deforestation, demonstrating an enabling condition, that is, a secure political and institutional environment and respect for global commitments; the announcement of a review agenda in the infrastructure decision making process, with the implementation of short-term actions; and the reversal of the perspectives of conflict in recent projects and the advance in the pipeline, especially in the relationship infrastructure-territory.

“Understanding infrastructure as mere support for economic growth is a vision in the rear-view mirror.”

(Ricardo Abramovay)

On a complementary societal activity front, there is a legacy of financial compensations derived from energy and mining projects worth more than R\$ 2 billion a year distributed to states and municipalities, which could potentially be scaled up for local benefit by means of projects that foster transparency and a focus on results.

Although listening is so necessary, what prevails is a lack of dialogue between those who take investment decisions in the region and those affected locally by these decisions. It is not a question of impeding the works – on the contrary, frequently they are necessary and desirable. Before executing them, it is necessary to insert them in a broader context: the conception of a long-term development model for the Amazon, considering regional peculiarities and wide-ranging debate between the actors involved. Only after this should works be planned in a way that avoids socio-environmental risks and takes advantage of so-called green infrastructure opportunities. The next step is to seek the licenses and execute the compensatory measures related to negative impacts that cannot be avoided. What happens in Brazil, however, is that the stages get mixed up. Things practically start at the end and, instead of debate, disagreement predominates. The planning stage of a major work would have to happen from eight to ten years before licensing.

Why isn't there forward planning? In addition to the lack of a broad vision of a territorial development model and the historical imposition of decisions in Brazil without listening to the vulnerable parties, there is an additional reason for the lack of forward planning: to evaluate a project in advance increases its costs.

“Infrastructure is in us and it is life. Lack of infrastructure or the way it is not structured can mean death. It is necessary to think how to act in the Amazon. The Amazon is not just anywhere. Solutions that work in other places do not apply to the Amazon and the people who live here know this.”

(Paula Sampaio)

6. Indigenous lands⁴⁷

In the Brazilian Amazon, Protected Natural Areas and Indigenous Lands cover 42.2% of the biome, sheltering 190 indigenous peoples – including 54 isolated groups – with a population of 752,421 people, the greatest diversity and the largest number in the entire Pan-Amazon region⁴⁸. In addition to the indigenous people, the Amazon is home to diverse traditional populations and communities who, like the original peoples, have developed in the territories based on particular and characteristic relationships with the land and its cultural and ecological expressions, examples being the quilombola, riverside, fishery and babassu nutcracker communities, among others. The relevance of these groups is associated with their growing importance in containing deforestation, conserving biodiversity and regulating the regional climate, as well as ensuring the quality of governance in the region based on their different ways of life and the local ethnological diversity expressed by the indigenous peoples.

However, due to the predominant political and economic regime, the rights of the indigenous and traditional populations of the Amazon to the land continue to be threatened by the advance of agro-extractivist industry and its relations with the appropriation of natural resources. This involves the invasion of lands and land grabbing, the expansion of agribusiness, the prospecting and exploitation of mineral resources, as well as the installation of major infrastructure works, which together are responsible for the increase in deforestation rates and the regression in environmental and territorial rights legislations.

For this group, there persists the vision of the Amazon as a vast, uninhabited land, whose (economic) value resides exclusively in exploitation within the logic of capital. On the other hand, for the indigenous people and traditional populations, the territory is a fundamental part of their cosmologies, founded on identities constructed historically based on ancestral knowledge and their complex interaction with other worlds from the beginning of colonization, a process which, in many ways, persists until today. Thus, the ontological relationship of these peoples with their lands and the biodiversity contained within them is alien to the Eurocentric man/nature dichotomy, resulting in specific ways of protecting and managing their territories. Even though the Brazilian constitution recognizes the right of the indigenous peoples to their lands, political and economic interests impede the consolidation of this right, resulting in a constant struggle by these peoples for self-determination and autonomy in their territories and their modes of existing within them.

⁴⁷ This section was developed mainly based on the work done by the Science Panel for the Amazon (SPA) – WG 12: Power of Amazon Peoples addressed in Chapter 31, entitled Strengthening governance and management of lands and natural resources: protected areas, indigenous lands and local communities' territories, in the current version available for public consultation.

⁴⁸ RAISG (2020). *Amazônia Sob Pressão*. www.amazoniasocioambiental.org

Throughout the formation of the Brazilian nation state, indigenous peoples and traditional communities have had little or no voice in the formulation and implementation of policies directed at them, with the State apparatus promoting ethnic and racial homogenization justified in accordance with ideals of territorial and cultural unity constructed by the country's political-economic elite. In spite of this, the systematic exclusion of these groups has driven social movements and collective mobilizations for the recognition of their identities and the guarantee of their territorial rights by the State, which even when recognized legally, are still vulnerable to interventions of a neoliberal nature. The guarantee of territorial rights is essential for improvement in the quality of life of these populations, as well as for the preservation of their modes of life directly related to conserving the territory's cultural and ecological value.

Actions in this regard include an integrated, participative and collective territorial management that reflects the interests of the indigenous and traditional peoples, grounded in efforts for intercultural dialogue and cross-disciplinary science, ensuring equality between knowledge based on different epistemologies. It is precisely within this sphere that the self-determination of the peoples takes shape, with indigenous and traditional communities accessing their right to collective existence and control over their lands, their resources, their social and cultural organizations, and their relations with the State. An example in this respect is the initiative of Yanomami and Ye'kwana indigenous leaders in the formulation of the PFTA (Plano de Gestão Territorial e Ambiental or Territorial and Environmental Management Plan) and the Protocolo de Consulta Yanomami (Yanomami Consultation Protocol), which together set forth the collective vision of these peoples about their identity and territory, as well as forms of consultation related to decisions that possibly impact their rights. Plans such as these, formulated and conducted by the communities themselves, have proven to be more effective in ensuring the integral health of populations and ecosystems, encompassing traditional practices and knowledge, as well as specific approaches to monitoring space and managing natural resources, in addition to prospecting new economic activities aligned with the demands and modes of existence of these peoples and the specific realities of their territories.

A new development model for the Amazon must take into account the terms upon which an economy for indigenous lands and traditional communities should be constituted, considering that no activity undertaken without deliberation and the exclusive exercise by these peoples will be beneficial for the territory. Accordingly, it is necessary to formulate creative alternatives that respect the territorial rights of the indigenous and traditional peoples, reinforce the country's regulatory

framework, recognize the cultural and ecological importance of indigenous and traditional territories, valuing their own means of acquisition and diffusion of knowledge, as well as ensuring investment in the formulation and application of autonomous territorial management plans as State public policy. Lastly, in spite of the centrality of self-determination processes, it is essential to consider the relations of these territories with their surroundings, promoting the integration of indigenous and traditional lands with the different municipal and state spheres.

International instruments on indigenous peoples' rights⁴⁹

- The International Labor Organization's Convention on Indigenous and Tribal Peoples in Independent Countries, 1989, n° 169
- International Covenant on Civil and Political Rights, 1992
- American Convention on Human Rights, ratified by Brazil in 1992
- United Nations Declaration on the Rights of Indigenous Peoples, 2007
- UN Guiding Principles on Business and Human Rights
- Global Compact Business Reference Guide
- Convention on Biological Diversity
- Inter-American Commission on Human Rights

Brazilian legislation on indigenous peoples

- Constituição Federal - 1988 (1988 Federal Constitution)
- Novo Código Civil - 2002 (2002 New Civil Code)
- Estatuto do Índio (Indian Statute)
- Política Nacional de Gestão Ambiental em Terras Indígenas (PNGATI - National Policy on Environmental Management in Indigenous Lands)
- Portaria Interministerial n° 060/2015 and Instrução Normativa da Funai (Inter-Ministry Ordinance no° 060/2015 and Funai Normative Instruction)
- Política Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais (PNPCT - National Policy on the Sustainable Development of Traditional Peoples and Communities)
- Política Nacional de Saúde Integral das Populações do Campo, da Floresta e das Águas (PNSIPCF - National Policy on Integrated Health of Rural, Forest and Waterway Populations)

⁴⁹ Main reference: The Nature Conservancy. *Proposta de Diretrizes Brasileiras de Boas Práticas Corporativas com Povos Indígenas, Iniciativa Diálogo Empresas e Povos Indígenas.* (Proposal for Brazilian Guidelines for Good Corporate Practices with Indigenous Peoples, Business and Indigenous Peoples Dialogue Initiative). <https://www.tnc.org.br/content/dam/tnc/nature/en/documents/brasil/boas-praticas-empresas-e-povos-indigenas.pdf>

STRUCTURE

BUILDING

STRUCTURE

BUILDING

STRUCTURE

BUILDING



STRUCTURE BUILDING

To implement a development agenda, it is fundamental to take care of people and give due importance to social development. Dealing with questions of inequality and poverty, for example, implies generating basic conditions for quality of life in the different dimensions of sanitation, housing, culture, education and healthcare for the population in the Amazon.

Plataforma Amazônia Legal em Dados



5,1 million km²

(ou 60%) do território nacional é o que ocupa a Amazônia Legal



23.5% of its area

comes under a conservation regime



772 municipalities

distributed throughout nine states



29.3 million inhabitants



12% of Brazil's economically active population



9% of the country's GDP⁵⁰

50. Plataforma Amazônia Legal em Dados, based on systematization of official data (DataSUS, IBGE, INEP and PNAD). Available at <<https://amazonialegaledados.info/>>. Accessed on Sept. 24 2021.



