

Brazilian Solutions for Planetary Challenges:

**Nominations for
The Earthshot Prize**



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A message from HRH Prince William



The Earthshot Prize was founded because this decade matters. 2030 is a threshold by which future generations will judge us; it is the point at which our actions, or lack of them, will have irrevocably shaped the trajectory of our planet.

I am deeply proud of what The Earthshot Prize has done in its first five years and I'm enormously excited for the next five. Not just for the new Finalists we're welcoming into our network in Rio 2025, but to also see the continued impact of our 60 existing Finalists, and our wider portfolio of solutions. This leadership is moving us towards achieving vital global goals that will improve and secure lives and livelihoods for all of us – goals such as protecting 30% of our land and sea by 2030.

The people behind these solutions are tackling some of the most complex environmental challenges our planet faces. They remind us that ingenuity and leadership know no borders, that bold ideas can come from anywhere and can spark change everywhere.

It is impossible to hear these stories, to see the impact they are already having and not feel altered by their energy and momentum. For me, it is that infinite energy and momentum – that urgent optimism – that has been at the heart of this Prize from the beginning.

And it feels unstoppable.

A handwritten signature in black ink, appearing to read 'William', with a stylized flourish at the end.

HRH Prince William
The Earthshot Prize

The Earthshot Prize and Brazil together for the regeneration of the planet

Renata Piazzon
CEO, Arapyáú Institute

Marcelo Furtado
Head of Sustainability, Itaúsa, and
Executive Director, Itaúsa Institute

The Earthshot Prize, created in 2020 by Prince William, is currently recognised as one of the world's leading environmental awards. Born out of the urgency of tackling the climate crisis and ecosystem degradation, the prize was designed with the mission of identifying and supporting ambitious innovations capable of restoring the planet's health over the course of this decade.

The name Earthshot alludes to Moonshot, the 1960s space programme that took humankind to the Moon. Common to both movements is a sense of urgency in the face of a great challenge for humanity – yesterday, the space race; today, the climate emergency; and the possibility of rekindling hope for the future, a feeling overshadowed both during the Cold War and today. Coincidentally, during that same period, the famous 1968 photo *Earthrise*, showing Earth as seen from space for the first time, became an icon for those who believe in innovation, technology, nature, and the potential of the human race.

Every year, the Prize identifies and champions innovative solutions across five dimensions: protecting and restoring nature, cleaning the air, reviving the oceans, building a waste-free world, and tackling climate change. The awarded organisations receive not only financial resources, but also international visibility, partnership networks, and the chance to see their solutions replicated around the world. Throughout its history, the prize has backed projects ranging from cutting-edge carbon capture technologies to traditional practices of indigenous communities that teach new ways of coexistence between society and nature.

Brazil, given its territorial and socio-environmental relevance, could not be left out of this initiative. The country is home to the largest tropical forest on the planet, with unparalleled biodiversity and a cultural wealth shaped by the presence of indigenous peoples and traditional communities. In other words, we have a fertile ground to foster ancestral knowledge and cutting-edge science with job and income generation, thus ensuring the promotion of an economy that is positive for the climate, nature, and people.

The Brazilian initiatives presented to the Earthshot Prize demonstrate that tackling the climate crisis is not an abstract agenda. On the contrary, they show that many solutions are rooted in territories and ways of life, pointing to concrete pathways for the future. Such robust context of solutions explains the choice of the Museum of Tomorrow, in Rio de Janeiro as the stage for the 2025 Earthshot Prize ceremony.

The Arapyaú and Itaúsa institutes have been positioning themselves as active voices in the development of Brazilian solutions to local, regional, and global challenges. This publication builds on a journey that began with the Brazil's Climate and Nature Solutions report, produced in partnership with Página22, which mapped national initiatives for COP30 in the sectors of Agriculture and Livestock, Forests, Energy, Mining, Carbon, and Circular Economy. Now, in partnership with the Earthshot Prize, this movement gains fresh momentum and international reach, showcasing to the world that Brazil offers innovative responses that can be scaled globally.

The dialogue between the Earthshot Prize, Arapyaú, and the Itaúsa institute creates the opportunity to place Brazilian projects and organisations on a global stage. It is the meeting of organisations committed to mobilising entrepreneurs and resources. On one side, an international initiative of great symbolic force, mobilising attention and resources for transformative solutions. On the other, the creative energy of Brazilian communities, organisations, and entrepreneurs who, from within their territories, are developing ideas to regenerate nature, promote socio-environmental justice, and build new economies, among other solutions.

Such convergence bolsters the notion that Brazil can play an important role in the climate transition, not only because of its ecological importance, but also due to the diversity of solutions that flourish here.

In this publication, we present a selection of Brazilian initiatives that have already been finalists in past editions of the Earthshot Prize. These are stories that cover many fronts: from combating fires in the Pantanal to restoring the Cerrado; from innovating sustainable value chains to using

technology to map land-use changes; from the power of traditional knowledge of forest peoples to the creation of new financial tools for environmental protection. Many of the initiatives featured can be understood as Nature-Based Solutions (NbS), actions that draw on the regenerative potential of ecosystems to address social and environmental challenges.

More than a record of Brazilian experiences, this launch is an invitation to action. By learning about these initiatives, we realise that the future is not pre-determined. It is being woven now by people and organisations who believe in a restored and resilient planet.

By recognising and amplifying these solutions, the Earthshot Prize reinforces that there is still time to act, and its partnership with Arapyaú and the Itaúsa institute signals that Brazil is at the heart of this transformation, thus helping to reignite Moonshot's spirit of collective mobilisation, for a common, and now vital, purpose.

A look at solutions from Brazil

Felipe Villela

**Brazil Director of
The Earthshot Prize**

Livia Pagotto

**Institutional Director of
the Arapyaú Institute**

The 26 solutions gathered in this publication showcase diverse experiences that respond, in innovative and interconnected ways, to the challenges of our time. They emerge from the action of inspiring agents who transform the relationship between nature and climate into concrete practices, showing that it is possible to face contemporary complexity with creativity, collaboration, and a deep sense of belonging to the territory.

These initiatives reveal how different paths meet and bolster one another: technology that enhances community farming, traditional knowledge that joins forces with science, ecological restoration that generates economic opportunities, and biodiversity conservation that translates into strategies for local development. Each example carries the power to inspire new perspectives and multiply solutions, reminding us that, in Brazil, innovation is born not only in the laboratory, but also in the fields and forests.

More than isolated solutions, what emerges is a living network of interdependent and collaborative practices that transcend institutional and cultural boundaries, revealing the strength of collective action in the face of the climate emergency. The focus of the present curation lies primarily on civil society initiatives, which are essential for a socially just climate transition, but it also includes projects from the private sector and public authorities, often in dialogue with local movements. This mosaic highlights Brazil's creative strength, whose cultural and ecological diversity is both a challenge and an advantage for the planet's future.

This is not an official list of the Earthshot Prize Nominees, nor is it a ranking or pre-selection of Finalists, it is an independent curation of Brazilian initiatives that have already been part of the nomination process and were included in this document due to their relevance and impact for climate transition and for tackling socio-environmental issues. We invite you, dear readers, to browse through these pages with an open mind and a hopeful heart. May this publication be an invitation to join a collective movement of transformation, in which Brazil reveals its creative strength, its capacity for collaboration, and its responsibility in caring for the Earth.

Have a good reading!





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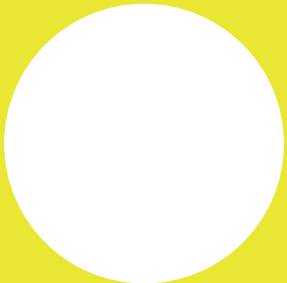
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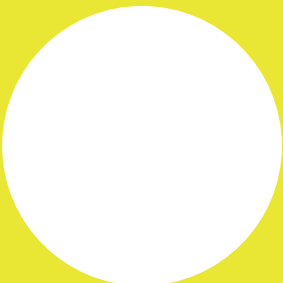






TFFF, a financial innovation to protect tropical forests

- 
- **Solution**
Tropical Forests Forever Facility
(TFFF) – 2025 Earthshot Prize Finalist

- 
- **Organisation**
The Brazilian government with the
support of other countries and
local and indigenous communities

The Tropical Forests Forever Facility (TFFF) is a Brazilian initiative first presented at COP28 and set to be formalized at COP30 in Belém, Pará. Its mission is to mobilise permanent funding, from both public and private sources, in order to support countries with tropical forests in conserving and restoring their ecosystems. The proposal stands out for introducing long-term, results-based transfers, with a particular focus on indigenous peoples and local communities. While aligned with the three Rio Conventions (UNFCCC, CBD, and UNCCD), The TFFF is not established as an official financial mechanism of these structures, thus remaining an autonomous proposal for global cooperation.

The urgency is clear: deforestation continues to advance, driven by production chains that still find short-term profit in destructive practices rather than in the long-term preservation of forests. In this scenario, the TFFF proposes an innovative response by reversing the economic logic: making it more advantageous to protect forests than to destroy them. With an estimated endowment of US\$125 billion, the largest mechanism ever designed to finance forests, the TFFF aims to establish a payment system that generates income per hectare conserved, offering tangible incentives for governments, communities, and other stakeholders to maintain and expand tropical forest cover.

The institutional design of the TFFF comprises two complementary entities. The Tropical Forest Investment Fund (TFIF) will be responsible for raising and investing US\$125 billion, therefore generating financial returns. The TFIF's profits, after operational costs and reserves, will be transferred to the TFFF, which will make performance-based payments to forest countries that conserve or expand their tropical and subtropical moist forest cover.

The Tropical Forests Forever mechanism will oversee remuneration, setting eligibility criteria, monitoring methodologies, and rules to spend the resources. A dedicated Secretariat will coordinate both entities. In order to operationalise the TFFF, an Intermediate Financial Facility (IFF) will be established under the legal framework of a multilateral development bank. During a UN-held event in September 2025, the World Bank announced that

it would serve as both fiduciary administrator and interim host of the TFFF Secretariat, ensuring transparency, integrity, and international governance.

The TFFF emerges in a context marked by deep structural challenges in forest financing. In addition to the chronic shortage of resources, access to international funds is often hindered by complex procedures, stringent conditional requirements, fragmented approaches, and delays in disbursement. These barriers undermine the timely mobilisation of investments and limit the capacity to implement urgent actions against deforestation, making it even more difficult to induce positive large-scale transformation.

Carbon markets, meanwhile, hold potential but remain uncertain in scale and scope. They tend to focus narrowly on reduced deforestation or restoration of degraded areas. This logic does little to recognise and value countries that maintain intact forests, nor does it consider the multiple ecosystem services tropical forests provide beyond carbon storage.

The time to act is now. In preparation for COP30, Brazil has been engaging governments, civil society, investors, and representatives of local communities around the proposal. The next decisive step is to secure the first commitments, US\$25 billion in sovereign investments (with the Brazilian government already pledging US\$1 billion), capable of operationalising TFFF and ushering in a new era of economic and social valuation of tropical forests, thereby benefiting countries with forests, the peoples who protect them, and humanity as a whole.

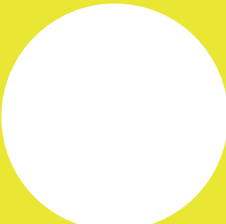
What the TFFF will (✓) and will not do (✗)

- ✓ **Help** sovereign investors and tropical forest countries contribute to global goals under the UNFCCC, CBD, and UNCCD.
- ✓ **Link** measurable performance in maintaining standing tropical forests to annual performance-based payments.
- ✓ **Use** satellite data to assess performance, based on pre-defined, transparent criteria.
- ✓ **Complement** other existing global financial mechanisms for forests, including REDD+.
- ✓ **Act** as a significant new investor in debt issued by Emerging Markets and developing economies.
- ✓ **Enable** Tropical Forest Countries (TFCs) to use payments to support national forest programmes, with funds treated as non-reimbursable grants.
- ✓ **Provide** financial recognition to forest stewards, particularly Indigenous Peoples and Local Communities, for their essential role in protecting forests.
- ✗ **Generate or issue** carbon or biodiversity credits.
- ✗ **Finance** individual projects directly.
- ✗ **Dictate** how TFCs will use the funds beyond requiring a minimum 20% allocation to IPLCs.
- ✗ **Replace** other existing forest finance initiatives, including REDD+.
- ✗ **Compete** with existing grant programmes. Rather, it will work alongside them.
- ✗ **Create** any financial obligations for TFCs, even in the event of underperformance of the TFIF or fluctuation in payment levels.

Source — <https://tfff.earth/wp-content/uploads/2025/08/Concept-Note-3.0-PT.pdf>



Restoring the future



- **Solution**

Corredores de Vida (Corridors for Life), a project that aims to connect fragments of the Atlantic Forest by creating ecological corridors to restore biodiversity and strengthen local communities

- **Organisation**

Institute for Ecological Research (Ipê), a non-profit organisation

The Institute for Ecological Research (Ipê) leads the Corridors for Life project in the Pontal do Paranapanema region, in the western part of São Paulo state. The initiative seeks to conserve biodiversity and strengthen communities in the face of climate change. The proposal is to restore the Atlantic Forest vegetation across large areas of degraded private and public lands by connecting forest fragments to conservation units. Implemented 25 years ago, the project has already surpassed 10 million trees planted.

The strategy allows wildlife to return to the region by using the restored corridors and encourages changes in land-use practices among small and large farmers in fragmented areas. The project also seeks to generate direct benefits for rural communities by improving their livelihoods, as well as for investors, who receive high-quality carbon offsets. Additionally, it shares its experiences and lessons learned through national and international networks, thus expanding its reach beyond the direct intervention area.

Initially, the priority areas for restoration were seven municipalities: Euclides da Cunha Paulista, Marabá Paulista, Mirante do Paranapanema, Presidente Epitácio, Rosana, Sandovalina, and Teodoro Sampaio. In 2021, the map was expanded so as to include other cities with the goal of generating carbon credits, in partnership with Ambipar, a company specialising in environmental solutions. Out of a total of 260,000 hectares of environmental liabilities in the Pontal region, the target is to restore 75,000 hectares by 2041, with the expectation of removing 29 million tons of CO₂e (carbon dioxide equivalent) in 50 years.

Among the advancements are the creation of income-generating alternatives through the sustainable use of the forest and restoration, the implementation of rehabilitation mechanisms that benefit local settlers, the conservation of black lion tamarins – an emblematic species of the Atlantic Forest – raising awareness across different sectors about the value of this biome, and the development of landscape management systems capable of balancing socio-economic gains with the maintenance of ecosystem services. The project also stands out for the empowerment of communities, with participatory processes that strengthen local governance and foster sustainable development.

Despite the significant results, scaling up forest restoration in Brazil remains a critical and challenging task. The initial costs of planting, maintenance, and monitoring are high, while public, private, and international funding remains either insufficient or poorly allocated. Many landowners still perceive greater short-term benefits in agriculture or livestock than in restoration, which increases opportunity costs.