Artist: Rui Machado

51 Mapbiomas Brasil, 2021.

52 Science Panel for the Amazon, 2021.

53 IPBES, 2018.

54 Plataforma Amazônia Legal em Dados, based on systematization of official data (DataSUS, IBGE, INEP and PNAD).

55 Civicus Monitor, 2021.

56 Brazil is on the national and international drug trafficking routes, principally for drugs produced in Bolivia, Colombia and Peru - all Amazonian countries with which Brazil has frontiers. Going far beyond the question of border security from a perspective of territorial sovereignty, it is fundamental to understand that the presence of illicit activities makes the environment vulnerable for others, with serious social consequences. Thus, it is important that the security and criminal justice systems maintain focus on drug trafficking without jeopardizing the expansion of their actions in relation to environmental crimes.

“Everyone just talks about the destruction of the forest, but today’s urban nuclei are one of the biggest environmental problems in the Amazon, because they shelter many people without access to anything, with serious healthcare and sanitation problems. I don’t know how, but we need to do something about this.”

(Bertha Becker, 2004)

The construction of proposals that reinforce an agenda of rights and quality of life for the Amazonian population is vital, especially at this moment in which the region is in the midst of the so-called “perfect storm”. Some data illustrate this storm:

- Increase in deforestation (9% increase in 2020);⁵¹
- Getting close to the tipping point;⁵²
- Biodiversity and ecosystemic losses (183 species of animals and 86 species of plants extinct and 190 indigenous peoples threatened);⁵³
- Increase in poverty;
- Decline in the quality of indicators in healthcare, education, basic sanitation, infrastructure, access to energy and connectivity (for example, life expectancy in the region is 4.3 years less than the national average; sanitation is available to only 25% of the population; per capita GDP is 38% below the national average);⁵⁴
- Intensification of illicit and illegal activities;
- State of civil society and civil liberties obstructed (media harassment, criminalization of activists and threats against defenders of human rights).⁵⁵

A set of actions has been proposed to leverage the quality of life of inhabitants of the Amazon. Some examples:

- Strengthening of public policies and financing related to structural development actions in the fields of healthcare, education and security;
- Offers of subsidies for educational opportunities and conditions;

- Defense of community territorial rights and integrity of the forest;
- Combating any type of illegal or illicit action in the Amazon;⁵⁶
- Combating environmental crimes;
- Protection of defenders of the environment and human rights.

Even though it is possible to indicate a series of actions whose results are more immediate, many of the transformations necessary to achieve a development model that values natural capital and is socially inclusive begin with education and security as a basic condition. The next section is dedicated to this subject.

Education

The Amazon should be part of every Brazilian as something live, which it is up to everyone to care for and conserve. It is necessary to get to know this diversity, these so many Amazonian regions and times exalted in the quote from Marcela Bonfim, a cultural activist who lives in Porto Velho, Rondônia.

“Between the idea/place many Amazons exist because there are many! So many, that for those who live on the inside, diversity is not only possible; it is real; (...).”

(Marcela Bonfim)⁵⁷

But what do we really know about the Amazon? At best, just a few natural aspects of a distant humid jungle, homogeneous and diffuse, sparsely populated by indians and waiting to be explored. How can we recognize/know ourselves in the Amazon(s)? There is no single answer, but one of them without a doubt involves a dive into this diversity to diminish the equalities.

Education plays a fundamental role in this process. Even though objective measures to reinforce basic and vocational education are necessary, more subjective impacts also need to be observed. In school, we learned about what constitutes us as a people. Our values, characteristics, languages and ways of communicating. It is

57 BONFIM, Marcela. *Amazônias. Madeira Dentro, Madeira Fora*. RO, Porto Velho, 2021. Available at <<https://www.madeiradedentro.com/>>. Accessed on Sept. 24 2021.

where we share knowledge, interests, perspectives of the world. It is the place where our way of being is formed, our ways of interacting, and our dreams for the present and the future, as Brazilians. The same is true for spaces for technical training and for the universities.

Sustainability goes far beyond protecting the forest. It also consists of uniting private initiative and public authorities to promote systemic improvements in the country's education and quality of life.

In this context of possibilities and challenges, there are some lines that can guide discussions and efforts related to education in the Amazon. These are:

Support improvements in education in the Amazon.

The construction and implementation of measures that reach basic, technical and professional and university education, seeking to strengthen the connection between them. One of the paths to do this is the ongoing development of teachers, support for teaching networks and school managers in the consistent implementation of their curricula in line with Brazil's basic common curriculum (Base Nacional Comum Curricular - BNCC) and the production of educational content and materials that update and extend knowledge about the Amazon, as well as the opportunity for study scholarships. It is important that these materials be constructed with the effective participation of teachers, school managers and technicians from the education departments and that they be used and accessed free of charge nationwide, revealing all the complexity of this territory in an innovative and systemic manner.

Insert the Amazon in the curricula of the whole of Brazil.

Recognizing the importance of knowledge about the Amazon(s) reaching each and every Brazilian, the topics related to this territory urgently need to be included in curricula all over the country, taking advantage of this moment of renewal we are experiencing.

Integrating the world of work based on professional and technical education as part of the region's development.

The world of work, a dimension of the curriculum in secondary education related to professional and technical education, provides comprehension of the socio-productive dynamics of contemporary society, contributing to the autonomous and critical exercise of professions. In this respect, it is important to enable young secondary level students to learn in depth about the relations in the world of work in the Amazon, from a perspective of emancipation related to education and work, in connection with their life plans.

Support the improvement of connectivity infrastructure in the region.

Today it is impossible to think of education without connectivity. The internet should be available to all teachers and students in the Amazon.

Media literacy and education for democracy.

The media and social networks transmit information and knowledge, but it is necessary to guarantee both that topics related to the Amazon are aired and that this content is based on reliable data that reach the highest possible number of people, to disseminate a multiple and dynamic portrait of what the Amazon is and what it represents as a social, environmental and economic asset for our country and for the world. The full exercise of citizenship is directly linked with the capacity to understand and deal with the information the media puts into circulation.

All the actions which can, should and will be developed along lines that pursue the conservation of the social biodiversity of this territory and the reinforcement of our identity as a people and as a country. These fronts range over an infinity of fields to be explored, a fertile wetland of content and life, of different territories and identities, that are transformed and updated and make up the Amazonian landscape, the Brazilian landscape. These are also fields to which respected Brazilian institutions have been dedicated for many years, for which reason an articulation is fundamental for joining forces and connecting actions in a structured way for this region.

To start to implant an initial concrete action, the program Itinerários Amazônicos (Amazonian Itineraries) is being conceived. This is focused on secondary education, the last structured learning space for the majority of young Brazilians. From 2022, all the secondary schools in the country will experience an unprecedented adjustment in the curriculum, as set forth by the BNCC and existing legislation on secondary education. Going beyond general basic education, students will be invited to choose educational itineraries that connect with their interests, life contexts and educational needs. For this to materialize, in addition to the structural conditions that the teaching networks will need to guarantee, teachers and educational managers will be challenged to develop their practices focused on the integral development of students, based on the BNCC parameters, the new state secondary education curricula and, evidently, their prior knowledge and experience.

The program was the fruit of a series of questions: What is being taught about the Amazon in secondary education? How do young people learn about the



Artist: Rui Machado

Amazon? Have students been challenged to incorporate the Amazon as part of their identities? Regarding the young people in the region, are they being offered vocational possibilities coherent with the local context and conditions?

In response to these concerns, educational processes are being developed that will have a positive impact on the conservation of the Amazon, ensuring the existence of educational itineraries that address systemic aspects of the region and involve all the areas of knowledge and dimensions of integral education, complemented by a process of conception of these itineraries that also drives the development of the educators.

The program, which dialogues directly with the Sustainable Development Goals (SDGs), has five guiding principles:

1. Connection between knowledge, teaching practices and the life plans of the educators; **2. Collaboration** by means of a hybrid team comprising specialists, technicians from the education departments, secondary teachers and school managers from the state education networks in the Legal Amazon; **3. Empowerment** of the teaching networks; **4. Innovation** in the ways of doing, thinking and relating in education; **5. Knowledge** as a public good and equality in the consideration of diversity and singularities.

This program is an important part and the kickoff point for a major mosaic of actions that need to be taken. A multidimensional jigsaw puzzle that understands education in its broader sense, whose target public is young people and teachers, that incorporates a world vision in which environmental and social questions are indivisible and in which education, identity, society and work go hand in hand.

Security

The nexus between (in)security and climate in the Amazon

The proximity of the Amazon basin to the tipping point and the loss of native forest coverage were mentioned previously in this document. The drivers of deforestation are widely known: expansion of the agricultural frontier, extractivism for the exportation of commodities such as timber and minerals, expansion of highway and energy infrastructure. However, the discussion has been gaining new contours due to the increase in environmental crime.

Environmental crime and the crimes and irregularities associated with them undermine governmental capacity to impede deforestation in the Amazon,

⁵⁸ Further information in Adriana Abdenur, Brodie Ferguson, Ilona Szabo de Carvalho, Melina Risso and Robert Muggah. *Crime Ambiental na Bacia Amazônica: uma Tipologia para Pesquisa, Política Pública e Ação*. Instituto Igarapé, Strategic Paper 47, 2020..

⁵⁹ Suxberger, Antonio Henrique Graciano and Rhuana Filipe Montenegro dos Reis. 2020. 'Criminalidade Organizada Em Crimes Ambientais: Marcos Normativos Internacionais e Possíveis Respostas'. *Revista direito ambiental e sociedade* 10(1).

⁶⁰ Global Witness. *Last Line of Defence. The industries causing the climate crisis and attacks on against defenders*. London: 2021.

boosting the effects of the climate crisis in the region and on the planet. They also represent important challenges for public security, that demand greater and better articulation between strategic national actors, as well as reinforced regional and international cooperation.

Environmental crime and its impact on the forest

Over recent decades, due to the emergence and consolidation of the national and global environmentalist movement, a series of limitations on deforestation and the exploitation of Amazonian natural resources has been agreed on. A set of laws, regulations and public policies has been brought into force to preserve the standing forest, given its role as a cradle of biodiversity.

Today is known that the destruction of the forest is the result of the acts of a variety of actors, both legal and illegal, with extensive connections to domestic and global supply chains. It is no longer a question of recognizing the existence of disputes between development models: what we see today is the dramatic expansion of environmental crime in the Amazon.

Given that the legal concept of crime, irregularity or illegality may vary in time and space, comprehension of the impacts from a sociological conception is more pertinent.⁵⁸ The activities generating deforestation range from major works related to infrastructure, industrial mining and agricultural and livestock production (a priori authorized or licensed by the state) to a series of irregular activities.

In the more extreme cases these activities are exploited by organized crime, involving complex organized structures whose multiple transgressions are aimed at obtaining economic gain from the illicit exploitation of natural resources.⁵⁹ The involvement of these structures encompasses series of connected irregularities and crimes that facilitate and are facilitated by environmental crime, such as the illegal traffic in drugs and arms, people trafficking, financial crimes (corruption and money laundering), fraud and violent crimes (aggression, threats and homicide).

The relationship between environmental crimes and other crimes, such as drug and arms traffic, people trafficking, slave labor and the sexual exploitation of children, is evident on the so-called deforestation frontiers in the region. Lastly, the violence against defenders of the environment and indigenous leaders is extremely high - Brazil comes fourth in the ranking of violence against the defenders of the forest and human rights.⁶⁰

Organized environmental criminality in the Amazon is a phenomenon already recognized by the Brazilian State. In the words of the then coordinator of

the Federal Public Prosecution Amazon Task Force (in place from 2019-2021), “environmental criminality has assumed the nature of organized crime in the Amazon, associated with a number of illicit acts, such as money laundering, fraudulent and material misrepresentation, embezzlement, land grabbing”⁶¹

However, the approach to dealing with this question falls short of the dimension of the challenge. There are numerous difficulties in fighting environmental crime. The first of these is the way in which apparently legal actors and activities are interconnected with the illegal activities and practices. The energy and infrastructure sectors, for example, are closely linked with property speculation and illegal activities on different levels: from corruption to non-compliance with socioenvironmental standards in relation to operations. In parallel, the agricultural and livestock sector and the financial sector have failed in their duty of tracing production chains and impeding products generating environmental liability or resulting from deforestation from entering the market. On the one hand, investments in traceability instruments have been insufficient in view of the urgency of the question. On the other, there is strong pressure from representatives of the sector on the Legislature and the Executive spheres in the opposite direction, seeking to undermine regulations aimed at limiting agricultural production and mineral exploration in forest areas and indigenous lands in the Amazon.

Moreover, environmental crimes are erroneously seen by the state and society as being less pressing and are, therefore, investigated less. The security and criminal justice systems are lacking in human resources and are excessively focused on combating drug trafficking in the region, not prioritizing compliance with environmental laws. Administrative sanctions, such as fines, embargoes and the apprehension or destruction of the products of environmental crime and the machinery used in it, are promising, but not very effective.⁶²

Environmental crimes also benefit from different types of corruption, not only at a local level, the so-called “street level bureaucracy”, but also political corruption involving authorities from the three spheres of government. Although “invisible” at ground level, these actors finance, act, legislate and pass judgements in benefit of individuals and companies involved in major illegal schemes.

In addition to this, the institutions responsible for environmental protection do not have sufficient human and financial resources. In the case of Brazil, the weakening of environmental bodies in the national environmental system SISNAMA (Sistema Nacional de Meio Ambiente), in particular IBAMA and ICMBio at federal level, is much in evidence. Another fragility is related to gaps in the

⁶¹ Federal Public Prosecution area. “Força-Tarefa Amazônia apresenta balanço de dois anos de atuação no combate ao crime na região”. MPF, Public Prosecution Department in Amazonas. September 4, 2020.

⁶² Rajão, Raoni, Jair Schmitt, Felipe Nunes, and Britaldo Soares-Filho. 2021. *Dicotomia Da Impunidade Do Desmatamento Ilegal*. Policy Brief. Belo Horizonte: CSR; LAGESA; UFMG.

systems of governance and control, both in the regularization of land titles and in environmental control. The Rural Environmental Registry CAR (Cadastro Ambiental Rural), with its promises and limitations, is illustrative. Surveillance is also deficient in the exploitation of timber – where there is excessive documentary fraud – as well as in digital and auditable control of gold. There are also many systemic fragilities that permit the traffic of wild animals between countries in the region and the international markets to prosper.

To address this problem, it is necessary to identify and understand the role played by each actor in this complex ecosystem. There are criminal organizations that rely on the participation and corruption of civil servants and public authorities, who are rarely punished for the crimes they commit. There are also unofficial armed groups, such as factions comprising members of the criminal organization Primeiro Comando da Capital (PCC). And there is the impoverished and non-specialized manpower which, either on a compulsory or voluntary basis, commits the environmental crimes and ends up being the group most penalized for the irregularities and illegalities. It is obvious that, as is seen in the lower levels of drug traffic in shanty towns, the absence of basic state services and opportunities for economic inclusion in regions with occupied lands means that squatters and residents come under the yoke of those overseeing illegal deforestation and mining.

Lastly, the lack of regional cooperation should be noted between the countries in the Amazon Basin in preventing, investigating and prosecuting transnational criminals, sharing strategies and, above all, building a vision of the present and the future that values the enormous potential of the standing forest.

Given this context and the multiple challenges, reversing this situation in view of the climate emergency is a priority. But how? On the one hand, the solution involves strengthening the rule of law in the Amazon and, on the other, engaging the private sector.

Strengthening the rule of law and engaging the private sector

Strengthening the rule of law in the Amazon demands re-establishing the capacity for command and control in the state, starting with environmental inspection and control. It is also necessary to reinforce the capabilities of the police and public prosecutors, providing them with the strategic vision and the instruments necessary to combat environmental and correlated crimes, such as corruption and money laundering. In parallel, it is necessary to prioritize land title regularization and the registration of rural properties in all the countries in the region and to improve instruments such as CAR rural

property environmental registration. Another priority front is the creation of protected areas with restricted and sustainable use and the demarcation of new indigenous territories. This control and the strict application of the Environmental Code time framework will reduce land grabbing, land speculation and violence in the countryside, in particular against defenders of the environment. Lastly, it is necessary to strengthen regional cooperation under the aegis of a renewed and networked multilateral approach that involves local and national governments, civil society and the private sector committed to the future of the Amazon in the region.

At the same time, companies and investors need to do their part. Currently, two thirds of global supply chains do not have rules about illegal deforestation.⁶³ The large agro-industrial conglomerates, producers of soy and beef and their local suppliers need to do their part to eliminate deforestation. In addition to the immediate adoption of traceability technologies, increasingly auditable conditions need to be imposed on credit concession, in addition to the inclusion of metrics for the reduction of environmental crimes in ESG - Environmental, Social and Governance – rankings. On the other hand, it is up to the production sector to create conditions and incentives to boost reforestation, land regeneration measures and sustainable forest stewardship. This also involves investing in research and development and in the bioeconomy. Furthermore, the regulation of payments for environmental services is recommended, including the carbon markets, linked with clear plans for monitoring and transition to the green economy.

Be it on the public policy front or in the market, combating environmental crime and overcoming the current paradigm oriented to destruction is urgent. It is a common albeit differentiated responsibility, due to the symbolic and shared understanding of what our natural capital means for all of us.

⁶³ Forest 500. Forest 500 annual report 2019: the companies getting it wrong on deforestation. Global Canopy: 2020

TRANSVER

SAL ACTION

FRONTS

TRANSVER

SAL ACTION

FRONTS



TRANSVERSAL ACTION FRONTS

The transversal actions indicated previously in the table on page 12 are shown ahead: the importance of culture and strengthening governance.

“The Amazon is all of us. Limits of our body on earth, return to the earth as a path. Mother earth as a subject of rights. Create intimate relations with nature, with the rivers, with diversity. We should reconnect with nature.”

(Gustavo Caboco)

The importance of culture

Going beyond the actions that should be implemented by governments, companies, and civil society organizations with support from science, it is fundamental to revive the meaning of the Amazon for Brazilian society, underscoring its intrinsic value, associated with the historical, cultural and natural heritage that the region represents. It is necessary to work on the concept of preserving our historical heritage and our roots to also guarantee an environmental consciousness for the future.

How to define what the Amazon is today? Innumerable representations might be legitimate, constructed and shaped over centuries. The challenge is not in mapping these representations. **The challenge is in mapping and characterizing Amazonian society, with its contradictions and complexities, its different flows and networks**, based on data that are sometimes dispersed and on imprecise,



Artist: kambô

invisible data, from invisible groups, on controversies and interests that hover over this area. It is necessary to make a bold proposal that connects these people in this space over time. Perceive and respect, for example, the value of the age-old culture of the original peoples, with all its variants and adaptations, and the culture of those who came later, settling in this territory centuries ago. Currently, the indigenous lifestyles are frequently perceived as being an onus rather than valuable. There is an intelligence to be extracted and transformed into benefit for the population and success in conservation. It is this confluence that weaves the culture, forming society.

Each group that was already in the region, or that for different reasons arrived and established itself in these lands, has a unique relationship with the territory (and with each other), determined by different ambitions and affections. They are identities in movement, transtemporal, activated and deactivated depending on the moment, the condition and the conflicts that arise.

What is seen in the Legal Amazon is a space covered by the native forest, liquid spaces, capillarizing this territory together with grey spaces, consisting of highways and cities more or less organized in networks, naked spaces, where agriculture prevails, and protected spaces, which are indigenous lands and conservation units. Within and on these spaces diverse groups live, resist and reinvent themselves, with greater or lesser permeability between modes of life, culture and identity.