Another major obstacle lies in land-related conflicts and land tenure insecurity. Unclear land rights discourage long-term investments, while the expansion of agricultural frontiers reduces the availability of areas for forest recovery. Added to this is the fragility of governance: although Brazil has legal frameworks such as the Forest Code, law enforcement is insufficient in many regions, and the lack of coordination among government, NGOs, and the private sector undermines the efficiency of restoration efforts.

Technical challenges also cap progress. The scarcity of high-quality seeds and seedlings of native species hinders large-scale restoration, while many landowners and technicians still lack experience in appropriate reforestation practices. Social and cultural barriers are also part of the equation. Many local communities remain unaware of the ecological and economic benefits of restoration, and attachment to traditional practices, such as extensive cattle ranching, often spawns resistance to change.

Ipê demonstrates that, with integrated solutions, a project can become viable and serve as a replicable model in different regions of Brazil and around the world. By combining science, public policy, community engagement, and economic incentives, the initiative has created the largest planted forest corridor in the Atlantic Forest: 12 km of restored landscape connecting Morro do Diabo State Park to the Black Lion Tamarin Ecological Station in the Pontal do Paranapanema region. Restoring the Atlantic Forest is, in a way, also about restoring trust in the future.



Corridors for Life in Numbers



12 KM of corridors
connecting
Conservation Units



**75 THOUSAND
HECTARES** to be
restored by 2041



10+ MILLION
native trees
planted



**5,1 THOUSAND
HECTARES** of
Atlantic Forest
restored



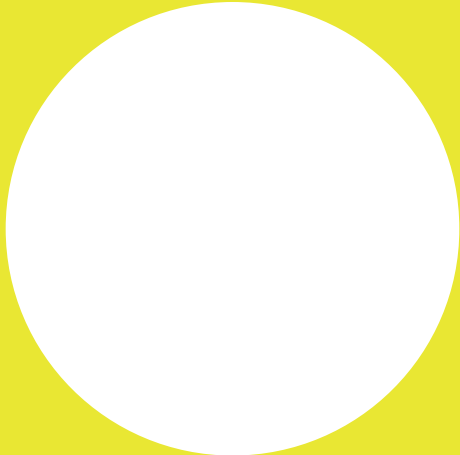
30 MUNICIPALITIES
benefited

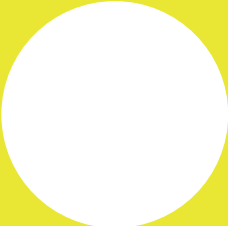


29 MILLION TONS
of CO₂e expected
to be removed over
50 years



A hug against forest fires

- 
- **Solution**
Embrace the Forest

- 
- **Organisation**
umgrauemeio, a private
for-profit organisation

The umgrauemeio initiative was founded in 2016 to address the challenges of agricultural and forest fires through technology and community engagement. Its main project, *Abrace a Floresta* (Embrace the Forest), emerged after the devastating 2020 fires in the Pantanal wetlands of Mato Grosso do Sul, when areas such as Serra do Amolar saw up to 90% of their territory burn.

From then on, the initiative has grown into a multi-sector movement combining a technology platform, permanent fire brigades, and partnerships with institutions such as the *Instituto Homem Pantaneiro* (Pantanal's Man Institute), the Social Service of Commerce (Sesc) Pantanal, and Ibama's (Institute of the Environment and Renewable Natural Resources) National Centre for the Prevention and Combating of Forest Fires (Prevfogo), in addition to the state government of Mato Grosso. This coordination ensures both legitimacy and effectiveness by connecting public policies, applied science, and territorial action.

Brazil is facing a severe crisis: in the Pantanal alone, 59% of the biome has already burnt at least once since 1985, and 73% of these areas have burnt two or more times. In 2024, the area burnt during its first semester increased by 529% compared to the historical average, reaching 468,000 hectares. National response efforts still rely heavily on satellite monitoring – though images often arrive too late to stop a fire in its early stages – and on temporary brigades, which limits their effectiveness.

Within this context, Embrace the Forest operates continuously by covering millions of hectares with real-time monitoring and permanent brigades, in addition to integrating satellite data with field-validated reports. Currently, umgrauemeio monitors 20 million hectares, 10 million of which are in reserves and environmental projects. By 2025, the initiative had expanded from three to more than ten active fronts, protecting territories across different biomes and directly supporting *ribeirinho* (riparian), indigenous, and traditional communities.

One of the pillars of its work is the Pantera Platform, an integrated tool for the management of forest and agricultural fires structured into four modules:

prevention, which performs risk analysis and compiles climate data; detection, using real-time Artificial Intelligence with cameras and satellites; response, which includes an app for fire brigades, fleet tracking, 3D maps, and fire propagation simulation; and impact analysis, which measures burnt areas and CO₂ emissions. Currently established in the Pantanal and the Amazon, Pantera is expanding its reach to new states and communities to establish itself as a benchmark tool.

The main challenges faced by the initiative include severe droughts intensified by climate change, limited infrastructure in remote areas, and the need for stronger interinstitutional coordination. To tackle these issues, umgrauemeio invests in real-time technology, the strengthening of permanent brigades, the development of joint protocols with official agencies, and the engagement of communities, businesses, and governments.

The initiative's scalability strategy lies on three pillars: territorial, expanding into the Amazon, Cerrado, and Caatinga biomes; technological, by integrating new modules such as drones, sensors, and advanced risk and impact analyses; and governance, through a replicable model that connects technology, community brigades, and institutional partners. The model continues to grow, with strong expansion in monitored areas and supported communities, consolidating umgrauemeio as a national and international leader in integrated fire management.

The main causes of forest fires in Brazil are human-induced



Human Causes

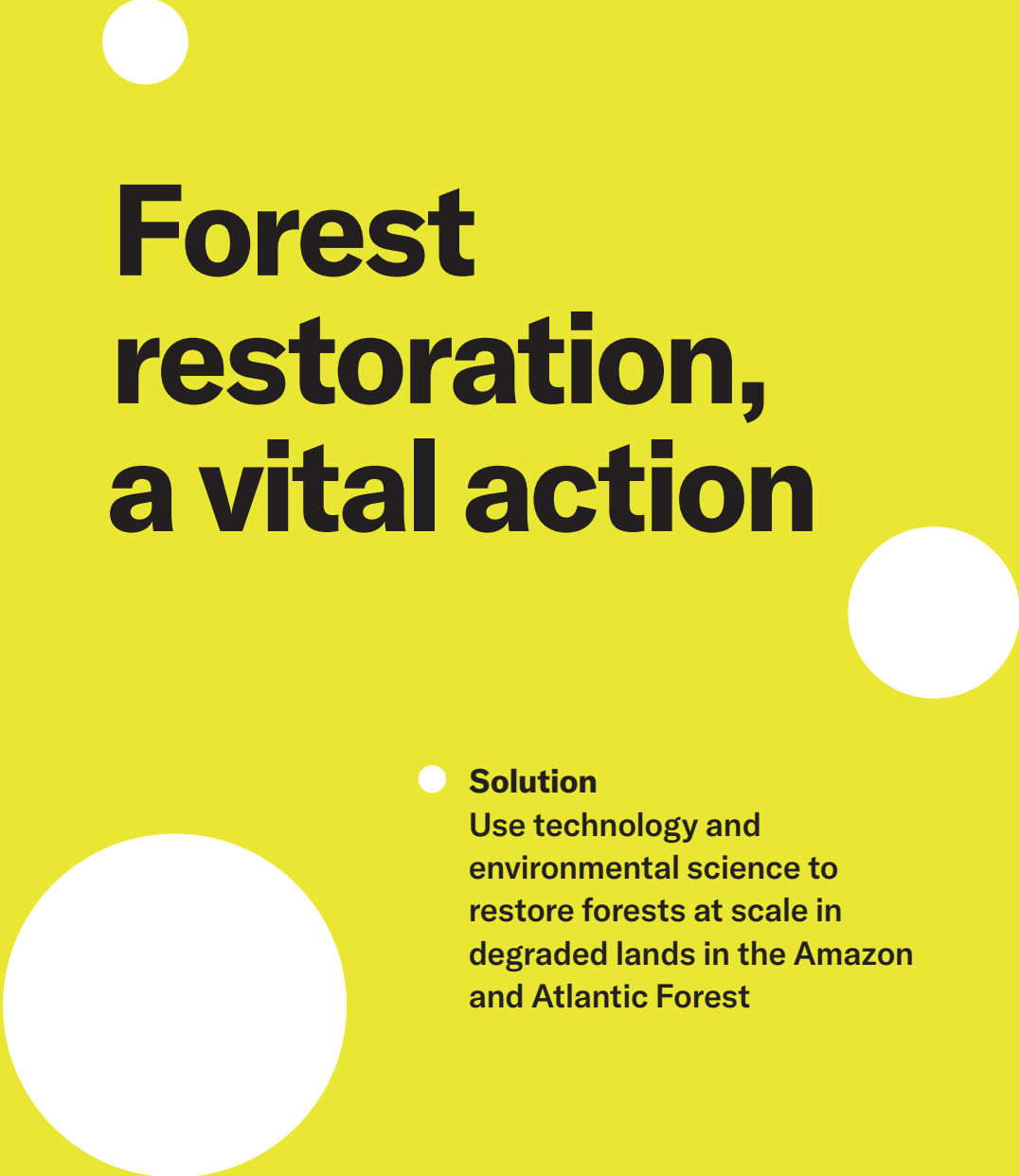
- Use of fire for land clearing
- Deforestation and illegal mining
- Burning trash
- Sky lanterns
- Arson
- Infrastructure and forestry activities

Natural Causes

- Lightning

Factors that aggravate fires

- Prolonged droughts
- Increase in the amount of flammable material



Forest restoration, a vital action

- **Solution**

Use technology and environmental science to restore forests at scale in degraded lands in the Amazon and Atlantic Forest

- **Organisation**

re.green, a private company –
2025 Earthshot Prize Finalist

Forest restoration is not merely an environmental agenda, but an essential condition for the planet's climate stability. It is now clear that certain species will only survive if untouched forest pockets are recovered, and that the loss of trees in Brazil has already altered rainfall patterns, with direct impacts on human health and agriculture. Restoring at scale, however, requires capital, effective management, a business plan capable of convincing landowners, and collaboration from communities living in and around restoration areas. Bringing all these conditions together is re.green's job.

The company combines data intelligence, environmental science, high-integrity carbon credits, and accurate analytics to identify, within seconds, the most viable degraded areas for restoration. Its methodology is aligned with the leading certification standards in the market and is expected to accelerate the recovery of millions of hectares of native forest. Awards and international recognition could boost the method used by the company, helping, for instance, to bring together key stakeholders (local communities, investors, carbon buyers, and policymakers) around the urgency of restoring degraded ecosystems through sound science, new technologies, and large-scale carbon sequestration agreements.

Through restoration, it becomes possible to address two of the most pressing environmental challenges of our time: climate change and biodiversity loss. In Brazil, the degradation of the Amazon and the Atlantic Forest contributes significantly to global carbon emissions and threatens countless species. At the same time, around 30 million hectares of degraded pastureland, once cleared for cattle raising, represent a concrete opportunity for restoration. The company's proposal is to return forests to these lands, thereby capturing carbon, revitalising ecosystems, and restoring habitats.

The path, however, is complex. From a technical standpoint, restoring at scale requires cutting-edge technology to plan, monitor, and maintain projects. To tackle this, re.green invests in satellite imagery, remote sensing, and artificial intelligence, while establishing partnerships with research institutions to co-develop accessible solutions. From a cultural standpoint, the perception persists that deforestation remains the most profitable use

of land, which makes community and landowner engagement essential to promoting sustainable management practices and transforming the relationship with the forest.

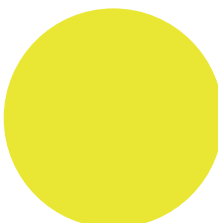
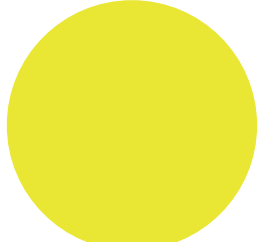
There are also regulatory hurdles: the lack of clear incentives and robust policies limits the advancement of large-scale restoration. re.green's response is to work alongside governments and civil society organisations to strengthen regulatory frameworks, stimulate the carbon market, and develop instruments such as cap-and-trade systems. They also advocate for interoperability between different markets and jurisdictions by ensuring that high-integrity credits can access both voluntary and regulated international markets. This alignment increases liquidity, generates predictability for investors, and accelerates the integration of restoration as a large-scale climate solution.

From the financial standpoint, high upfront costs and long project maturation periods still hamper access to credit. To overcome such barrier, the strategy entails combining public and private capital through blended finance models, as well as mobilising impact investors and development finance institutions (DFIs). Innovative instruments, such as green bonds, risk guarantees, and results-based financing can also be included on the agenda, helping to align financial returns with socio-environmental impact. These mechanisms help reduce risk perception, create predictability, and accelerate the flow of capital necessary to unlock large-scale restoration.

For the company, restoring Brazil's forests is not only a way to address the climate crisis, but also an opportunity to redesign land use in the country.

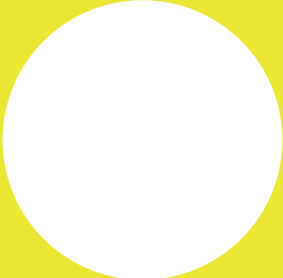


The restoration step-by-step

- 
- 1** Select degraded lands through spatial analysis
 - 2** Apply models based on native and regional species
 - 3** Engage and train local communities, ensuring income generation
 - 4** Monitor forest recovery
 - 5** Trade high-quality carbon credits and forest assets
 - 6** Enable scaling
- 



Ecotourism that regenerates wildlife



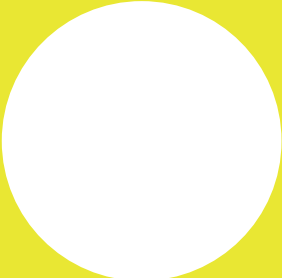
Solution

Create and conserve ecological corridors in regions of high biodiversity across the Pantanal, Amazon, Atlantic Forest, and Cerrado biomes, and, through ecotourism, protect wild animals while promoting sustainable development for local communities



Organisation

Onçafari Association, a non-profit organisation



During a visit to the Pantanal, former Formula 1 driver Mário Haberfeld realised that wildlife observation ecotourism could become a powerful ally in the conservation of the biome and, in particular, the region's big cats. From this idea, Onçafari was born in 2011, an organisation that has since become a national and international benchmark in ecotourism as a model for wildlife conservation, focusing on jaguars and maned wolves, which also encompasses forest regeneration as well as attention to local communities.

Over the years, the project has expanded its activities to other Brazilian biomes – the Amazon, the Cerrado, and the Atlantic Forest. In these regions, increasing deforestation and the expansion of unsustainable agricultural practices have put species and entire ecosystems at risk. Brazil, home to more than 20% of the planet's biodiversity and playing a vital role in global climate stability, has been facing a critical situation.

The Cerrado, the most threatened biome in the country, has lost 50% of its native vegetation in just four decades, and less than 3% of it is under protection. The Pantanal has been devastated by fires and continues to face threats caused by worsening droughts. In the so-called Deforestation Arc of the Amazon, the agricultural frontier continues to advance towards the forest. There, along the São Benedito River in Pará, Onçafari has established the *Refúgio de Vida Silvestre* (Wildlife Refuge), which protects 150 kilometers of its riverbanks.

Given this scenario, Onçafari's integrated approach seeks to promote coexistence and create a scalable conservation model. One of its main fronts is the reintroduction of rescued animals into the wild through a process called "habituation." This method, imported from South Africa, consists of gradually accustoming wild predators to human presence or to stimuli previously perceived as threats, such as passing vehicles, without implying domestication.

The goal of habituation is to enable wild animals to be safely observed in their natural habitats, thus allowing for both the advancement of scientific research and the development of wildlife-based ecotourism. The presence of these animals therefore becomes a driver of income and a concrete incentive for their preservation.

Onçafari's core areas of work include: the habituation of jaguars and other animals for observation tourism, transforming predators into symbols of conservation and sources of sustainable income for local communities; scientific research in partnership with universities and institutes; environmental education and community engagement; and the creation and management of ecological corridors to connect fragmented areas. In its social approach, Onçafari seeks to value the leadership of local communities in the management of their territories, provided that it is aligned with biodiversity conservation.

The expansion of Onçafari's conservation model currently faces three major barriers. In terms of financing, consolidating the project requires significant resources for land acquisition, monitoring, and long-term maintenance. Limited access to continuous funding can hinder the project's expansion. To mitigate this challenge, the organisation intends to diversify its sources of funding, including subsidies, corporate partnerships, and ecotourism revenue; develop sustainable mechanisms such as carbon credits; create endowment funds; and strengthen donor networks in Brazil, the United States, and Europe.

The bureaucracy involved in creating protected areas and obtaining approvals for conservation initiatives is another obstacle that can delay projects. To prevent such thing from happening, Onçafari seeks to work in partnership with government agencies and legal experts in order to navigate complex regulatory frameworks. In addition, it intends to intensify advocacy efforts aimed at shaping public policies that streamline processes and strengthen the protection of critical habitats.

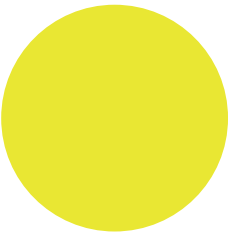
Another challenge relates to cultural resistance. Local communities and rural producers may resist conservation projects if they perceive them as restrictive to their livelihoods. The solution adopted is community engagement through education, transparent communication, and inclusive economic opportunities, as well as the promotion of ecotourism and sustainable production practices.



Onçafari in numbers



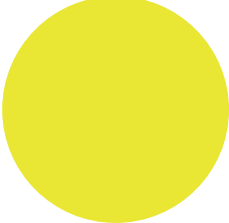
**MORE
THAN 3,400**
jaguar sightings



100% of guests at the Caiman Pantanal Lodge have spotted at least one jaguar during their stays over the past two years



There has been a **580%** increase in occupancy at the Caiman Ecological Refuge (in the Pantanal) since Onçafari began in 2011





An alliance for the Atlantic Forest

- **Solution**

Restore 15 million hectares of the Atlantic Forest by 2050

- **Organisation**

Pacto pela Restauração da Mata Atlântica (Pact for the Restoration of the Atlantic Forest), a movement that brings together more than 360 stakeholders, including public and private institutions, governments, companies, scientists, and landowners

For the past 16 years, the Pact for the Restoration of the Atlantic Forest has shown that large-scale forest restoration is possible. Born as an innovative coalition, the Pact today unites more than 360 organisations, including governments, businesses, scientists, civil society groups, and landowners, around a shared goal: to bring life back to one of the world's most biodiverse and threatened biomes.

The goal is ambitious. By 2050, the group intends to restore 15 million hectares of the Atlantic Forest, which amounts to around 30% of the biome. This effort could sequester more than 4.5 gigatons of carbon, thus making a significant contribution to climate change mitigation while directly benefiting the 170 million people who live in the region. So far, members of the Pact have already restored 140,000 hectares of degraded land (<https://pacto.geobit.com.br/>). To reach millions of hectares, however, the initiative must go beyond tree planting. Its strategy integrates science, innovation, and social engagement to promote holistic restoration.

In order to rebuild habitats, conserve biodiversity, improve soil health and water quality, and sequester atmospheric carbon, the approach combines native species planting, sustainable agriculture, and community engagement in landscape management.

The restoration of the Atlantic Forest is expected to impact millions of people, as the biome plays a central role in water production for Brazil's major urban centres. Reducing forest fires, ever more frequent and destructive in Brazil, is also a key priority for the Pact and its members, as better fire management is essential to the biome's recovery.

The Pact's impact also extends globally. The initiative contributes directly to Brazil's Paris Agreement target of restoring 12 million hectares. Its actions not only support national goals but also provide a scalable, replicable model for other biomes and countries.

The experience gained so far has inspired similar initiatives in Brazil and around the world. Currently, there are similar collectives in all five other

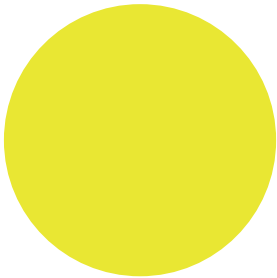
Brazilian biomes as well as discussions on creating a comparable alliance in Europe aimed at supporting the implementation of the European Nature Restoration Law.

Despite the progress, the Pact still faces significant barriers limiting its actions. From a technical standpoint, restoring an ecosystem as diverse and degraded as the Atlantic Forest (the most degraded biome in Brazil) requires specialised knowledge and sophisticated monitoring systems. To overcome these challenges, the Pact invests in cutting-edge technology and builds partnerships with research institutions.

Financially, large-scale forest restoration demands substantial resources. The Pact proposes a blended financing model, combining awards, donations, and other mechanisms, including Payments for Environmental Services (PSA). In this model, the organisation would act as a platform that empowers members working directly in the field, attracts new partners, and expands the scope of action. Functioning as a facilitating agency for restoration, it would channel funds to local institutions and directly finance on-the-ground efforts, supporting the local communities involved. By empowering its hundreds of members, the Pact expects to engage more rural producers, who will, in turn, restore more of their degraded lands.

Culturally, engaging more landowners creates the opportunity to approach land management in an integrated way, considering both agricultural production and ecosystem conservation. To foster landowner participation and interest, it is key for the Pact to expand its membership base and establish new Regional Units, strengthening its presence across the 17 Brazilian states where the biome occurs.

The Pact for the Restoration of the Atlantic Forest proves that it is possible to turn global environmental challenges into opportunities for sustainable development. After all, restoring forests is not only about preserving nature, but also securing water, a stable climate, improved quality of life, and new economic opportunities for all.

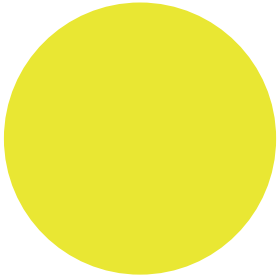


Geospatial platform

A platform has been developed to serve as a central hub for organising, managing, and sharing spatial and registration data from members of the Pact for the Restoration of the Atlantic Forest. The information provided enables the analysis of rural properties to guide future fieldwork and support territorial planning for conservation and native vegetation restoration targets.

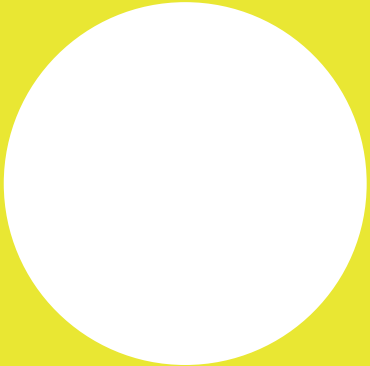


See — <https://pacto.geobit.com.br>





Cerrado: I'm still here

- 
- **Solution**
Save the Cerrado, one of the world's most important yet overlooked biomes

- 
- **Organisation**
Instituto Cerrados (Cerrados Institute), a non-profit organisation

The prevailing model of land use in the Cerrado, focused on exploiting low value-added natural resources for export, has imposed severe losses on the biome. Expanding deforestation and fires undermines essential ecosystem services such as climate regulation, water supply, pollination, and food production. Across much of the region, native vegetation has been replaced by soybean monocultures and brachiaria pastures (an exotic grass), a result of policies that disregarded the opportunity cost of keeping native ecosystems standing.

In response, Instituto Cerrados combats degradation by creating and strengthening protection mechanisms, always seeking broader social participation. Its work ranges from advocating for public policies that hold offenders accountable, to supporting the creation of private reserves, amplifying the visibility of traditional territories, and restoring critical areas that are essential to the maintenance of water sources.

Over the past four decades, more than 43% of the Cerrado has been affected by forest fires. To address this challenge, the Institute has developed the Suindara app, which captures satellite data and sends alerts directly to firefighters. Today, more than six million hectares are monitored, with support of dozens of fire brigades that receive equipment and training.

With over ten years of experience, Instituto Cerrados has become a leader in biome protection and in consolidating protected, sustainable, and productive territories. Its work combines technological innovation, community engagement, and public policy advocacy to tackle the multiple challenges facing one of the country's most threatened ecosystems.

A strategic focus of its commitment is engaging landowners, who occupy around 70% of the biome. Meanwhile, traditional often see their territories erased or left unrecognised in official maps. To reverse such reality, the Institute, together with ISPN (Society, Population and Nature Institute), Rede Cerrado (Cerrado Network), and IPAM (Amazon Environmental Research Institute), developed the application *Tô No Mapa* ("I'm on the map"), a self-mapping tool that has already registered more than 330 communities

in 10 states. Leading this type of mapping effort in Brazil, the organisation is preparing to release an unprecedented survey on the peoples and territories of the Cerrado.

Protecting water resources is also a priority. The biome feeds eight of Brazil's twelve main river basins, yet still remains undervalued in conservation policies. A pioneering study carried out by the Institute has demonstrated the impacts of deforestation and climate change on the flow of Cerrado rivers. Based on this evidence, the organisation collaborates with the Ministry of Environment and Climate Change in developing a public policy that prioritises strategic areas for water security. In this field, it also leads the campaign *Cerrado: Coração das Águas* (Cerrado: Heart of the Waters).

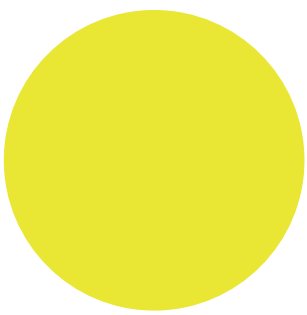
In recent years, Instituto Cerrados has become the leading organisation in the creation of Private Natural Heritage Reserves (RPPNs) in Brazil, having established more than 30 areas and 2,000 protected hectares. It has also coordinated the densest mosaic of reserves in the country, located in Serra dos Pirineus (state of Goiás), in addition to proposing innovative conservation mechanisms such as Conservation Easement Leasing and a new law on Productive Reserves.

Still, the challenges remain significant. A considerable portion of the organisation's efforts is allocated to fundraising, when it could otherwise focus on direct-impact actions. According to its leaders, a permanent fund could allow for the protection of up to one million hectares by 2050. Another obstacle is the difficulty of securing major international partnerships, who still prefer to concentrate on their investments, especially on the Amazon.

There is also a need to establish technological partnerships to improve monitoring tools without raising costs, as well as to strengthen digital communication. Today, the Institute wields strong influence among decision-makers, but acknowledges the need to broaden its presence on social media and become a popular player in defense of the Cerrado.



The Cerrado in numbers



25+ MILLION
people



80+ ethnic
groups



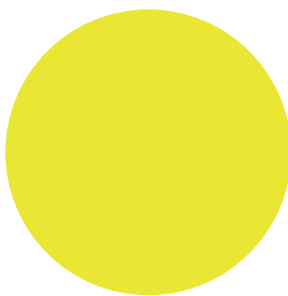
12,000+
plant species

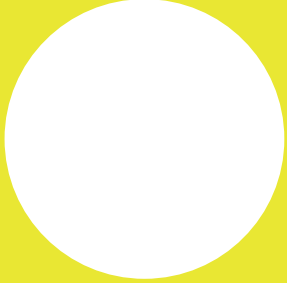


4,000+
endemic plant
species

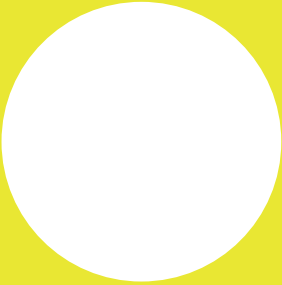


75% of plant
biomass in deep roots





Nature tourism in the largest Atlantic Forest remnant

- 
- **Solution**
The Grande Reserva
Mata Atlântica initiative
(Atlantic Forest Great
Reserve)

- **Organisation**
SPVS (Wildlife Research and
Environmental Education Society),
a non-profit organisation

Launched in 2018, the Atlantic Forest Great Reserve is an innovative, voluntary initiative that brings together over 1,000 players – including representatives from government, the private sector, academia, and civil society organisations – across 60 municipalities in three Brazilian states. It is a collective effort to promote regional development through nature tourism and the appreciation of the region's cultural and historical heritage, within the world's largest preserved remnant of the Atlantic Forest, covering approximately 3 million hectares across southern and southeastern Brazil.

With the goal of positioning the territory as a national and international nature tourism destination, it was necessary to subdivide the area of operation into 18 distinct regions by taking into account their unique features and regional characteristics – known as Portais (Portals). Each Portal has its own main attractions and services, aiming to highlight the cultural richness and traditions specific to each area. In addition, efforts are made to ensure that the local population is part of the transformation process, collaboratively defining all the information included in printed materials and the themes to be addressed in each group's meetings.

The Reserve's efforts are focused on attracting tourists to the region while strengthening local communities and preparing the territory to welcome tourism in a sustainable and responsible manner. To this end, the project offers training programme for entrepreneurs – there are already more than 80 entrepreneurs engaged in sustainable business practices through *Programa Natureza Empreendedora* (Entrepreneurial Nature Programme) and 120 participants in *Programa de Qualificação* (Qualification Programme) – and maintains a dedicated communication team that produces audiovisual and graphic materials to enhance regional visibility.

In order to operationalise an initiative of this magnitude, strong governance mechanisms must be applied to a socially oriented and participatory collective impact approach by establishing clear goals, ensuring transparency, and strengthening cooperation.