We need to **update what we imagine the Amazon to be**. The memory is in the traditional peoples, but it is also in those who (i) migrated from the Brazilian Northeast to work and escape from drought, and from the South, to produce on new lands. (Im)migrants who have occupied the Amazon for three generations and who have had/have to deal with prejudice, stereotypes and images that for a long time have afflicted these traditional peoples and they themselves to construct a society. Today, they are all Amazonians.

“Putting the Amazon in the center of the debate means dignifying all the bodies that are there. Joining up the fragments — re-encountering oneself slowly.”

(Marcela Bonfim)

Strengthening governance

Governance designates the need to **govern in a shared, interactive, collaborative, multi-level and negotiated manner**. Governance is fundamentally shared because it is plural, heterogeneous and socialized. Governance is interactive because it is continually produced by its multiple actors. Governance is collaborative because it depends on a contest in which all seek to sustain themselves. Governance is multi-level because it is transversal to the various instances of government (from local to global, encompassing micro-regional, state, macro-regional, national, continental etc.). Governance is negotiated because it depends on the processing of conflicts to advance.

The governances in the Amazon are many, heterogeneous and asymmetrical. There is no single regional governance, but a set of instances of governance that are distinct in nature. They articulate municipalities, state governments, sub-national spheres and others with their own dynamics, although they are intertwined.

Governance of the Pan-Amazon region has in the Amazon Cooperation Treaty Organization (ACTO), founded in 1995, an attempt at the organization of a transborder agenda based on the political frontiers of the countries that are part of the continental biome. Although still young and relatively fragile, ACTO shows significant potential to address subjects that transcend national borders. But it requires time to mature.

Federal government interchange with the region was historically through the Amazon Development Superintendence SUDAM (Superintendência de Desenvolvimento da Amazônia), created in 1966. Extinguished and transformed into the Amazon Development Agency ADA (Agência de Desenvolvimento da Amazônia) in the second term of President Fernando Henrique Cardoso, SUDAM was recreated in 2007, at the beginning of President Luiz Inácio Lula da Silva's second term in office.

From 2019 the state governments of the Legal Amazon were organized in the Interstate Consortium for the Sustainable Development of the Legal Amazon (Consórcio Interestadual de Desenvolvimento Sustentável da Amazônia Legal), currently an important sphere for regional interaction anchored in the political-administrative authority of the elected governments in the region. Two documents provide relevant reflections on regional challenges: Strategic Planning 2019-2030 (2019) and the 2021 Plano de Recuperação Verde (Green Recovery Plan).

⁶⁴ The role of civil society is not restricted to participation in the different spheres of governance. The participation of civil society, in particular socio-environmental activists, indigenous peoples and traditional communities, is fundamental in the formulation and implementation of a sustainable economic agenda with structure building and transversal actions.

⁶⁵ According to the Legal Amazon map updated by IBGE in 2021, the region currently comprehends 9 states and 772 municipalities: Acre (22 municipalities), Amapá (16), Amazonas (62), Mato Grosso (141), Pará (144), Rondônia (52), Roraima (15), Tocantins (139) and part of Maranhão (181 municipalities, of which 21 have been partially integrated). Maranhão is the state with the highest number of municipalities in the area and has 79.3% of its territory (or 261,350.785 km²) integrated into the Legal Amazon.

In the context of the Amazon, the need to redesign forms of governance has been identified, including measures such as:

- Connection of the Amazon biome with the other biomes, especially its relations with the Atlantic Rainforest (tropical forest) and the Cerrado;
- The exercise of less discrete governance arrangements and flows, dealing with Amazonian heterogeneity in a more timely and efficient manner;
- Clearer definition of the roles and responsibilities of each party, encompassing especially rights of access to resources;
- Valuing and autonomy of the governance arrangements and sub-national processes;
- Growing expansion of the participation of civil society⁶⁴ and the business sector in governance spheres;
- Strengthening of the approach to the climate dimension in Amazonian governance in its relations with national and international spheres, which involves different ministries (Ministry of Foreign Relations, Ministry of Agriculture, Livestock and Supply, Ministry of the Environment, Ministry of Science, Technology and Innovations, among others), and the federative powers and relations with states and municipalities;
- The role of the regulatory agencies dedicated to monitoring environmental questions (deforestation, degradation, among others) in the centralization and decentralization of socio-environmental policies and the elaboration of credible official metrics for carbon, water and taxation;
- Adjustment of the dysfunction in balance between the federative power of the states and the municipalities.

Local institutional capacities: the role of the municipalities

The sustainable development of the Amazon is a challenge of multiple dimensions. The responses may come from diverse actors and sources, but **the importance of action at a local level, by means of integrated policies and inciting national governments to act, is undeniable.** The municipality is the most structured, long-lasting and closest space in the life of the Amazonians. There is no way that any long-term project will be institutionalized in the region without creating roots in the local sphere, that is, without being received by the administrative structures of the local powers.

The 772 municipalities⁶⁵ that make up the Legal Amazon region share the traditional deficiencies in capacity and resources that characterize the reality of local governments in the country. However, they generally have five specific factors: geographical extension, isolation in relation to the rest of the country, the fact that they are predominantly rural, low occupational density and the historical lack of both public policies and institutional articulation capacity.

The combined occurrence of these factors magnifies the challenge of institutional development in the region. The pandemic exacerbated an already difficult situation of scarcity of resources, unemployment, lack of qualified personnel and the absence of prospects of growth in local public administrations. The mayors and mayoresses come under intense pressure from the electorate, comprising people with a name, surname and address. The international community, in turn, convokes these same leaders to adopt strong positions in the combat against climate change.

The challenges are even more significant when the risks of forest devastation associated with major works are taken into account. These may be direct — construction of infrastructure, highways, work sites, camps — or indirect — unordered occupation of the land, greater pressure on forestry resources, property speculation, etc.⁶⁶ In this context, the local governments face social, economic, legal and environmental liabilities of immense impact, particularly in indigenous and *quilombola* lands, which even state and federal governments are unable to address.

For these reasons, it is necessary to support the local and sub-national governments, together with other government spheres, civil society, universities and the private sector, in strengthening institutional capabilities to comply with legislations⁶⁷ and climate agreements⁶⁸ and for the adoption of municipal policies that are resilient to climatic and economic vulnerabilities, comprehending coordinated mechanisms for the implementation of integrated, planned actions that are prioritized within the public budget with well defined targets and indicators.

These actions should be constructed transversally, involving local policies directly or indirectly connected with the climate agenda: healthcare, education, social assistance and development, urban mobility, ICTs, supply, agriculture and fisheries, environment, economic development, employment, income and so many others. This moment is a key opportunity to mobilize national and international resources to finance projects.

⁶⁶ Centro de Estudos em Sustentabilidade – Fundação Getúlio Vargas (FGVces). Mapa dos Caminhos: Proteção Territorial Indígena. July 31, 2015. Available at: http://indicadores-debelomonte.eco.br/attachments/06febf-7415c4bce0e6d78511fb-bc713a880119b7/store/7a2d2b6f-dc74661fbc65df-c75e00bb658c37196d-840b7e87615d7721fd62/MapadosCaminhos_ProtecaoTerritorialIndigena_jul15.pdf. Acesso em: 20 ago. 2021.

⁶⁷ Dos 9 estados amazônicos, 7 possuem legislações estaduais sobre mudanças climáticas (Acre, Amapá, Amazonas, Maranhão, Pará, Rondônia, Tocantins); além de 3 capitais da região (Manaus, Palmas e Porto Velho). Fonte: ICLEI; Programa Cidades Sustentáveis: Guia de Ação Local pelo Clima. São Paulo, Brasil. Disponível em: https://www.cidades-sustentaveis.org.br/arquivos/Publicacoes/Acao_Local_pelo_Clima.pdf. Acesso em 24 set. 2021.

⁶⁸ Agenda 2030 e ODS, Acordo de Paris, Aliança pelo Clima Brasil; Carta dos órgãos estaduais de meio ambiente pelo clima; Deadline 2020; Governadores pelo Clima; Pacto Global de Prefeitos pelo Clima e a Energia e Race to Zero.



Artist: Rui Machado

69 <http://otca.org/pt/quem-somos/>

Pan-Amazonia

The Pan-Amazon territories are diverse and involve a series of questions of common interest. In this regard, a number of regional initiatives have been agreed upon in recent decades:

Pan-Amazon Initiatives

ACTO

The Amazon Cooperation Treaty Organization (ACTO) is an intergovernmental organization formed by eight Amazonian countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela. It is the only socioenvironmental block in Latin America and adopts a South-South cooperation vision in the political-diplomatic, strategic and technical dimensions. It aims to create synergies between governments, multilateral organizations, cooperation agencies, organized civil society, social movements, the scientific community, production sectors and society as a whole.⁶⁹

ACT

The Amazon Cooperation Treaty (ACT) was signed in July 1978 with the objective of promoting the harmonious development of the Amazon territories in order that joint actions may generate equitable and mutually beneficial results in the generation of sustainable development in the region. As part of the treaty, the member countries assumed the common commitment of preserving the environment and using the Amazon's natural resources rationally.

The Leticia pact

This is a cooperation agreement signed in September 2019 by the governments of Bolivia, Brazil, Ecuador, Colombia, Guyana, Peru and Surinam aimed at promoting concrete actions to ensure the protection of the Amazon. The pact proposes integrated actions between the countries that share the Amazon biome and lists 16 points around which the signatory countries intend to collaborate. The objectives include generating joint responses to the disasters that may occur in any country, strengthening regional action to face pressures such as deforestation, the selective extraction of timber and the illegal exportation of minerals, advancing in the generation of scientific knowledge to take the best decisions for the protection of the Amazon, creating forestry reclamation initiatives, using resources sustainably, working to strengthen the position of women and indigenous peoples and creating educational campaigns on the importance of the Amazon.