The challenges facing the territory are significant! Roughly 70% of Brazil's population lives within the Atlantic Forest biome, which today covers less than 12% of its original extent, with only about 7% of well-preserved forest remaining. Furthermore, several municipalities in the region record some of the lowest Human Development Index (HDI) levels in their respective states and face pressing issues such as the outmigration of young people seeking economic opportunities in large urban centres. The Great Reserve emerged precisely to foster socioeconomic transformation while keeping the forest “standing” by finding in nature tourism and a restorative economy the lever for socio-environmental transformation.

Despite major institutional efforts to promote the initiative, there are several challenges yet to be overcome, including: maintaining engagement within the constantly expanding network; attracting financial investments aligned with the region's conservation potential; gaining recognition at different levels (national and international) as a nature tourism destination; and ensuring that entrepreneurs and communities are trained to deliver high-quality, safe experiences for visitors. To address these hurdles, the initiative invests in solid governance that promotes leadership among its members, strengthens dialogue with governments at multiple levels to co-create sustainable development solutions, and implements joint actions with strategic partners.

The Atlantic Forest Great Reserve has already inspired similar initiatives across Brazil, received prestigious national and international awards, and influenced public policies at different levels. One of the initiatives that was inspired and jointly developed is the chain of responsible tourism networks, connecting with other Brazilian initiatives to share methodologies, exchange experiences, and encourage collaborative engagement in other regions of the country. It has also contributed to the development of climate targets for tourism within the framework of the National Climate Adaptation Plan, enabling the integration of the national nature tourism agenda with innovative strategies developed and strengthened by the initiative. The goal is to expand the collective impact of the model, thus consolidating responsible tourism as a vehicle for development in Brazil.

The Atlantic Forest Great Reserve

66% of the territory
legally protected

2.7 MILLION

hectares of
continuous natural
environments

110+
Conservation
Units

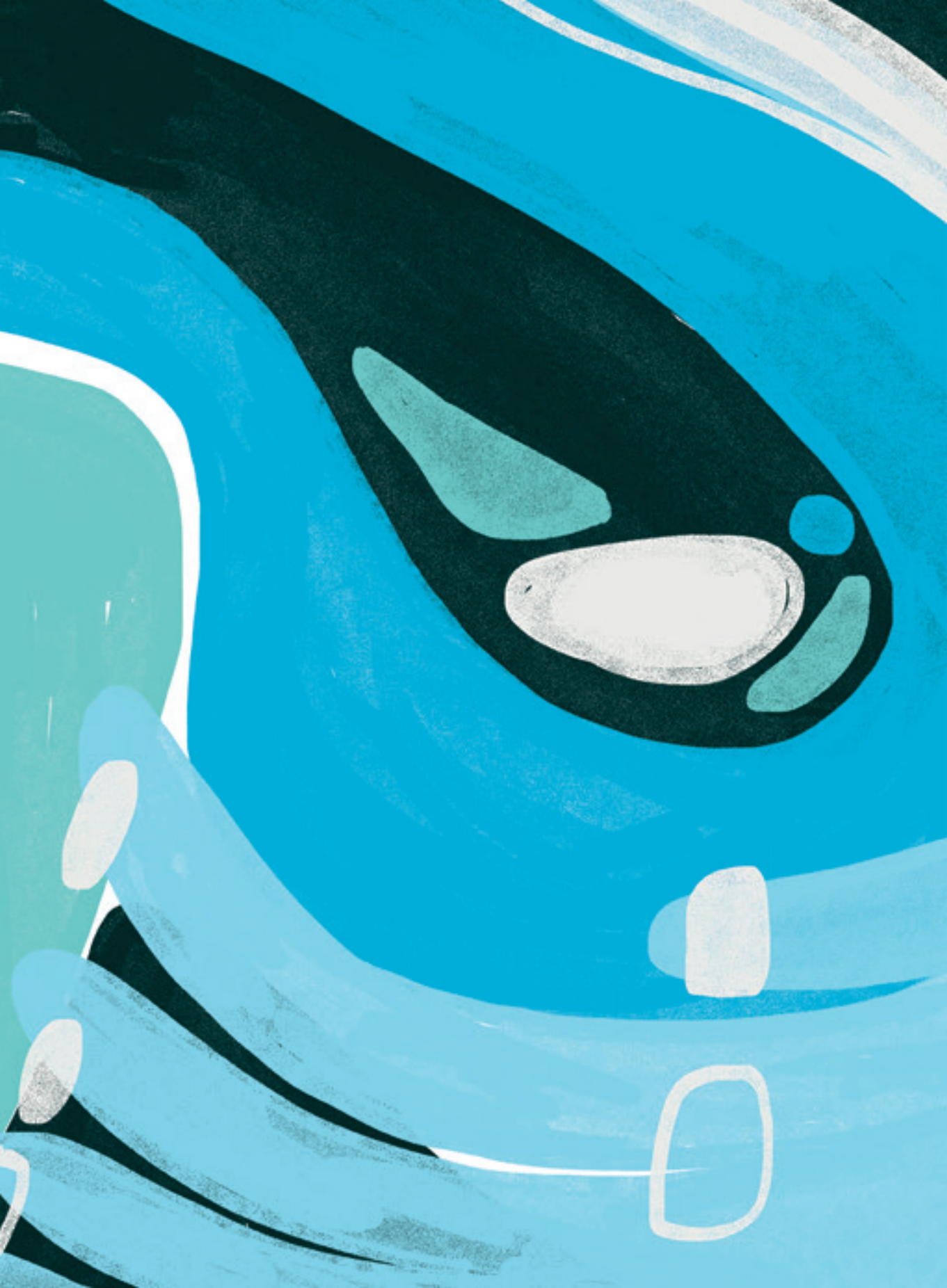
100% of the
world's black-
faced lion tamarin
population

2.2 MILLION

hectares of marine
and coastal
environments

8
historic
cities







Young women seek climate justice

- 
- **Solution**
Empowerment advocacy for
young women in the Global
South to lead climate action

- **Organisation**
EmpoderaClima,
a non-profit organisation
- 

The absence of women in decision-making spaces, despite being among the most affected by extreme climate events, can lead to less ambitious climate solutions in their interest. EmpoderaClima is a youth-led Brazilian initiative created to raise awareness among girls and women in the Global South about the disproportionate impacts of climate change they face, while strengthening women's leadership in climate action. For the organisation, the lack of recognition of the link between climate change and gender inequality results in the exclusion of marginalized groups from climate policy decision-making spaces.

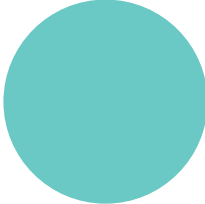
EmpoderaClima, therefore, strives to bring visibility to the gender agenda and highlight the importance of intersectionality in climate policies by connecting young people from the Global South with international debates in high-level forums. This is achieved through the production of multilingual educational materials, available in four languages, and through articulation in partnership with global institutions and networks.

Aside from its international engagement, the initiative runs two projects in Brazil with direct impact on young people. The first is a capacity-building programme designed to accelerate the climate activism of 15 young women, prioritising the participation of minorities – black, indigenous and low-income women, as well as women living in the suburbs and economically vulnerable regions. Participants receive training in media, advocacy, and climate activism, in addition to establishing connections with influential women leaders in the field. Each young woman also receives a scholarship to develop a local project, thus applying their learning to benefit their own community.

The second project brings climate education with a gender perspective to public schools, especially in areas most vulnerable to the impacts of climate change, in partnership with local activists. The proposal is to offer workshops and tailored educational materials on climate change and social inequalities, therefore reinforcing the importance of youth and women's leadership in addressing the climate crisis.

The figures underscore the urgency of this agenda. According to UN Women, by 2050, more than 158 million women and girls will be pushed into poverty, and another 236 million will face hunger as a consequence of climate change. These impacts fall disproportionately on countries of the Global South, including Brazil. Nevertheless, women's exclusion from key negotiating spaces persists: a survey carried out by Greenpeace Brazil shows that, across 29 editions of the United Nations Climate Change Conference (COP), only five have been chaired by women.

In Brazil, the issue is even more complex when racial, ethnic, class, and geographic dimensions are taken into account. Regional inequalities and the diversity of biomes make the implementation of effective adaptation policies an urgent priority. In this context, women's leadership – particularly that of indigenous and community leaders on the frontlines defending their territories – highlights the transformative power of female participation in building a future grounded in climate justice.



UN Women advocates for a feminist approach to climate justice, centered on four key areas:

1

Recognising women's rights, labour, and knowledge

Valuing both scientific expertise and traditional knowledge, especially that of indigenous, rural, and young women, for more effective adaptation policies.

2

Redistribution of economic resources

As women face systemic disadvantages, such as wage gaps and unequal access to jobs, land, technology, and education, it is crucial to prioritise gender equality in fair transitions, for instance, through social policies funded by progressive taxation as well as support for initiatives like school feeding programmes supplied by local women farmers.

3

Representation of women's voices

Expanding women's participation in parliaments, environment ministries, and international negotiations, where they remain a minority despite leading much of the environmental activism worldwide.

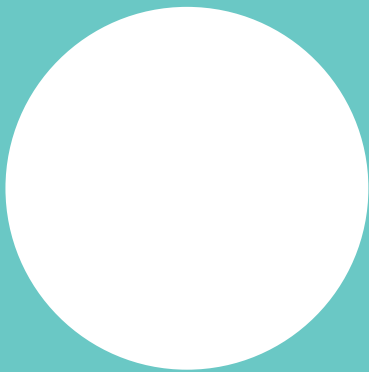
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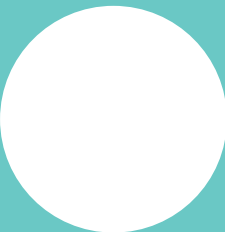
Repairing historical inequalities

Countries in the Global North, responsible for 92% of excess emissions since 1850, must honor their climate finance commitments and support women-led grassroots organisations. Currently, only 3% of climate aid prioritises gender.



The magic of a backyard

- 
- **Solution**
Jofo Nimairama – Casa de
Conhecimento Ancestral
(House of Ancestral Knowledge),
for the right to exist in both the
city and the forest

- 
- **Organisation**
Witoto Institute, a woman-led
organisation

In Vanda Witoto's backyard, at Parque das Tribos (Tribes Park), Manaus's first indigenous neighborhood where more than 700 families from more than 30 peoples currently reside, the Jofo Nimairama – House of Ancestral Knowledge space was conceived, an inspiring example of cultural resistance, social innovation, and environmental impact led by the Amazon's indigenous women since 2016. More than an educational initiative for urban indigenous children, the project is a space for the appreciation and preservation of ancient indigenous knowledge.

Based on a well-being methodology for indigenous people, Jofo Nimairama encompasses the teaching of a native language, spirituality, cultural practices, and environment-based education. By offering regular activities for around 80 indigenous children, the project combats the erasure of identities spurred by centuries of colonization, fosters food safety for children and bolsters respect for biodiversity and sustainable lifestyles. In doing so, it also contributes to the fight against deforestation.

In order to revitalise traditions and foster care for nature, Jofo Nimairama's activities include, for instance, tree planting. The main goal is to strengthen the indigenous identity and empower the community by integrating cultural and sustainable practices that are key to the preservation of the Amazon's biodiversity.

The local reality highlights the urgency of this kind of initiative. According to the 2022 Brazilian Institute of Geography and Statistics (IBGE) census, nearly 60% of indigenous peoples in Amazonas live in urban areas – the state is home to the world's largest indigenous population, with approximately 490,000 people. In the outskirts of Manaus alone, there are 70,000 indigenous people, many of whom have been forced to leave their communities due to pressures from gold and potash mining, as well as the advance of deforestation driven by large estates and agribusiness.

Urban conditions are not favorable. Still according to the IBGE, Amazonas is the second state with the lowest tree cover in its cities, second only to Acre.

In Manaus, the population lives with smoke from wildfires, which adds to the severe deficiencies in urban infrastructure.

During the pandemic, the tragedy deepened: more than 400 indigenous people died due to lack of oxygen in hospitals in the capital. Food insecurity is also a constant threat. Without access to land for cultivation, urban indigenous peoples face difficulties in securing their livelihoods, thus having the highest rates of income and employment insecurity in the country (46%).

Among the main barriers to the expansion of the Jofo Nimairama project are financial challenges, lack of infrastructure, external cultural resistance, and the need to ensure long-term sustainability. Dependence on donations also curbs growth, and activities still take place under trees or on improvised verandas. In addition, the official educational system often undervalues ancestral knowledge.

In order to overcome these obstacles, the action plan includes establishing partnerships with governments, NGOs, and companies committed to cultural and environmental preservation; developing sustainable business models, such as the commercialisation of cultural products and food; building adequate physical spaces, such as classrooms and community centres; empowering communities to create their own solutions and reduce dependence on large external investments. It is also essential to invest in the training of indigenous educators and in raising awareness among authorities about the importance of intercultural education and environmental preservation within the official education system.

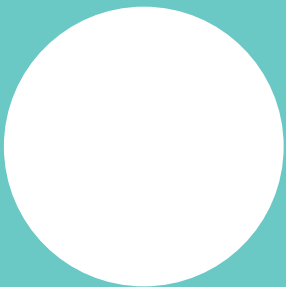
To amplify impact and scale local initiatives, the Witoto Institute mobilises leaders, residents, and partners to support existing projects as well as create new ones, including a socioterritorial diagnosis that identifies vulnerabilities and potential, therefore strengthening the identities, self-esteem, and socio-economic conditions of urban indigenous families. The creation of a participatory governance model, with indigenous leaders at the centre of decision-making, will also ensure that the project adapts to local realities, securing its continuity and long-term expansion.

- 
- In Vanda Witoto's backyard, there is also an operating **Ateliê Derequine (Derequine Atelier)**, where women from different ethnic groups produce handicrafts to strengthen memories and identities, while their children learn mother languages – around **15** indigenous languages are spoken in Tribes Park.



Youth mobilising for socio- environmental justice

- 
- **Solution**
Provision of high-quality
native seeds for ecological
restoration

- 
- **Organisation**
Redário de Redes de Sementes
(Redário Seeds Network),
a non-profit organisation

Launched in 2017, the Recife Youth Environmental Collective is dedicated to training young leaders, ages 15 to 29, on socio-environmental topics such as green cities, water, solid waste, biodiversity, noise pollution, and climate change. The initiative includes mini-courses, school and network mobilisation, mentoring, and workshops. The goal is to encourage young people to become multipliers of sustainable practices and agents of change for a more resilient and sustainable city.

In other words, the initiative seeks to engage new generations in socio-environmental and climate challenges by fostering their education and encouraging active participation in transforming the city's most vulnerable areas. Through educational activities, members learn to identify local problems such as environmental degradation, climate change impacts, and unequal access to natural resources. To ensure technical support and broaden the reach of its actions, the collective builds partnerships with organisations, educational institutions, and community leaders.