The pact was signed in the city of Leticia, on the triple border between Colombia-Peru-Brazil. The Leticia Pact is fundamental for greater collaboration between the Amazonian countries. Joint action by all the countries that share the forest is a long-standing expectation of many of the people active in the region, particularly in the socioenvironmental and economic areas. Among the countless action fronts, this collective and integrated action could permit more rapid and efficient measures to control and combat deforestation and forest fires.⁷⁰

Synod of bishops for the pan-amazon region

Announced in 2017 by Pope Francis, the Synod for the Amazon addresses subjects of common interest for the nine countries in the biome. These are organized in two fronts: Catholic pastoral and environmental. This synod, as a consultation mechanism for the pope, was convened to debate and supply material for him to provide the clergy with guidelines. In accordance with the preparatory document, the Special Assembly for the Pan-Amazon was convened to encounter new paths to grow the Amazonian face of the church and to respond to injustice in the region. Concerned about the indigenous populations, in his convocation the pope declared that "Probably, the original peoples of the Amazon have never been so threatened in their territories as they are now. The Amazon is a land disputed on a number of fronts".

After the synod of the Amazon, Pope Francis issued his Post Synodal Apostolic Exhortation, sharing "Dreams for the Amazon" with his church and the whole world. In his exhortation⁷¹, the pope sought to encourage affection and concern for this land, inviting us to admire it and acknowledge it as a sacred mystery. In the Exhortation, the pope formulated four great dreams inspired by the Amazon: a) an Amazon that fights for the rights of the poorer people, the native people, so that their voice may be heard and their dignity upheld; b) an Amazon that can preserve its cultural riches; c) an Amazon that can jealously preserve its overwhelming natural beauty and the superabundant life teeming in its rivers and forests; d) Christian communities capable of generous commitment, incarnate in the Amazon region, and giving the Church new faces with Amazonian features.

Indigenous female leaders

The Indigenous Peoples and Local Communities (IPLCs) occupy less than 25% of the Amazonian territory. Studies demonstrate that the lands administered by them are better protected against deforestation. Throughout the Amazon, indigenous women play a critical role in environmental management. There are cases such as the Kayapo leading their communities in protests against the illegal extraction of timber and mining activities, women leaders defending the

70 https://www.minambiente.gov.co/images/2019/PLAN_DE_ACCION_PACTO_DE_LETICIA_POR_LA_AMAZONIA.pdf
<https://id.presidencia.gov.co/Documents/190906-Pacto-Leticia-Amazonia-Ingles.pdf>

71 Exortação Apostólica Pós-Sinodal. Querida Amazonia. Do Santo Padre Francisco. Disponível em https://www.vatican.va/content/francesco/pt/apost_exhortations/documents/papa-francesco_esortazione-ap_20200202_querida-amazonia.html. Acesso:04/10/2021

⁷² <https://www.conservation.org/brasil/noticias/2021/05/13/mulheres-indigenas-em-solucoes-ambientais-na-amazonia>

conservation of nature before the government as a means of protecting their lands, female warriors from the forest preventing illegal timber operators from entering their indigenous territories.

In spite of their critical role, women are frequently marginalized in decision making processes and neglected when opportunities for their development arise. Although there are certainly examples of strong female leadership, there is still a gap in women's participation and in decision making at all levels, with few opportunities to develop the next generation female leaders. This leads to unfair policies and initiatives at local, national and international level. It also undermines the success of climate and conservation efforts and continues to jeopardize indigenous women.⁷²

Some questions of interest for the Pan-Amazon region

Actions between countries to promote environmental conservation and sustainable development could be very positive. These joint efforts could more easily help to avoid reaching the tipping point which would degrade the water cycle, resulting in a decrease in rainfall in South America and affecting the water supply of urban centers and agricultural areas. There is little point to a country making a major effort to conserve and preserve its portion of the Amazon if its neighbors do not do the same thing. A country that has preserved its own territory could end up suffering the negative impacts of deforestation and forest fires in neighboring Amazonian nations. This is why the conservation of the Amazon can only be achieved by joint efforts. There are a number of ways in which this could happen. Some examples and preliminary recommendations follow. These are to be debated collectively and continuously:

Technology transfer

- Importance of the exchange of technologies, including social and indigenous technologies, with appropriate compensation.

Economy

- Agreements could be established so that the signatory countries may cooperate in order to contribute to the economic and sustainable development of the region.
- Sustainable markets could be oriented to forestry products and those not involving deforestation, enabling them to receive tax incentives in all the countries involved in the agreement.
- Investments could be coordinated among financial actors in benefit of sustainable businesses going beyond the borders of a single country.

Environment

- Urgent collaborative combating of forest fires.
- Coordination of actions and targets for combating deforestation.
- Creation and maintenance of cross-border parks or reservations that occupy more than one country with a view to supporting the many peoples who live on the frontiers, as well as promoting tourism to generate income for the locals.
- Joint action by governmental and non-governmental organizations, academia and companies, to reinforce actions to protect ecosystems.

Urbanization

- Policies of defense and guarantee of rights for indigenous peoples, riverine communities, refugees and/or other groups in vulnerable situations that have migrated from their original territories to the cities (measures of basic citizenship such as the issuing of personal documentation);
- Combat xenophobia and criminalization of migrants from the Pan-Amazon to the cities;
- Combat trafficking in people, especially women, for sexual and commercial exploitation;
- Actions for territorial planning considering the unsustainable growth of agricultural, extractive and logging activities in the Amazon and their impacts in the form of unequal and predatory urban development in the Amazon basin.

Criminality

- Combating criminality should become a priority given the presence and actions of criminal gangs in the Amazon region.

Interactions with international governance entities

The combat against global environmental crises — climate change, loss of biodiversity, imbalance in ecosystemic services and pollution — has been imposing the urgent need for changes in economic and social development processes. In the case of Brazil, it is not possible to seek robust, large scale national solutions without the political ambition to pursue an innovative sustainable development process for the Amazon.

The current moment should be seen as a historical opportunity to align domestic and global values and an external policy that employs the process of sustainable development and climate security as paradigms. The socio-environmental issue is central to Brazil's development and, therefore, to its foreign policy for the 21st century. The Amazon is a key part of the country's development process and should feature in this equation as a political asset for contemporary national realignment.

For this debate, the following aspects should be observed and reinforced:

- **Restoration of Brazil's leadership in this topic.** This is a question of recovering the country's international role in this question in a manner compatible with its natural and socio-cultural heritage and its ambition to contribute towards a better world;
- **The Amazon is a critical and fundamental element in this process.** Not only in terms of the country's international credibility, but also in terms of appropriation of the question by the Brazilians. That is, what is proposed is the country's objective, broad, diverse, well-founded vision, shared with the Amazonians, about what Brazil wants for the region in the present and in the future.
- **The future of Brazil involves the Amazon.** Decisive changes to brake the current tide of destruction must be taken today and adopted in the decade 2020–2030. The country's nature cannot be replaced. Its traditional peoples are the guardians of the civil foundations of what we are as a society. In other words, the future is in what is standing and needs to remain standing: forest, biodiversity, nature and the ethnic-cultural diversity of our society.
- **The role of the Amazon in the country's global relevance.** The Amazon is not bigger than Brazil but, in this new geopolitical context it is important to have a pragmatic and innovative vision to strive for a place in the world taking into account its political, social and ecological heterogeneity. And be guided by a diversity of possible courses, understanding its realities and its potential also to impact new courses for Brazil.
- **What is wanted from the Amazon as a country and nation, and what the Amazon wants from Brazil and the world.** It would seem essential to understand the current narratives about the region prevailing in the national and international context. However, there will be no progress without the revelation and exercise of the interests and viewpoints of the Brazilians living in the heterogeneity of its political, economic, cultural, social and environmental territories.

An agreed upon vision of the Amazon involving Brazilians and the Brazilians who live in the region is urgently needed. This vision will organize innovative relations between the Amazon and Brazil and vice versa. It will also orientate a new agreement between Brazil and the world about the global socio-environmental and climate agenda and a supportive role towards the planet on the part of Brazil. This vision should also converge with the interests of regional integration and be based on a diplomatic approach to the region.

This route requires changes in Brazilian foreign policy in pursuit of a vision of international cooperation that can be transformed into concrete action in the Amazon and in the world, with broad mobilization and synergies in actions between public and private actors.

The strategic perspectives of this challenge demand a bold platform of international cooperation, that dialogues with the agendas for the future and the common principles that model an innovative articulation between the Amazonian countries. The preservation of national interests requires Brazil to focus on the Amazon and its neighbors. South America is indispensable for the preservation of Brazil's vital interests, including regional environmental policy. Brazil urgently needs to think the development of the Amazon from a regional standpoint and to be bold in proposing a regional environmental policy.

It is also essential to better understand and master the progressive influence of socio-environmental and climate factors on the multilateral international debate. And not only with respect to content. These topics impose new dynamics on cooperation, strongly influenced by the new roles assumed by non-state actors, in particular the private sector, NGOs and science. In addition to their reactive role, it will be up to the states to act based on co-responsibility and co-leadership.

Concrete actions: where to begin the transition?