The project focuses its efforts particularly on tackling environmental degradation and the impacts of climate change in Recife's peripheral communities. In these areas, residents face limited access to essential resources such as safe drinking water, as well as increasingly frequent extreme weather events, including floods and heatwaves.

The root of these problems lies in a combination of factors: unplanned urban growth, absence of adequate public policies, lack of investment in sustainable infrastructure, and degradation of local ecosystems, aggravated by pollution and poor sanitation. The consequences are severe. In 2020, for instance, about 130 people died in Recife's metropolitan region due to landslides triggered by heavy rains.

The collective recognises that there are several barriers to scaling up its impact. The first of them is technical, since the lack of infrastructure and adequate tools for monitoring environmental problems hampers the effectiveness of the projects. To address this gap, the initiative invests in accessible technological solutions, such as monitoring applications.

There's also a financial barrier, as the scarcity of resources makes it unviable to carry out larger-scale projects. In this instance, partnerships with civil society organisations and educational institutions stand as alternatives to secure funding.

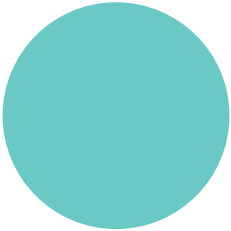
Another challenge faced is the cultural barrier, marked by the resistance from part of the population in adopting new environmental habits. To overcome this, the collective invests in long-term awareness strategies, including workshops, community actions, and continuous education activities.

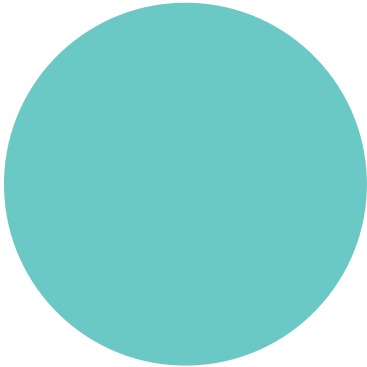
There is also a regulatory barrier associated with the absence of specific public policies to support youth-led initiatives. The group seeks to address this issue by liaising with political leaders and advocating for legal changes that create a more favorable environment for strengthening local socio-environmental solutions.

Despite the challenges, the most important step has already been taken. To overcome the climate crisis, the first task is to build citizenship. This is exactly what the Recife Youth Environmental Collective has been doing. Every action, no matter how small, helps strengthen the hope of having a more just and resilient city.



Recent actions by the Collective



- **Workshop on solid waste disposal**
 - **Revitalisation of the square in the Iputinga neighborhood**
 - **Event: Climate Crisis – intergenerational perspectives**
 - **Climate education workshop for high school students**
- 
- 



Native seeds restore ecosystems and strengthen communities



Solution

Redário de Redes de Sementes
(Redário Seeds Network), a coalition
between networks and groups of
native seed collectors



Organisation



Instituto Socioambiental
(Socio-Environmental Institute),
a non-profit organisation

The *Redário de Redes de Sementes* initiative is deeply embedded in the global climate context. In 2021, the United Nations (UN) declared the Decade of Ecosystem Restoration (2021-2030), calling on countries to recover millions of degraded hectares to tackle the climate crisis, protect biodiversity, and ensure water and food security. Along the same lines, Brazil has committed to restoring 12 million hectares of forests by 2030.

The challenge is enormous. Large-scale ecosystem restoration is costly and constrained by long-standing bottlenecks, such as the inconsistent supply of seeds and an unstructured native seed value chain. In this context, key questions emerge: how to secure resilient seeds in the face of climate change? How to build a fair market throughout the value chain? How to promote citizenship and participatory governance systems? And, above all, how to support communities that resist the pressure of agricultural, real estate, and industrial expansion over forests, savannas, and native fields?

Redário seeks to answer these questions. The initiative was born as a joint effort among networks and groups of native seed collectors and has since established itself as one of the leading community-based experiences dedicated to large-scale ecological restoration in Brazil. Its goal is to address the shortage of high-quality native seeds at a time when demand is increasing, driven by science, the growing popularity of techniques such as direct seeding, and the urgency of restoring large areas.

The organisation's strategy combines two complementary fronts: on one hand, it fosters community enterprises in traditional territories; on the other, it works to enable the legal and technical conditions required for a functional value chain to function – which involves developing solutions for governance, logistics, contracting, communication, and market.

Beyond supporting restoration projects based on fair-trade seeds with broad genetic diversity that are adapted to climate change, Redário also works in public policy advocacy by promoting improvements to Brazil's regulations on ecological restoration, taxation, and seed production. Part of these proposals have already been incorporated into the National Native Vegetation

Recovery Plan (Planaveg), updated in November 2024, which sets out strategies to accelerate and scale up restoration efforts nationwide.

The first results are already visible on the ground: over 500 tons of seeds from 380 species are being sown across forests and savannas, covering more than 14,000 hectares, mostly restored through the *muvuca* technique, a method that mixes multiple carefully selected species.

Among the main challenges identified by Redário are quality analyses, which must be carried out in laboratories accredited by the Ministry of Agriculture and Livestock (Mapa). Today, few labs are equipped to handle native species, which leads to high costs, delays, and inconsistent results. Taxation poses another barrier: while soy seeds benefit from subsidies and tax exemptions, native seeds face a heavy fiscal burden. For this reason, Redário advocates for tax incentives and exemptions across the entire restoration value chain.

Another bottleneck is the lack of monitoring indicators. Without clear metrics to assess restoration effectiveness, demand for native seeds does not grow at the needed pace. To address this gap, Instituto Socioambiental's technical teams participate in working groups developing such indicators. Compounding these issues is the scarcity of financial resources, which hinders the acquisition of seeds and investments in training for both existing and emerging seed networks.

Despite these challenges, Redário demonstrates that it is key for local and traditional communities to remain at the heart of large-scale climate and biodiversity solutions. Anchored in participatory governance and fair trade, the network champions a restoration model that respects ways of life, languages, and cultures, showing that to restore ecosystems is also to restore the bonds between peoples and their territories.



Redário in numbers



27

networks and groups



11

states and the
Federal District



5

biomes



2,500

collectors



380

native species



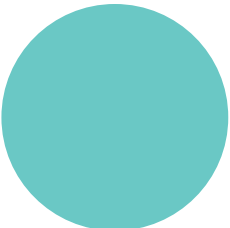
60%+

women



500+

tons of seeds





Tainá, the community virtual assistant that protects biodiversity



Solution

Tainá, a chatbot that enables the storage of biodiversity information, supporting species cataloguing, safeguarding traditional knowledge, and generating income for communities



Organisation

Oyá Institute and GainForest, nonprofit organisations

Only 1% of global biodiversity data comes from the world's largest tropical forests, revealing a knowledge gap about ecosystems that are crucial for addressing climate change. To bridge this gap, an innovative initiative relies on nature-positive technologies, turning local and indigenous communities into key players in the production and management of environmental information.

At the heart of the project is Tainá, an Artificial Intelligence assistant that guides traditional communities through conversations on the social network Telegram on how to record and share such knowledge. Ultimately, Tainá draws on the ancestral art of storytelling as a tool for community strengthening and knowledge exchange. By encouraging local residents to photograph nature, report experiences, or narrate stories about plants and their uses, the project transforms daily life into a living record of knowledge.

While this initiative preserves cultural traditions, it also gains scientific relevance by contributing to biodiversity documentation and new discoveries. In the process, traditional peoples are no longer mere sources to be consulted, but they are also recognised as authors, receiving fair compensation and credit for their contribution.

The project is a partnership between Oyá Institute, an organisation working in the field of climate justice and sustainable development, and Gain-Forest, a Swiss technology organisation specialising in community-based co-design technology, which operates on several fronts by using Artificial Intelligence for environmental preservation.

The collected data can be hosted independently or managed by a data council elected by the communities themselves, ensuring autonomy and sovereignty over sensitive information. The model is pioneering in proposing decentralised data collection as a sustainable source of income for traditional peoples, combining digital technology with both economic and cultural opportunities.

The initiative is already operating with a minimum viable product, which has allowed community feedback to be incorporated into its design. Co-learning workshops are being held to address technological advances in Artificial Intelligence, environmental DNA (eDNA), and drones, as well as to discuss the importance of data sovereignty and the value of local knowledge.

The urgency of this type of solution is clear. According to the United Nations (UN), indigenous peoples represent only 5% of the global population, yet Indigenous Lands harbor more than 82% of global biodiversity. At the same time, they face challenges in the global race for patents and patent applications for products derived from Amazonian plants.

Among the main challenges in implementing Tainá are curating indigenous data, the technical complexity, and privacy protection. To address these, local councils in participating communities will be responsible for collecting culturally sensitive data and setting usage guidelines. An initial pilot in three communities will use the Llama-3.1 70B model, adapted with techniques such as LoRA, which enables scalability without the need for full retraining.

Privacy will be safeguarded by a self-managed infrastructure through encryption, access control, and rigorous audits. Performance will be assessed on two fronts: technical metrics and cultural feedback from communities, carried out on a quarterly basis. The infrastructure will be optimized with quantization techniques to reduce resource consumption while maintaining performance and reliability.

The timeline, in turn, will remain flexible, respecting the rhythms of the communities and adjusting stages according to feedback. The goal is to combine technical excellence with cultural sensitivity, ensuring that digital innovation truly serves biodiversity conservation and the strengthening of the people who protect it. By encouraging local communities to photograph nature, share experiences, and narrate stories about plants and their uses, “Tainá” transforms everyday life in the forest into a living record of knowledge.



A survey by the National Institute of Industrial Property (INPI) showed that, by 2022, there were around 43,000 patents registered globally related to 59 Amazonian plants. China leads this scenario with nearly 19,000, followed by the United States with 3,700. From this billion-dollar market, very little is given back to indigenous peoples, who remain excluded from royalties and intellectual income generated by their knowledge.







Scaling up agroforestry systems

- 
- **Solution**
Scalable agroforestry
systems for the recovery of
degraded lands

- 
- **Organisation**
Belterra Agroflorestas, a private
company – 2023 Earthshot
Prize Finalist

The current commercial agricultural system, when done without sustainability criteria, has caused severe negative environmental impacts: it consumes vast amounts of water, depletes the soil, and contaminates plants. Agroforestry Systems (AFS) have proven to be efficient in promoting resilience and increasing productivity. However, they have traditionally been designed for small areas, with little mechanized management and non-specialised labour, which makes their scalability limited and unsustainable. The challenge Belterra sets out to address is to reconcile the maintenance of biodiversity with the productive and economic viability of large-scale AFS.

The sustainable practices adopted by the company aim to restore the damage caused by inappropriate land use. The cultivation of diverse native and exotic species, soil cover, and green manure are regenerative agriculture techniques that promote nutrient cycling, increase moisture retention, prevent resource depletion, and capture carbon. In addition to producing high-quality food sustainably, the company also structures agro-industrial value chains for its products in line with market demands.

Belterra operates in six Brazilian states – Pará, Amazonas, Rondônia, Bahia, Mato Grosso, and Piauí – covering the Amazon, Atlantic Forest, and Caatinga biomes. In the coming years, expansion will focus on Pará and Bahia, through cocoa-based AFS arrangements, directly impacting the productive restoration of critical areas and generating sustainable economic alternatives.

A central pillar of Belterra's development has been its partnership with Fundo Vale (Vale Fund), which has acted as a strategic investor since the company's creation. Its support was crucial for setting up plant nurseries, field teams, and pilot projects, as well as for attracting new partners and consolidating the company as a benchmark in regenerative business models, particularly in developing innovative investment instruments and vehicles.

Among the ongoing initiatives are the agroforestry transition with family farmers, with AFS that combine cacao as the anchor species, associated with banana, cassava, açai, and native timber trees. Structural projects financed by the Vale Fund (2,500 hectares) and Impact Earth via the Amazon Biodiversity

Fund (550 hectares) are also underway, in addition to a programme with Amazon, benefiting more than 240 farmers with technical assistance and input financing for agroforestry implementation.

The model integrates blended finance, public credit and private funding, with instruments such as Green Agribusiness Receivables Certificates (Green CRA) and the Investment Fund for Agro-Industrial Production Chains (Fiagro). In terms of socio-environmental monitoring, field protocols are applied for carbon, biodiversity, and social indicators, including a biodiversity credit pilot programme.

Innovation is another distinctive feature: Belterra develops data-driven AFS designs that guide spatial layout, selection of key species, green fertilisation, and soil and canopy management (continuous cover formed by tree crowns). Remote sensing, georeferencing, and data analysis allow for precise site selection, monitoring, and traceability.

On the financial front, subsidized credit, impact capital, and philanthropy within blended finance structures help reduce risks and anticipate revenues, especially through carbon projects. The company's decentralised operational model supports networks of agroforestry service providers, therefore ensuring scalability and territorial capillarity.

The main scalability challenges include high initial capex (capital expenditures) and the long maturation cycles of AFS; farmer training; inputs logistics; traceability; and land tenure security. To tackle these, Belterra has developed solutions such as blended finance models, offtake agreements (with future purchase commitments), advance payments tied to environmental metrics, local hubs for Technical Assistance and Rural Extension (Ater), strengthened regional service chains, commercial partnerships with global companies, robust socio-environmental MRV (Monitoring, Reporting, and Verification) protocols, and rigorous land screening, prioritising areas eligible for public credit.

Beyond its business front, the Belterra Institute serves as an arm for social innovation by developing projects in collectively managed territories and with vulnerable populations, broadening the company's scope and reinforcing its mission.

Belterra Agroflorestas in numbers



78

contracts signed



5,000

hectares of
agroforestry
systems



703,000

banana
seedlings



670,000

cacao seedlings



23,000

açaí seedlings



148,000

forest species
seedlings



700,000

cassava cuttings



Açaí biochar, from waste to fertility

- 
- **Solution**
Transforming açai
waste into sustainable
biofertiliser

- **Organisation**
Amazon Biofert,
a private company
- 

In the Amazon, açai is more than just food: it is culture, economy, and identity. Foods derived from the açai fruit are part of the daily life of millions of Brazilians and sustain value chains that now reach all corners the globe. Yet, behind this emblematic Amazonian fruit lies an environmental challenge: the disposal of pits. Every year, the region generates thousands of tons of açai waste – its seed makes up roughly 80% of the fruit – which, without proper destination, often ends up piled on sidewalks, dumped in landfills, or burnt as fuel, releasing CO₂ into the atmosphere and worsening the impacts of the climate crisis.

This environmental liability intersects with another global issue: soil degradation. According to the Food and Agriculture Organisation of the United Nations (FAO), 33% of the world's soils are degraded by erosion, salinization, compaction, acidification, or contamination. The use of chemical fertilisers to restore soil nutrients, besides posing application risks, can also cause significant financial losses: farmers often lose much of the applied fertiliser, which dissipates before fulfilling its function. The consequence is a vicious cycle of low fertility, dependence on costly inputs, and increased pressure on forests.