Set of non-exhaustive proposals

Economy

- Programs oriented to a regenerative economy (restoration of native forests), including R&D in native silviculture, tax and financial incentives (based on the positive externalities generated). Efforts directed at the monetization and valuation of positive externalities, especially in carbon and water, to create fair metrics, foster markets and distribute wealth in a fair and transgenerational way;
- Strengthening of existing but under-exploited agro-food chains (e.g.: Brazil nuts, fruits etc.), with assistance in technical areas, logistics and storage, phyto-sanitary control, access to markets (“commoditization” of non-timber forestry products and reinforcement of an export economy);
- International trade policies oriented to the traceability of complete commodity chains, ensuring minimal environmental impact (zero deforestation) and respect for land ownership rights of other proprietors (without invasion and superimposition);
- Actions to boost economies in deforested/degraded areas (e.g.: agriculture and mining), taking into account different scales of production (in particular smallholders and family agriculture);
- Actions oriented to production knowledge chains, that is, diagnoses of bioeconomy market structures and the construction of collaborative mechanisms that strengthen the principles guiding the Amazonian bioeconomy.
- New business models based on the adoption of the logic of circularity and on the valuation of agro-forestry and urban waste;
- Incentives for the creative economy through the valuation of activities such as tourism, gastronomy and audiovisual production, and industrial processing using advanced technology;
- Policies for copyright/intellectual property and to prevent biopiracy and the cultural appropriation of original knowledge;
- Expansion of the number of forestry concession areas and diversification of sustainable economic activities in the forestry concessions, such as the generation of carbon credits, tourism, reforestation and research and development of products employing native species.

Fiscal instruments and financial mechanisms

- Development of financial mechanisms oriented to conservation, in addition to carbon. E.g.: insurance and re-insurance alternatives, financed by sectors benefiting from conservation (climate, biodiversity etc.);
- Guarantee of funding for the implementation of the

- national payment for environmental services program;
- Incorporation of climate and biodiversity-related variables into financial risk analyses;
- Inclusion of traceability and illegal deforestation conditions in agricultural financing;
- Fiscal policies with matching conditions for conservation.
- Innovative financing instruments that enable the adaptation of risk-return ratios for diverse types of investors.

Territorial organization and land title regularization

- Strengthening and effective application of command and control actions to combat land grabbing and illegal deforestation and application of the Forest Code;
- Adoption of mandates for strategic jobs/positions, administrative and budgetary autonomy, among other measures, to ensure the implementation of a State policy;
- Suspension of changes in land title regularization regulatory frameworks until the advances in the current frameworks materialize;
- Guarantee of territorial/collective rights (land ownership and use) and generation of economic opportunities for traditional communities and indigenous peoples;
- Continuity of land governance and land title regularization programs led by state governments through changeovers in administration;
- Implementation of a functional, robust land administration system, with integration of information and coordination between entities;
- Joint actions between public institutions for the re-appropriation of areas with land title applications underway that breach legal requirements;
- Land title regularization for rightful owners in accordance with the legislation in force;
- National traceability program with full disclosure of information (GTAs, DOFs, stewardship permits, prospecting, SIGEF certification etc.);
- Governance for effective social participation.
- Cancellation of irregular CAR environmental registration, in particular those overlapping conservation units and indigenous lands.

Science, technology and innovation

- National ST&I program oriented to the Amazon biome (for example, basic and applied research for the bioeconomy, integral public healthcare) with a long-term perspective, expansion in investments and consistent execution;

- Strengthening of teaching institutions for the training, retention and expansion of the number of researchers in the region, as well as enhancement of the existing Amazonian research centers, in parallel with the creation of new institutions;
- Articulation between the bases of scientific and technological knowledge;
- Cross-disciplinary initiative combining different types of Amazonian knowledge, based on priority topics, such as the social-biodiversity based bioeconomy, agro-food systems, One Health, medicine and drugs and bio-inputs;
- Incentives for the development of innovation ecosystems, encompassing technology-based start-ups and the development of complete Amazonian production chains;
- Mapping of the capabilities, aptitudes and stages of development in ST&I in the Amazon environment, connecting research and researcher development efforts and the consolidation of businesses;
- Prioritization of knowledge production that promotes social inclusion and income generation, as well being compatible with forest conservation;
- Valuing of traditional knowledge for the participative construction of new production chains;
- Environmental education measures, training for youth in the Amazon; incentives for the participation of the local population in science.

Infrastructure

- Elaboration of concept of green/sustainable infrastructure for the context of the Amazon;
- Conception of logistics plan for the transportation of products from Amazon chains. Planning of urban infrastructure suited to the relationship of the cities with the rivers and forests, especially for basic sanitation solutions.

Indigenous issues

- Elaboration of a protection and surveillance plan of indigenous lands, to ensure their territorial integrity;
- Support for initiatives by indigenous peoples and their organizations that ally sustainable activities for generating income with the preservation of the standing forest, with full respect for their uses, customs and traditions;
- Scientific program for research and recovery of the fish population of Amazonian rivers, especially in Indigenous Lands and black water rivers;
- Initiatives for the protection of genetic resources and traditional knowledge associated with indigenous peoples;

- Development of an indigenous science program, to boost the training of indigenous youth in key areas for the protection of their lands: biology, forests, climate change, water and soil;
- Program of digital access for indigenous peoples on their lands;
- Guarantee of budgetary resources to enable the full implementation of the demarcation of Indigenous Lands;
- Innovative financial mechanisms to support the future projects of the indigenous peoples, through BNDES, BASA, Caixa Econômica Federal, Private Banks, with the offer of Treasury guarantees or through a Credit Guarantee Fund (FGC).

Structure related actions

- Digital and connectivity infrastructure for the entire region;
- Program for universal access to energy;
- Specific education program for the Amazon (physical and cultural conditions);
- Reinforcement of SUS public healthcare system.
- Integrated program to combat illegal acts in the Amazon;
- Interstate integration of environmental systems and tools for land administration, monitoring, inspection, licensing, fines and embargoes;
- Adoption of deforestation moratorium until additional non-deforestation incentive instruments are implemented and incorporated into society.

Transversal actions

- Joint policies and measures by means of consortia, working groups or technical committees, including between states and municipalities;
- Mobilization and attraction of mechanisms and sources of funds for projects linked with the PRV green recovery plan (Plano de Recuperação Verde).

Note: BASA – Banco da Amazônia; BNDES – Banco Nacional de Desenvolvimento Econômico e Social; CAR – Cadastro Ambiental Rural (Rural Environmental Registry); ST&I – Science, Technology & Innovation; DOF – Documento de Origem Florestal (Forestry Origin Document); GTA – Guia de Trânsito Animal (Animal Transit Form); R&D – Research & Development; PES – (Payment for Environmental Services); SIGEF – Sistema de Gestão Fundiária (Property Management System); SUS – Sistema Único de Saúde (Public Healthcare System)

ABOUT THE

AMAZON

CONCERTATION

INITIATIVE

ABOUT THE

AMAZON



ABOUT THE AMAZON CONCERTATION INITIATIVE

The Amazon Concertation is a network of more than 400 leaders formed in 2020 to create solutions for the conservation and sustainable development of the Amazon region.

It is also a plural, democratic space in which dozens of initiatives come together with the purpose of defragmenting the debate and actions for the Amazon. We believe that engaging as a network enables the amplification of the individual capacity of articulation between resources and knowledge to drive scale and innovative cooperation, generating proposals for the development for the region.

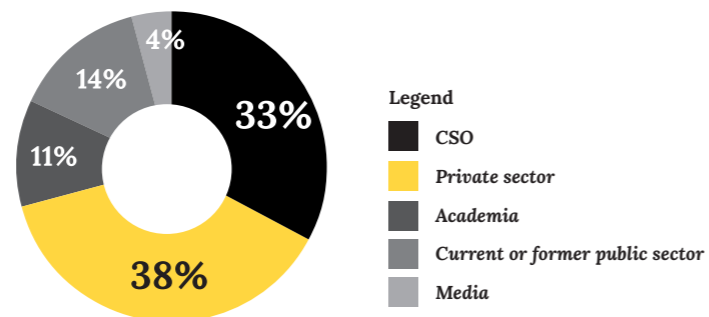
The initiative is based on four fundamental pillars: **(i) development** (comprehension of the development models to propose an agenda capable of containing environmental degradation, reconciling natural capital and social justice), **(ii) businesses** (as a type of organization fundamental for regional development), **(iii) institutional** (strengthening the institutional capabilities of state and non-state public organizations), and **(iv) governance** (mechanisms, arenas, leaders and rules of the game of governability in the region). A fundamental aspect to foster the mobilization of this network is understanding of the socio-environmental assets and flows of the Amazon as key to climate balance, conservation of biodiversity, the vitality of ecosystemic services, valuing Pan-Amazon regional culture and institutional innovation.

Amazon Concertation in numbers

250
organizations

400
leaders

19%
from Amazon

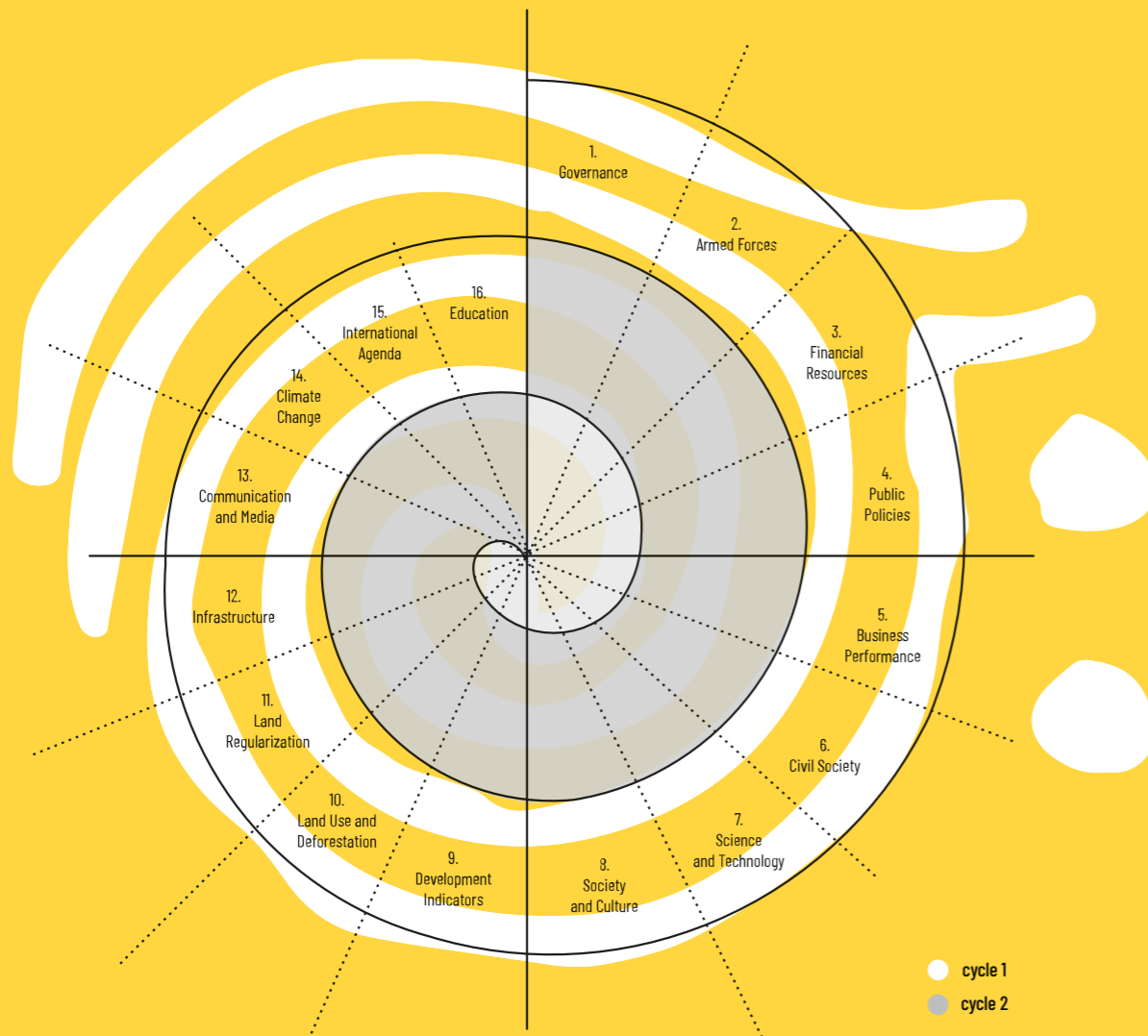


Artist: Paula Sampaio

One of the first steps towards constituting the Concertation was the establishment of a nucleus called “Recognizing the Amazon”, which is a base of systematized knowledge about the region divided into 16 thematic areas:

Recognizing the Amazon

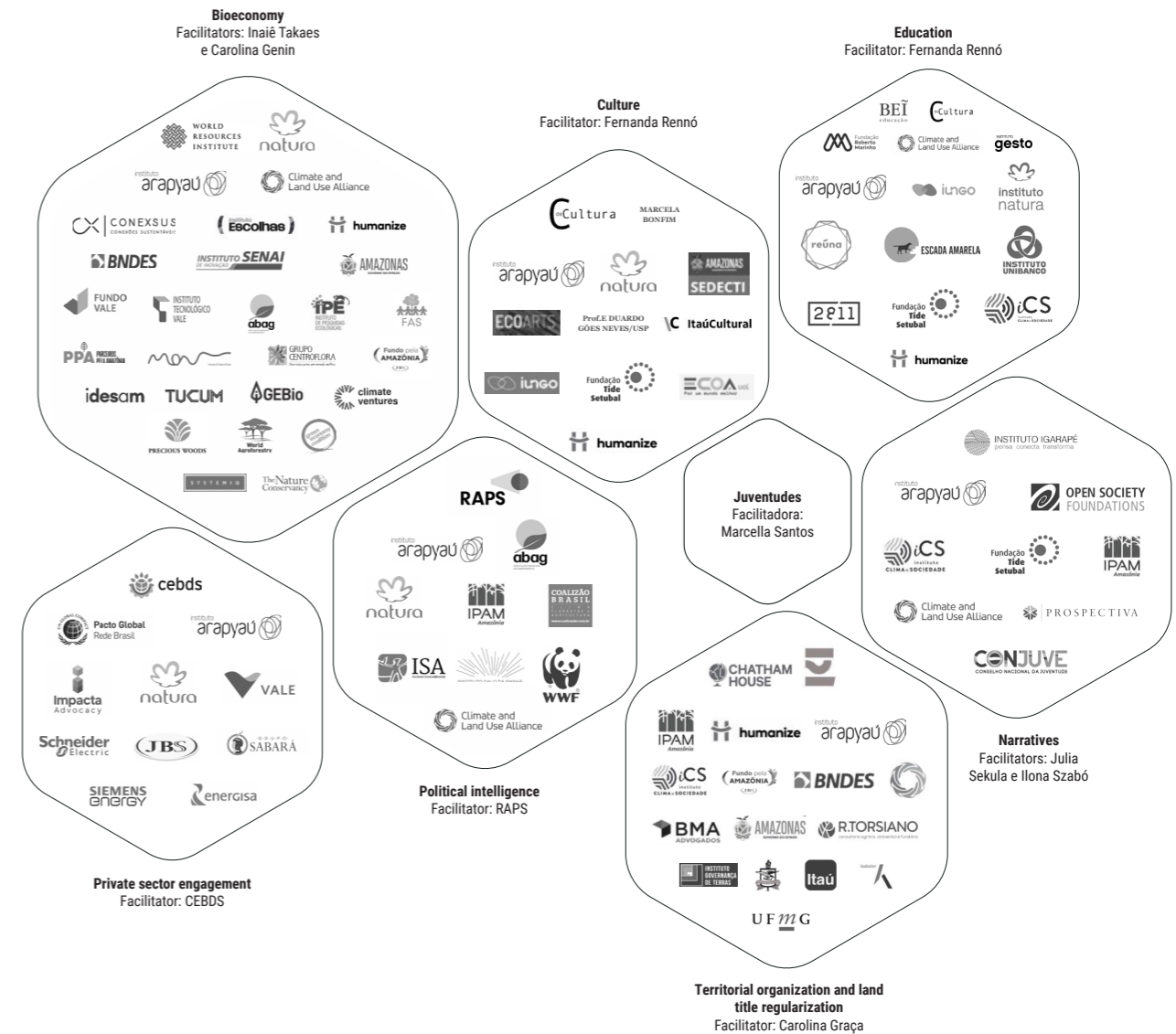
Broad base of systematized knowledge about the region



The network is also engaged in working groups oriented to action and organized in accordance with the following topics:

Working Groups

September 2021



BIOECONOMY WG

Goal: This front was created due to the existence of different interpretations of the bioeconomy in the context of the Amazon and their implications for the sustainable business models and public policies that the group seeks to reinforce. The focus is on scaling up the bioeconomy, valuing Brazilian social biodiversity. Accordingly, the proposal of the WG is to promote the articulation of networks of entrepreneurs, financiers, public administrators, local and business leaders, among others.

Deliveries: proposal of framework for a bioeconomy in the Amazon; organization of the 1st Forum of Innovation in Investment in the Amazonian Bioeconomy; white paper for the session “What does bioeconomy mean?”, in the Global Landscape Forum Amazônia 2021.

CULTURE WG

Goal: This is a space for dialogue and action around sociocultural diversity in the Amazon. The group seeks means of revealing this diversity, permitting art and culture to extrapolate the realms of illustration and entertainment to be considered sources of sensitive information and involvement in this territory.

Deliveries: insertion of the cultural dimension, with art and artists from the Amazon, in all the A Concertation for the Amazon environments and actions (plenary sessions, webinars, knowledge products, among others).

EDUCATION WG

Goal: The purpose of this front is to construct processes in education that drive a positive impact in the conservation and sustainable use of the Amazon. The group believes that structural development actions for this field in the Amazon involve inserting the region in the school curricula in the whole of Brazil, integrating the world of work based on professional and technical education as part of the region’s development, supporting enhancement in connectivity infrastructure, media literacy and education for democracy.

Deliveries: conception of the Itinerários Amazônicos (Amazonian Itineraries) program, focused on secondary education, to be implemented in public schools in 2022 (in progress).

ENGAGEMENT OF BUSINESS SECTOR WG

Goal: Its main objective is to join forces and obtain commitments from businesses around relevant matters for the Amazon. Accordingly, by means of high-level articulation in the private sector, the group is pursuing positions that lead to concrete actions and structural changes based on business activities that generate positive impact in the development of the Amazon.

Deliveries: development of business sector positioning on the Amazon for COP26, centered on incentives for zero deforestation and promoting an inclusive, regenerative economy.

POLITICAL INTELLIGENCE WG

Goal: The purpose is to monitor and analyze socioenvironmental questions in the legislative and federal executive spheres and in public debate. By means of this active monitoring, the group seeks to anticipate agendas and changes in the political scene, diminishing the lack of information and political intelligence for organizations in the socioenvironmental area engaged in political action, mobilization and advocacy.

Deliveries: weekly reports with the results of the monitoring of the executive and legislative spheres and the public debate, with collective reflection on the information garnered; analytical and thematic reports on topics defined previously with the group (carbon market, environmental licensing, land title regularization, among others).

YOUTH WG

Goal: To seek to listen to, insert and represent the different voices of a population corresponding to almost 50 million Brazilians aged from 15 to 29 years in discussions related to the present and future of the Amazon. The group uses this space to articulate and empower different youth groups, with the potential to permeate the entire Amazonian territory, operating transversally to provide direction and to help build all the initiative’s action fronts.