It is within this context that a pioneering solution has been born. Amazon Biofert, a factory located in the state of Amapá, transforms mountains of discarded açai seeds into biochar, a high-performance, sustainable, and regenerative biofertiliser. Biochar results from a controlled carbonisation process that turns açai waste into a porous material with exceptional nutrient and water retention capacity. Once incorporated into the soil, it acts as a natural magnet by trapping nutrients that would otherwise be lost, thereby reducing the need for chemical fertilisers.

The outcome is twofold: increased agricultural productivity – biochar fosters an environment conducive to beneficial microorganisms, improves soil structure, and aids in the restoration of degraded areas – as well as lower costs for farmers.

The benefits extend well beyond agriculture. From a climate perspective, biochar functions as a permanent carbon stock: instead of releasing CO₂ into the atmosphere through burning or decomposition, the carbon becomes locked into the soil for decades, or even centuries. Thus, each ton of açaí residue converted into biochar represents a direct contribution to mitigating climate change. In addition to promoting more sustainable and productive agriculture, Amazon Biofert cuts up to 75% of the waste generated by açaí processing industries.

From a social standpoint, the initiative creates local jobs and strengthens the region's circular economy, creating value from a previously discarded by-product. By connecting smallholder farmers, extractivist communities, and açaí supply chains, the project fosters productive inclusion and economic sustainability.

The impact of açaí biochar is scalable. As açaí consumption continues to rise year by year, especially in Brazilian urban centres and international markets, the amount of available residue also grows. This opens the door for new production facilities across the Amazon, replicating the model in different municipalities. Each factory represents an opportunity to transform environmental liabilities into economic and climate assets, thus aligning agricultural production with ecological regeneration.

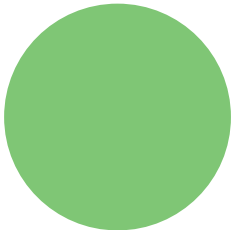
By transforming açaí seeds into soil fertility, this initiative demonstrates how possible it is to align technological innovation, environmental conservation, and socio-economic development. More than a fertiliser, açaí biochar is a regenerative strategy that returns nutrients to the soil, reduces emissions, and creates new opportunities for the Amazon.



Benefits of biochar for soil and the environment

- **Improves overall soil biology** by increasing the amount of mycorrhizal fungi by 40%
- **Increases the soil's water retention capacity** by up to 18% compared to original soil
- **Enhances the soil's mechanical resistance** to weather conditions and rainfall leaching, making it more resistant to erosion
- **Raises the pH** of acidic soils (by 1 pH point)
- **Improves nutrient retention** in the soil, by counteracting rain leaching and lowering the need for mineral fertilisers by up to 30%
- **Filters toxins in the soil** such as herbicides, lead-based paints, aluminum, and other pollutants, therefore preventing them from being absorbed by plants and/or leaching

Source — Amazon Biofert - <https://www.amazonbiofert.com/o-que-é-o-biochar-de-açaí>





Foodtech transforms biodiversity into nutrition

- **Solution**

Amazonian superfoods: functional foods prepared with ingredients sourced from regenerative agriculture in the Amazon

- **Organisation**

Mahta Nutrição Regenerativa da Floresta (Mahta Forest Regenerative Nutrition), a private company

Mahta is a Brazilian foodtech company using Amazonian biodiversity to develop functional, nutrient-rich foods produced through agroforestry systems and regenerative agricultural practices in the Amazon. Its products (superfoods) are made with forest-harvested ingredients, such as cacao, cupuaçu, and açaí, all rich in antioxidants and essential nutrients that aid beneficial bacteria for the human body.

Mahta's mission goes beyond food. By adopting the Regenerative Forest System (SRF), which integrates agroforestry and extractivism, Mahta contributes to the restoration of degraded soils, the conservation of standing forests, and the strengthening of family farming. This model ensures biodiversity conservation, values the work of local communities, and secures fair compensation for producers by eliminating middlemen from the production chain. In short, it creates a fourfold positive impact for people, communities, forests, and the planet.

From a nutritional standpoint, the products are designed to support gut health and human microbiome balance, promoting holistic well-being. In order to preserve the potency of bioactive compounds, Mahta employs advanced processing techniques such as freeze-drying (lyophilisation) and micronisation – the first preserves nutrients through a dehydration process that removes water from a frozen product using sublimation; the latter reduces food particles so that they are more easily absorbed and digested. This strategy not only enhances nutritional value, but also makes logistics cleaner, as removing water reduces packaging volume and transport and storage-related carbon emissions.

The company operates within the common structural challenges of the Amazon, including deforestation driven by cattle raising and soybean monocultures. In 2024, around 90% of all deforestation in the biome was directly linked to cattle raising expansion, pressuring local populations to abandon their traditional ways of living in favor of activities that, although profitable in the short term, cause soil degradation, loss of biodiversity, and contamination from agricultural and mining waste.

In this context, Mahta positions itself as a concrete alternative by proving that it is possible to generate income, ensure food security, and protect ecosystems through regenerative agriculture, with sustainable management practices including crop rotation (growing different species each season), no-till farming (keeping soil permanently covered with straw mulch or vegetation while minimising tillage), and contour plowing (sowing along natural land contours) to reduce erosion.

The company's growth, however, faces barriers. One challenge is the planned expansion of its product portfolio, with the launch of a new line every six months. Another is scaling up distribution channels. There is also the challenge of geographical expansion. The company plans to enter the U.S. market, but internationalisation will require compliance with strict food safety and labeling standards, as well as significant marketing investments to educate consumers about the benefits of Amazonian superfoods and the company's regenerative model. The U.S. health food and supplements sector is highly competitive, with many established brands offering similar products.

Maintaining a reliable supply chain is another critical issue. Bringing Amazonian forest ingredients to international markets while preserving quality and freshness will require innovative logistics and storage solutions.

By producing foods that not only deliver health benefits but also help conserve the environment and empower local communities, Mahta demonstrates its complete alignment with the trends of a market that's increasingly attentive to the socio-environmental and cultural impact behind every meal.



Mahta's Ingredients



Açaí



Bacuri



Bacaba



Cacao



Camu-camu



Apuí Green Coffee



Brazil Nut



Catuaba



Cumarú



Dried Coconut



Andean Stevia



Cupuaçu



Acacia Gum



Soursop



Guaraná



Chicory Inulin



Marapuama



Murici



Assísî Pepper



Pollinating positive impact



Solution

Leveraging pollination to restore ecosystems, increase biodiversity, generate measurable socio-environmental impact, and ensure nutritional and economic resilience for future generations



Organisation

Bee2Be, a global for-profit company

In a global scenario marked by the rapid disappearance of bees – responsible for maintaining biodiversity and much of the planet’s food production –, a Brazilian initiative is combining science and tradition to generate social impact. Bee2Be uses beehives as accelerators of environmental regeneration and sustainable agriculture, while promoting fair trade in bee products developed in partnership with communities across the Atlantic Forest, Amazon, Mangroves, Cerrado, and Caatinga biomes.

Pollinator populations, particularly bees, are vital for the reproduction of 75% of flowering plants, which account for one-third of global food production. Yet, habitat destruction, intensive pesticide use, climate change, and disease have drastically been reducing their numbers, directly threatening biodiversity and food security. Supporting the restoration of pollinators means not only preserving nature but also ensuring nutritional and economic resilience.

Bee2Be was born from the personal experience of its founder and CEO, Simone Ponce. Having been diagnosed with fibromyalgia, she found relief in bee products such as honey, propolis, and pollen. Inspired by this discovery, she sought to make these benefits more widely available to consumers. In search of a life more connected to nature, she left São Paulo for Bahia, where she immersed herself in beekeeping ecosystems and discovered not only the vast potential of the activity, but also the challenges faced by local producers, digital exclusion, outdated production methods, and exploitation by middlemen. On the basis of this reality and together with her partners, she founded Bee2Be to generate positive social, economic, and environmental impact.

At Bee2Be, bees are more than pollinators: they are agents of transformation. The business model integrates beehives into large industrial operations, boosting pollination to restore ecosystems, increase biodiversity, and create measurable socio-environmental outcomes. Results are backed by impact reports based on biodiversity gains and income increases.

The company also supplies honey, propolis, and other bee-derived products from sustainably managed hives in protected areas, thus ensuring a fair and ethical value chain from production to market. To safeguard both bee and consumer health, Bee2Be partners with laboratories recognised for their quality standards.

When it comes to environmental impacts, Bee2Be has already directly supported the preservation of more than 85 million bees, contributing to the restoration of critical biodiversity hotspots across Brazil. The pollination provided by the hives strengthens ecosystems, increases agricultural productivity, and offers client industries a concrete pathway towards their environmental targets.

As for its social impacts, the initiative highlights the empowerment of local communities: Beekeepers and meliponiculturists have received training, which has generated income and economic inclusion in vulnerable regions; byproducts have reached the market, and community brands have been strengthened. This demonstrates how integrating beekeeping into community projects can simultaneously support biodiversity and create sustainable livelihoods.

Bee2Be's journey, however, requires overcoming technical and financial barriers. The scarcity of advanced tools for monitoring pollinators is addressed through partnerships and data analysis. The high initial infrastructure costs, on the other hand, are mitigated by impact investors, though broader support from mainstream markets is still needed.

In essence, by integrating bees into industrial and community operations, Bee2Be promotes environmental regeneration, strengthens biodiversity, and creates socio-economic impact. Bees therefore become a bridge between sustainability and progress, between prosperity and biodiversity, positioning the company as a pioneer in building a scalable model for ecological and social regeneration.

Beyond honey

BEE POLLEN

A mixture of flower pollen, nectar, enzymes, honey, wax, and royal jelly.

Benefits

A clean source of protein, antioxidants, and B-complex vitamins. Promotes increased energy and resistance

PROPOLIS

A resinous substance produced by bees sourced from tree parts and buds.

Benefits

Acts as an anti-inflammatory that stimulates the immune system, with medicinal antiseptic, antibacterial, and antifungal properties



The intense flavour of the standing forest

- 
- **Solution**
Agroforestry coffee in the Amazon produced by family farmers as a way to restore degraded lands

- **Organisation**
Amazônia Agroflorestal (Amazon Agroforestry), a private company
- 

In the heart of the Amazon, a coffee is born, blending the exceptional taste of the beverage with a priceless ingredient: forest preservation. Café Apuí Agroflorestal (Apuí Agroforestry Coffee), grown under the forest canopy and integrated with a variety of native species, produces larger and sweeter cherries than other Robusta or Conilon species, resulting in a full-bodied drink with an intense flavour and balanced acidity.

It is the first 100% organic coffee grown within an agroforestry system (AFS) in the Amazon, proving that high-quality coffee can go hand in hand with the recovery of degraded lands and the preservation of standing forests.

Apuí is one of the cities with the highest deforestation rates in the state of Amazonas. In 2022, it led the deforestation ranking due to the expansion of extensive cattle ranching and unsustainable agricultural practices. In this context, finding solutions that integrate environmental conservation with local economic development has become increasingly urgent and strategic, pointing to innovative pathways for sustainable development in the region.

In 2012, Idesam, a partner organisation of the project, launched a regenerative agriculture initiative focused on coffee production in Apuí. Degraded lands, once abandoned due to low productivity, have proven highly promising when cultivated under the natural shade of native species. This method creates microclimates favorable to coffee growth and, according to studies, tree shading helps standardize fruit ripening, adding superior quality to the final product and enabling the production of distinctive organic coffee that has been recognised by markets and appreciated by consumers.

In 2019, Amazônia Agroflorestal was created, a company responsible for scaling up the solution, ensuring production purchasing, and leading the commercialisation of the coffee. Its core mission is to engage an increasing number of farmers in adopting the agroforestry coffee model. Company data show that one hectare of regenerative coffee can generate up to three times the income of cattle raising, making it a sustainable economic alternative for local families.

The project began with 15 families managing about 15 hectares, and now involves over 115 families, restoring more than 230 hectares of forest. The planting is carried out exclusively in degraded areas, avoiding the clearing of new land. The coffee plantations are integrated with native plants, forming complex and resilient natural systems that, over time, promote forest regeneration. The partnership with family farmers strengthens local agriculture and the regional economy while expanding positive environmental and social impacts.

The company provides free seedlings and inputs, offers technical support at every stage of production, and guarantees full purchase of the harvest by paying up to 20% above market prices. Currently, Café Apuí is the only certified organic coffee produced in Amazonas, a distinction that enhances its added value.

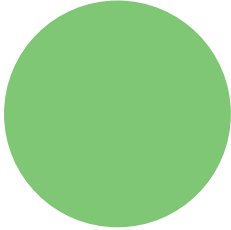
The project acknowledges that Brazil's contribution to climate change is directly linked to uncontrolled deforestation. In such context, agroforestry systems emerge as an integrated, effective, and scalable solution. Not only does the model preserve forests and strengthen the local economy, but it can also be replicated in different regions of the Amazon.

Despite its progress, scaling the initiative still faces key barriers. The main challenge is financing. Many farmers cannot afford the costs of implementing new plots, which makes it essential to continuously seek new partners willing to invest in forest restoration. Another challenge is technological, as the project needs to improve monitoring mechanisms, data organisation, and production management. To this end, it seeks partnerships with technology institutes to develop a digital platform and a management application.