Deliveries: in progress.

NARRATIVES WG

Goal: The Narratives WG was assembled with the common purpose of pursuing, testing and stimulating contemporary narratives on the Amazon that dislodge historically established paradigms and help reconnect the region with the identity of the Brazilian citizen and reinsert Brazil in global geopolitics.

Deliveries: in progress.

.....

TERRITORIAL ORGANIZATION AND LAND TITLE REGULARIZATION WG

Goal: It is the understanding of the WG that territorial organization and land title regularization are necessary processes to promote the socio-economic development of the Amazon and to arrest deforestation in the region.

Accordingly, the group proposes to qualify the debate in these areas, identifying bottlenecks, ambiguities and what may be done to overcome the chaos reigning in this respect in the region. The group also seeks to bring together all the key actors involved in this dynamic, debating, generating and sharing knowledge, as well as articulating the implementation of pilot projects that may serve as paths for overcoming historical barriers to progress in these agendas.

Deliveries: guide with four key questions about land title regularization and change in the legal framework; paper “Ordenamento Territorial e Regularização Fundiária na Amazônia: do caos à superação” [Territorial organization and land title regularization; from chaos to solution] (in progress).

The construction of visions for sustainable development in the region involves reconnecting the Amazon as an identity of Brazilians and citizens of the world, based on knowledge of the region and careful listening to the many voices from Amazônia and about Amazônia. Conciliating this diversity of visions means dialog, sharing, and also creating new political spaces. It means expanding the collective capacity to speak and listen in order to welcome the many voices and continuously renegotiate the paths of development for the Amazon region. That is this network’s ambition that is just beginning.

About this document

The purpose of this document is, based on a macro approach, to consider learnings and to offer a synthesis of the contents and proposals captured in the interactions of the members of the Concertation network from its origin. The content was developed based on:

- Dialogues between Concertation members, in particular in plenary meetings and webinars, to debate the different types of knowledge and action proposals for the Amazon.
- Debates and proposals arising from the Concertation Working Groups.
- Initiatives and proposals of development plans for the Brazilian Amazon and the Pan-Amazon region based on the systematization and/or production of knowledge and/or formulation of proposals for concrete actions (public policies and private initiatives), examples being:

Amazônia do Futuro - Fundação Getulio Vargas (2021)

Plano de Recuperação Verde (Green Recovery Plan) - Consórcio Interestadual da Amazônia Legal (2021)

Amazônia Plan 21/22 - Conselho Nacional da Amazônia Legal (2021)

Projeto Amazônia 2030 - Instituto do Homem e do Meio Ambiente da Amazônia (Imazon), Centro de Empreendedorismo da Amazônia, Climate Policy Initiative (CPI) and the Economics Department, PUC-Rio (2021)

Rethinking the Amazon Initiative - Chatham House (2021)

The Amazon We Want - Science Panel for the Amazon (2021)

Amazônia Agora State Plan - State of Pará (2020)

Other planning and development policy initiatives were proposed previously, an example being the **Plano de Ação para Prevenção e Controle do Desmatamento na Amazônia Legal - PPCDAm** (Legal Amazon Deforestation Prevention and Control Action Plan) - Ministry of the Environment (2004) and the **Plano Amazônia Sustentável** (Sustainable Amazon Plan) (2008).

- Consultations prior to the public disclosure of the structure and content of this document. Bilateral meetings were held in small groups, as well as a broader debate about the document in the plenary meeting held with the entire Concertation network on September 13, 2021.

Thanks to

Adalberto Val
 Adalberto (Beto) Veríssimo
 Adnan Demachki
 Adriana Moreira
 Adriana Ramos
 Aldo Polastre
 Alexandra Moreira López
 Alexandre Prado
 Amanda Schutze
 Ana Alice Biedzicki
 Ana Carolina Avzaradel
 Szklo
 Ana Carolina Fiorini
 Ana Carvalhido
 Ana Cristina Barros
 Ana Paula Souza
 Ana Toni
 Ana Tulia De Macedo
 Ana Yang
 Andrea Azevedo
 André Guimarães
 André Nogueira
 Antonio Herman Benjamin
 Armínio Fraga
 Bastiaan Reydon
 Beatriz Narita
 Bia Saldanha
 Brendha Naibert
 Bruno Taitson
 Bruno Varella Miranda
 Cacau Guarnieri
 Caio Magri
 Candido Bracher
 Cândido Pastor
 Carlos Nobre
 Carolina Torres Graça
 Carolina Genin

Celina Xavier de Mendonça
 Cira Moura
 Claudio Pádua
 Daniela Gomes
 Daniela Lerda
 Débora Passos
 Deborah Goldemberg
 Denise Hills
 Dioneia Ferreira
 Denis Minev
 Éber Gonçalves
 Eduardo Goes Neves
 Eduardo Tavares
 Eduardo Viola
 Eliakin Rufino
 Eline Martins
 Elizabeth Farina
 Eloy Terena
 Eryk Rocha
 Estevão Monteiro
 Everton Vargas
 Fabio Cabral
 Felipe Faria
 Felipe Leal
 Fernanda Rennó
 Fernando Nova da Costa
 Bringel
 Flávio Dino
 Flavio Penido
 Floriano Pesaro
 Francisco Gaetani
 Gabriel Lui
 Gabriel Parsani Siqueira
 Gabriela Carneiro da
 Cunha
 Gabriela Savian
 Gen. Carlos Alberto dos Santos Cruz

Gen. José F. Iasbech
 Georgia Pessoa
 Glaucio Neves Fernandez
 Gonzalo Muñoz
 Graziela Silva
 Grazielle Cardoso
 Guilherme Fowler
 Guilherme Leal
 Gustavo Bernardino
 Gustavo Caboco
 Gustavo Morelli
 Helder Barbalho
 Heloisa Griggs
 Hussein Kalout
 Iago Hairon
 Ilona Szabó
 Izabella Teixeira
 Jean-Pierre Ometto
 Joana Rennó
 Joaquim Levy
 João Bernardo de Azevedo
 Bringel
 João Moreira Salles
 João Paulo Ferreira
 Joênia Wapichana
 Johannes van de Ven
 Joice Ferreira
 Jorge Viana
 José Carlos Carvalho
 José Javier Gomez
 José Roberto Marinho
 Julia Sekula
 Juliana Santiago
 Juliano Assunção
 Julie Dorrico
 Karen de Souza
 Karen Oliveira

Karina Simão
 Katia Abreu
 Laura Carvalho
 Laura Waisbich
 Leticia Osório
 Lilia Schwarcz
 Liz Davidson
 Luana Maia
 Luciana Villa Nova
 Luis Roberto Barroso
 Luiza Raj
 Marcela Bonfim
 Marcello Brito
 Marcelo Behar
 Marcia Chame
 Marcio Astrini
 Márcio Pereira
 Marcio Santilli
 Marcos Da-Ré
 Mariana Donatelli
 Marina Esteves
 Marina Grossi
 Marina Martins Ferro
 Mariano Cenamo
 Maritta Koch-Weser
 Marta DeVito
 Mônica Rezende
 Mônica Sodré
 Nabil Kadri
 Natália Demartino
 Natalie Unterstell
 Nelson Terres Naibert
 Nigel Purvis
 Nigel Topping
 Nurit Bensusan
 Oded Grajew
 Paula Sampaio

Paulo Barreto
 Paulo Bellotti
 Paulo Coutinho
 Paulo Dallari
 Paulo Emílio Andrade
 Paulo Pianez
 Pedro Abramovay
 Pedro Gandolfo Soares
 Pedro Meloni Nassar
 Pedro Passos
 Pedro Villares
 Pedro Wongtschowski
 Peter Andersen
 Philippe Pruffer
 Rachel Bastos
 Rachel Biderman
 Rachel Costa Monteiro
 Rakel Caminha
 Raissa Ferreira
 Raul Jungmann
 Raul Silva T. do Valle
 Rebecca Garcia
 René Beuchle
 Ricardo Abramovay
 Ricardo Daniel Pedroso
 Ricardo Leal
 Ricardo Sennes
 Rinaldo Mancin
 Roberto Klabin
 Rubens Barbosa
 Rui Machado
 Ruy Tone
 Samuel Oliveira
 Sebastião Salgado
 Sérgio Adeodato
 Sergio Andrade
 Sérgio Leitão

Sérgio Luz
 Sérgio Rial
 Simão Jatene
 Sir Partha Dasgupta
 Sônia Gomes
 Tasso Azevedo
 Tatiana Botelho
 Tatiana Fauza
 Tatiana Schor
 Teresa Bracher
 Thomaz Nogueira
 Ticiano Alvares
 Todd Stern
 Tom Shannon
 Valmir Ortega
 Virgilio Viana
 Walter Schalka
 Wilson Brumer

The content presented
 in this document
 does not reflect the
 personal opinion
 or the proposals
 of the individuals
 consulted during
 the development of
 the document

The elaboration and composition of this document was coordinated by the **Amazon Concertation** Executive Secretariat team.

Coordination:

Livia Pagotto
Renata Piazzon
Roberto Waack

Instituto Arapyaú Team:

Alan Rigolo
Rafaela Bergamo
Sabrina Fernandes
Thais Ferraz
Vinicius Elias

Consultants:

Fernanda Rennó
Inaiê Santos
Layla Lambiasi

Instituto Arapyaú Fellows:

Francisco Gaetani
Izabella Teixeira
Marcello Brito

**Portuguese
proofreading**
Mônica Manir

Translation
Raymond Maddock

Graphic design
Bruna Foltran

“In the not very distant future the Amazon valley will be a center of civilization and the breadbasket of the world.”

(Humboldt)

AMAZON
CONCERTATION