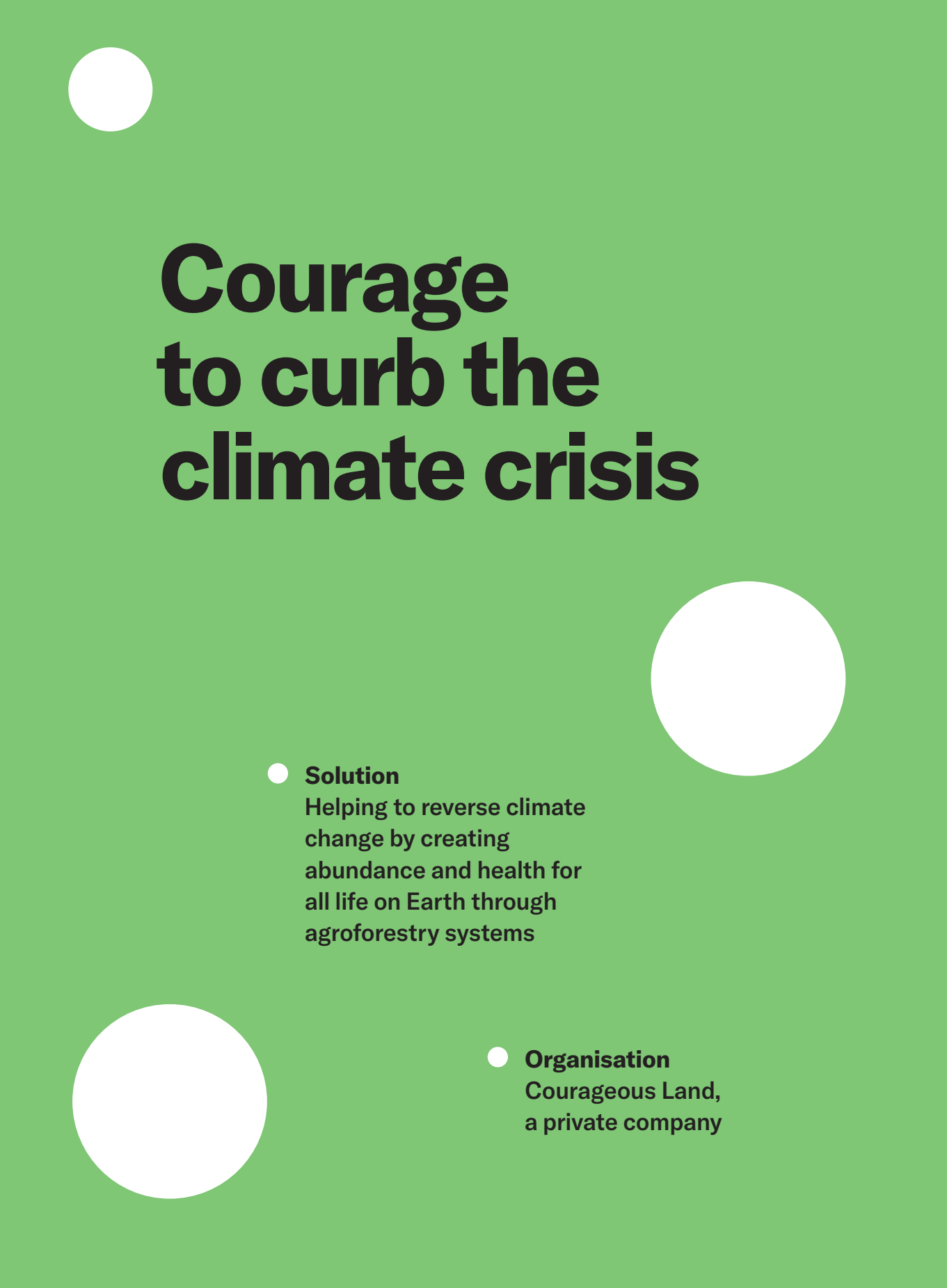
On the other hand, when it comes to replication, the company already holds consolidated expertise. With over a decade of experience, it has extensive technical knowledge in implementing agroforestry systems and is prepared to disseminate the model in other regions. In addition to training local teams, it maintains structured documentation, including management guides, inputs lists, performance indicators, and organic certification protocols, which facilitates the scalability of the solution.



Fact sheet – Café Apuí Agroflorestal



- **VARIETY**
100% Robusta
(*Coffea canephora*)
- **FLAVOUR**
Full-bodied,
intense flavour
- **PROFILE**
Strong
- **ORGANIC**
IBD certified, free
from chemicals,
blends, or
preservatives
- **REGENERATIVE**
Restores degraded
areas of the
Amazon with
native species
while generating
income for family
farmers
- **FAIR**
Values producers by
following the ethical
trade principles



Courage to curb the climate crisis

- **Solution**
Helping to reverse climate change by creating abundance and health for all life on Earth through agroforestry systems

- **Organisation**
Courageous Land,
a private company

Amid a series of interconnected crises – climate change, biodiversity loss, food insecurity, health challenges, and lack of income for rural communities, all exacerbated by insufficient adaptation programmes Courageous Land emerged with an ambitious mission: to curb climate change while creating health and abundance for all life on Earth. The company places its bet on agroforestry systems (AFS) as a scalable solution to address the global challenge. This practice integrates the cultivation of trees and food crops in combinations that can range from simple models, with few species, to complex systems that emulate the structure and ecological functions of a natural forest.

Since 2011, the Courageous Land team has been developing arrangements that reconcile biodiversity with productive viability and intends to plant over 100,000 hectares of agroforestry systems within the next decade. In the short term, its goal is to reforest 10,000 hectares of degraded lands and pastures by 2030, implementing multi-strata systems – forest-based agricultural models that mimic the layers of native forests – capable of regenerating soils while generating agricultural produce.

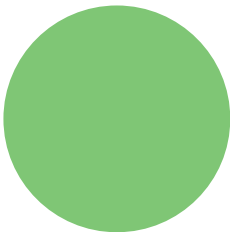
To achieve these goals, the company has developed the Agroforestry Intelligence Platform, which supports landowners and organisations through every stage of the process – from planning and financing to agroforestry management and commercialisation of crops and carbon credits. This tool also assists corporate partners in their decarbonisation strategies by linking environmental restoration to economic value creation.

Along this path, Courageous Land has been leading productive restoration efforts in critical areas of the Atlantic Forest and the Brazilian Amazon through planting biodiverse agroforestry systems that combine native species with high-value crops such as coffee, cocoa, açai, and avocado. Projects have already begun in the Paraíba Valley (São Paulo state), in the lower south of Bahia, and southern Roraima, converting degraded pastures into resilient agroforestry systems. These initiatives have resulted in hundreds of thousands of trees planted, the recovery of threatened species, and the creation of formal green jobs for rural communities.

The Courageous Land model has proven capable of tackling multiple environmental and social issues in an integrated way by removing CO₂ from the atmosphere, decarbonising supply chains, strengthening food security, increasing rural income, enhancing climate resilience, restoring biodiversity, and improving soil and water quality. Furthermore, it promotes direct health benefits for consumers through more nutritious, organic food production. The company defines itself as the only agroforestry platform truly capable of scaling solutions of this magnitude, due to its end-to-end involvement in the production chain, from planning, through financing and execution, to commercialisation.

Despite the robustness of the company's strategy, the large-scale advancement of agroforestry in Brazil still faces three main barriers. The first challenge is the high initial cost of implementation, which could be mitigated by developing innovative financing models that combine impact capital, climate funds, and partnerships with companies seeking carbon neutrality. The second is the limited technical assistance available to small and medium producers, which is being overcome through the use of the platform. The third is the difficulty in accessing markets for regenerative production, which the company tackles by directly connecting with premium buyers of sustainable food and carbon credits.

With a robust pipeline, ambitious goals, and proven capacity to integrate environmental regeneration, agricultural production, and social justice, Courageous Land positions itself as a leading actor in scaling agroforestry and in addressing the global environmental crisis.



The four pillars of Courageous Land's strategy for scaling up

1

Expand the use of the agroforestry intelligence platform to generate replicable plans

2

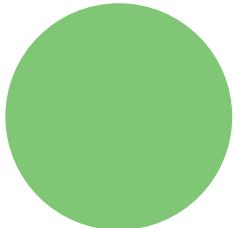
Mobilise global capital through investment vehicles aimed at restoring 100,000 hectares by 2032

3

Build local partnerships with communities, cooperatives, and governments, thus strengthening water security and establishing ecological corridors

4

Train and license operators, providing preparation and technical assistance that expand capillarity in Brazil and prepare for international scaling





Producing to conserve

- 
- **Solution**
Origens Brasil
(Origins Brazil)

- 
- **Organisation**
Imaflora (The Institute of
Agricultural and Forest
Management and Certification),
a non-profit organisation

Origens Brasil is a network composed of indigenous peoples, *quilombo-la* communities, traditional populations, companies, support institutions, and community organisations. It promotes ethical business in the Amazon, grounded in traceability and origin assurance, aiming to generate value for the forest and the peoples who live in it.

Since 2016, the network has connected those who protect the forest with companies committed to developing new ingredients and products that respect the living Amazon. For Origens Brasil, fostering the sociobioeconomy is one of the most tangible ways to generate income, conserve the forest, combat illegal and predatory activities, and address the climate crisis. In 2024, the network handled over R\$ 8 million in sociobioeconomy product transactions, a 51% increase compared to 2023, consolidating its vision of transforming the way of doing business in the Amazon.

The technology behind Origens Brasil is both social and digital. Its social technology lies in the governance of the network and in the grassroots organisations of its peoples. It draws upon ancestral forest knowledge – of water flows, winds, and harvest cycles – to guide production aimed at conservation and income generation.

Digital technology accelerates processes and enables the monitoring of results. A proprietary platform tracks commercial transactions, including volume, price, delivery, orders, product origin, and traceability; thus, functioning as an information database for network members and for the origin guarantee system, which ensures security for companies, producers, and society. From this platform, all the information for the annual transparency report is obtained. In addition, each product carries an Origens Brasil seal with a QR code, offering information about the producers and place of origin, therefore enhancing the visibility and recognition of the work carried out by the communities.

The network encourages businesses that value the living Amazon, respect traditional production methods, promote transparent trade, and pay fair prices. The goal is to build long-term commercial relationships grounded in the

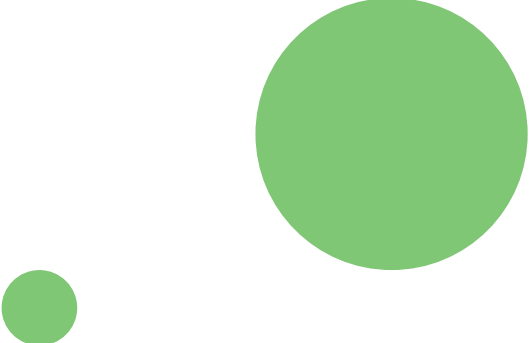
understanding that a sociobioeconomy product is a response to the climate crisis, a means of supporting indigenous and traditional peoples to live with dignity in their territories, and a financially sustainable model for companies.

Origens Brasil's production chains are developed by the indigenous peoples themselves, with support from partner institutions already active in the territories and offering technical and organisational assistance. Key value chains include *pirarucu*, Brazil nuts, *cumarú*, rubber, and handicrafts, each has its own characteristics, production cycles, and logistical challenges that vary by territory, therefore enabling rich exchanges of knowledge and experience among community organisations.

The Amazon faces historical and economic hurdles that go far beyond the commercialisation of sociobiodiversity products: violence, invasion of Conservation Units and Indigenous Land, illegal gold mining and logging, advancing deforestation, high logistics costs, limited access to credit, lack of tax incentives and effective public policies, in addition to the worsening impacts of the climate crisis, with droughts, fires, floods, and crop losses that severely affect local communities.

The solutions put forward by Origens Brasil include strengthening indigenous peoples and their strategies for remaining in their territories, preserving traditional cultures, conserving biodiversity, and generating income. At the same time, broader action is needed, such as stronger public policies, fiscal incentives, and fair credit access. Within the network, there are investments in building financial mechanisms that recognise and reward the socio-environmental services provided by local communities.

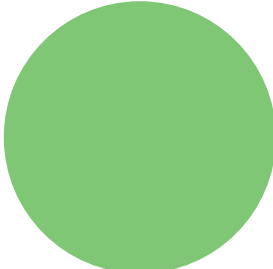
For Origens Brasil, recognising that these peoples provide environmental services of enormous importance for the planet, and valuing them economically is fundamental to advancing the sociobioeconomy agenda. This recognition enables companies to strengthen their socio-environmental commitments while helping consumers become more aware of their role, actively engaging through access to products with fair prices, verified origin, and full traceability.



Results and impacts



The network currently includes more than **4,800** registered producers, **90** support institutions and community organisations, and **41** companies. It operates across **62 million** hectares, in **55** protected areas in **6** states of the Brazilian Amazon (Amazonas, Amapá, Rondônia, Roraima, Mato Grosso, and Pará). More than **100** different products are marketed through the network which, over nine years, has amounted to over **BRL 32 million** in commercial transactions.





The power of the bioeconomy in the heart of Amazonas

- 
- **Solution**
Forest Conservation and Socio-environmental and Bioeconomy Development Project through the sustainable farming of Brazil Nuts

- **Organisation**
Abufari Produtos
Amazônicos, a
private company
- 

Deep in the heart of Amazonas, at the confluence of the Ipuxuna and Purus rivers lies the municipality of Tapauá. There, Abufari Produtos Amazônicos (Abufari Amazon Produce) develops, in a 213,000-hectare area, a socio-environmental plan of sustainable farming and processing of Brazil nuts (also known as *castanha-do-pará*) with forest conservation, income generation, and social inclusion. Backed by technical studies and traditional knowledge, the project is building a Brazil nut production chain that could position the region as a benchmark in the Amazon's bioeconomy.

The involvement of traditional communities is central at every stage of the production chain. Although still in development, this community participation has already resulted in the creation of the Associação de Extrativistas de Abufari (Abufari Extractivists Association) established with the purpose of organising local workers and strengthening their autonomy. The group has already received fishing kits from the Amazonas Social Promotion Fund and participates in income-generation programmes aimed at reducing reliance on predatory activities.

The company also invests in social infrastructure, notably the construction of a school and the installation of solar panels in communities within and around the farm, thus bringing clean energy to isolated areas.

In August 2020, Abufari inaugurated a Brazil nut processing plant dedicated to industrialising production sourced from conserved forest areas. The factory exemplifies how the bioeconomy can transform an extractive product into a high value-added commodity capable of reaching national and international markets. Today, nuts processed in Tapauá are mainly exported to Canada and India, with the plant having surpassed the 80-ton mark for the 2024 harvest.

In addition to agro-industrialising Brazil nuts, the company invests in environmental monitoring initiatives as well as combating deforestation and illegal activities. One such initiative is the Team Project, which raises awareness among children about the importance of the forest and the sustainable use of its resources. Another key effort is the Good Harvesting

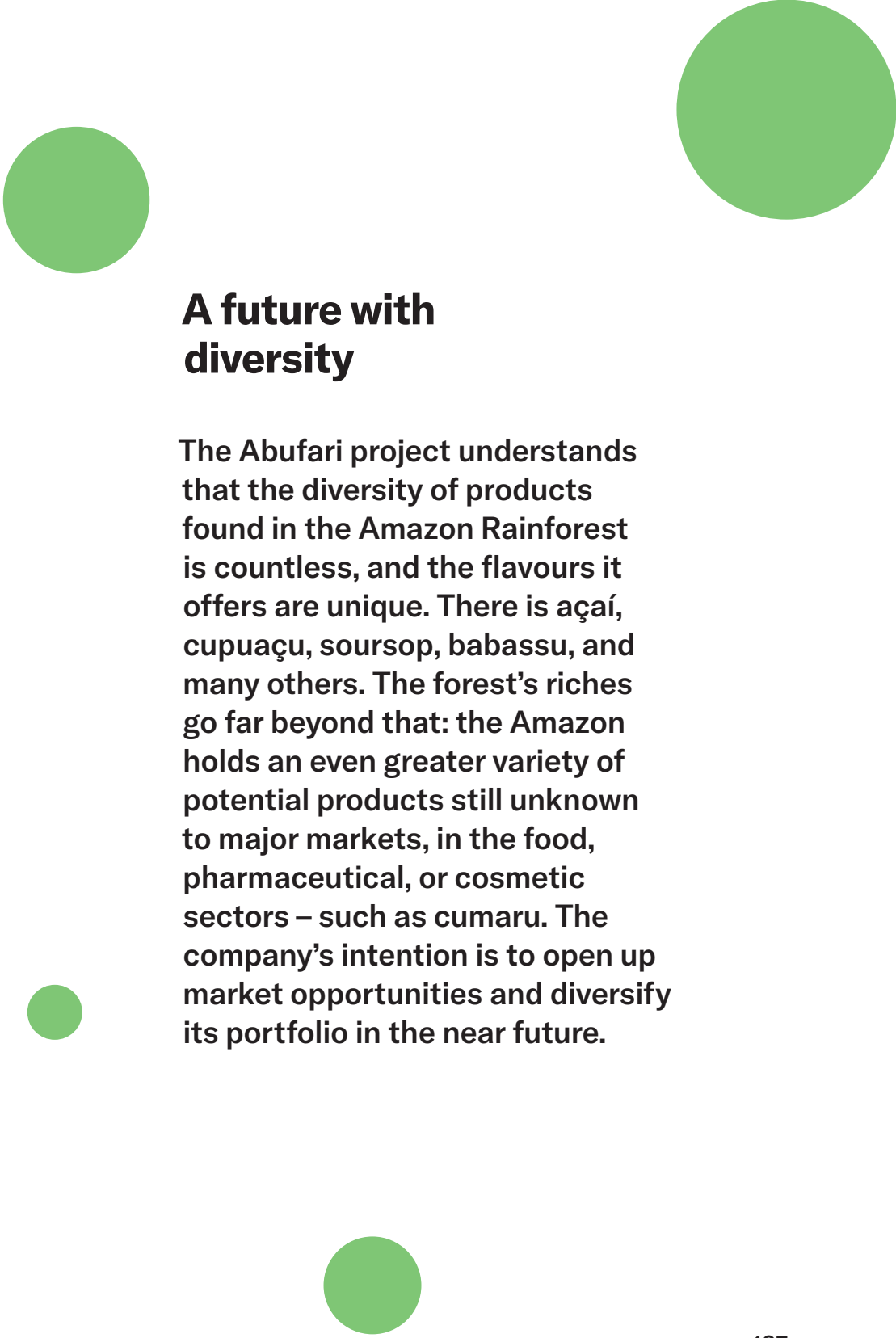
Practices Programme, which trains Brazil nut harvesters directly in the forest, ensuring quality, safety, and respect for natural cycles. These actions reinforce the company's vision that economic development must go hand in hand with environmental education and community empowerment.

Despite the positive results, the expansion of the project still faces the typical barriers of the Amazon Region. Access to financing remains a challenge, as it is not easy to secure sufficient credit to support new agro-extractivist communities. In this case, the strategy has been to diversify funding sources, seeking support from international funds, impact investors, and government partnerships.

Another obstacle is poor infrastructure. Limited transportation, difficult mobility, and communication failures hinder logistics. Given this scenario, the company seeks collaboration with local governments and leverages digital platforms as a way to overcome geographic barriers.

Training is also a sensitive point, as spreading best practices to new regions requires substantial resources. In this instance, the solution may lie in scalable training models by combining digital tools, local instructors, and partnerships with educational institutions. Furthermore, crop variability poses risks to market consistency, making it essential to increase both production volume and product diversification (see *next page*). To mitigate this issue, the company has been investing in mapping new Brazil nut-derived products and in more robust practices for production and supply chain management.

Through this integration, Abufari demonstrates that it is possible to reconcile environmental protection and economic development. The sustainable management of Brazil nuts preserves critical habitats, generates fair income, and strengthens local communities, lessening the pressure to engage in predatory activities. More than just a purely economic enterprise, Abufari's project is an example of how standing forests can become engines of development. If it succeeds in overcoming scaling challenges, Abufari has the potential to become an international benchmark in bioeconomy, inspiring similar initiatives across the Amazon and the planet.

Four green circles of varying sizes are scattered across the page: a medium circle in the top left, a large circle in the top right, a small circle in the bottom left, and a medium circle in the bottom center.

A future with diversity

The Abufari project understands that the diversity of products found in the Amazon Rainforest is countless, and the flavours it offers are unique. There is açaí, cupuaçu, soursop, babassu, and many others. The forest's riches go far beyond that: the Amazon holds an even greater variety of potential products still unknown to major markets, in the food, pharmaceutical, or cosmetic sectors – such as cumaru. The company's intention is to open up market opportunities and diversify its portfolio in the near future.







Cocoa in agroforestry systems, from Bahia to the Amazon



- **Solution**
Community
strengthening

- 
- **Organisation**
Tabôa Fortalecimento Comunitário
(Taboa Community Strengthening),
a non-profit organisation

Tabôa's mission is to strengthen communities by sharing knowledge, facilitating access to financial resources, and encouraging cooperation. Its purpose is to support people and territories in achieving their full potential towards sustainability and socio-environmental justice. Activities began in 2015 in the district of Serra Grande (Uruçuca, Bahia) and in communities surrounding the Serra do Conduru State Park (Pesc). Since 2017, its activities have expanded to other territories, promoting community-based initiatives and socioeconomic enterprises, with a constant focus on generating prosperity, quality of life, and environmental conservation.

One of Tabôa's key features is its blended finance model, which combines philanthropic capital with market-based investment. This solution enables access to affordable low-cost rural credit, paired with technical assistance and primarily intended for cocoa family farmers working in agroforestry systems.

In addition to credit, beneficiaries receive technical support to strengthen more sustainable farming practices, which helps increase productivity, product quality, income, and food security, while also promoting forest conservation and ecosystem services. The Sustainable Agribusiness Receivables Certificate (Sustainable CRA) is the main instrument for scaling up this strategy, which has become a powerful tool for socio-environmental transformation.

Tabôa has developed its own methodology for family farming credit, with simplified, inclusive processes tailored to the rural context. Associated with Technical Assistance and Rural Extension (Ater), this model has achieved near-zero default rates, substantial productivity gains, and a stronger cocoa value chain through low environmental impact practices.

The first Sustainable CRA operation was launched in partnership with the Arapyaú Institute, Gaia Group, and the Humanize Institute, raising R\$ 1.05 million. Though small in scale, it has demonstrated significant impacts and paved the way for new operations. In 2024, a second cycle expanded its reach in Bahia and extended the model to Pará, with support from the Brazilian Development Bank (BNDES), which provided R\$ 4 million in non-re-

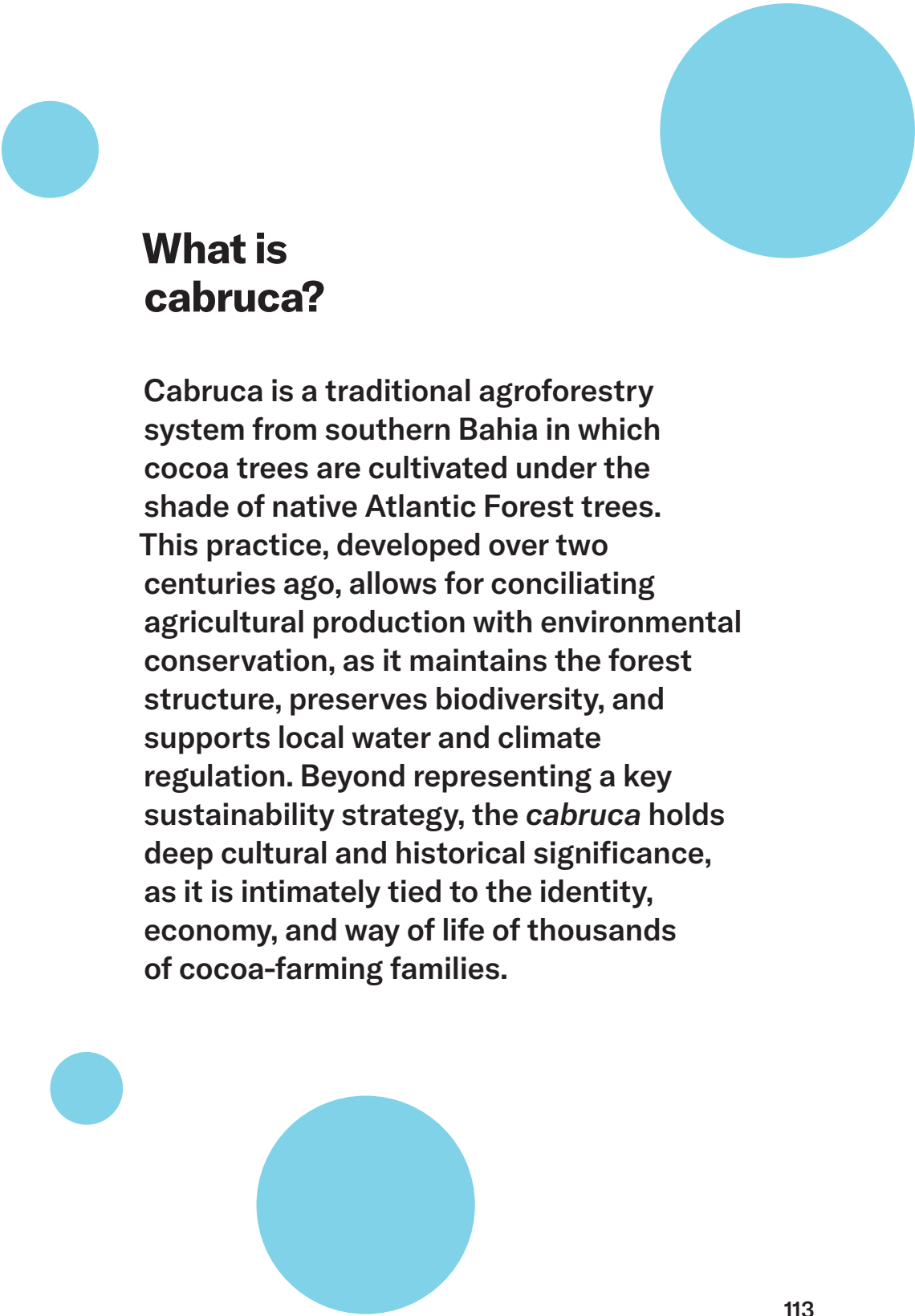
imbursable funds. This investment leveraged nearly six times the amount in third-party resources, raising a total of R\$ 23.7 million (R\$ 10.5 million via CRA and R\$ 13.2 million from other sources).

In 2025, the strategy advanced further with the launch of a R\$ 30 million Credit Rights Investment Fund (FIDC), reinforcing the model's scalability. Although the initiative's main focus is southern Bahia, where traditional cocoa agroforestry systems (*cabruca*) play a central role in local culture, it was expanded to the Amazon biome in 2024 with a pilot project in Pará.

Through the funds acquired via the Sustainable CRA, Tabôa offers loans of up to 36 months, with a six-month grace period, annual interest of 12%, and six-monthly payments. The funds can be used for both agricultural costs and investments.

By 2029, Tabôa intends to benefit 618 family farmers in 25 municipalities in Bahia and Pará by strengthening sustainable cocoa cultivation across 2,000 hectares of agroforests and conserving another 3,000 hectares of native vegetation.

The main challenge has been the high cost of quality technical assistance. To address this, Tabôa has built partnerships with public and private initiatives such as the Baixo Sul Intermunicipal Consortium (Ciapra) and municipal agriculture departments in Bahia, as well as the Solidaridad Foundation in Pará.



What is cabruca?

Cabruca is a traditional agroforestry system from southern Bahia in which cocoa trees are cultivated under the shade of native Atlantic Forest trees. This practice, developed over two centuries ago, allows for conciliating agricultural production with environmental conservation, as it maintains the forest structure, preserves biodiversity, and supports local water and climate regulation. Beyond representing a key sustainability strategy, the *cabruca* holds deep cultural and historical significance, as it is intimately tied to the identity, economy, and way of life of thousands of cocoa-farming families.



A Look at the Global South

- **Solution**

Expanding direct funding to local traditional communities

- **Organisation**

Fundo Casa Socioambiental (Casa Socio-environmental Fund), a philanthropic fund

Environmental destruction has wreaked severe impacts worldwide, but it is the countries of the Global South that suffer the most devastating consequences. Social, economic, and geographic vulnerabilities expose communities and ecosystems to extreme risks. While the climate crisis affects everyone, indigenous peoples, traditional communities, women, children, black and LGBTQIA+ people are among the most impacted. The reason is simple: such groups live in greater socioeconomic vulnerability and have less access to services and resources, even though they inhabit some of the most well-preserved areas on Earth, such as Indigenous Lands.

In philanthropy, one of the greatest barriers to reversing this scenario is the concentration of funds. Data from Casa Socio-environmental Fund and its partners show that 99% of global funding is currently concentrated in foundations based in the Global North, which allocate 88% of these resources to organisations based in their own hemisphere. Only 12% reaches the Global South, home to the most biodiverse biomes and climate regulators. This is the scenario in which Casa Fund has been operating.

For 20 years, the organisation has been applying a unique methodology of direct support to local communities, resulting in more than 4,700 grants to local environmental defenders. The model has been replicated in five other countries in South America and Africa and now integrates a global alliance of 16 local and regional socio-environmental funds, supporting environmental defenders in 50 countries. Casa Fund is also a co-founder of the Rede Comuá (Comuá Network), which brings together 18 social justice funds in Brazil.

The organisation's accumulated experience demonstrates that protecting the planet's most vital biomes – the richest in biodiversity and essential to climate balance – will only be possible by making the communities that inhabit these territories the protagonists of their own solutions, rather than objects of third-party projects. Channeling funds into the hands of thousands of communities is its mission.

The challenge, however, is overcoming the distrust of many funders, who still question the local capacity to manage resources at scale, an unfounded perception that has cost the planet dearly.

To address this obstacle, Casa Fund conducts rigorous audits, publishes impact reports, and produces documentaries to demonstrate the effectiveness of its grants. Another challenge is both financial and structural: the high demand for community support far exceeds the resources available. Although more than 500 groups are funded annually, this only amounts to less than 35% of the applications received.

To mitigate this deficit, Casa Fund invests in the replicability mechanisms of its model by sharing its experience of how local players can lead their own funds to finance their causes. This movement has already led to the creation of five new funds in countries that have grown rapidly, already exceeding 100 donations annually. The organisation expects to inspire another 10 to 15 funds over the next five years to join this alliance, which will exponentially multiply the reach of its impact.

There are also cultural and political barriers. Local communities often face resistance in accessing resources, whether due to institutional bureaucracy or disregard for their traditional knowledge. To overcome this challenge, Casa Fund promotes participatory decision-making processes, in which the communities themselves define priorities and strategies for action. On the regulatory front, inconsistent environmental policies across countries represent another hurdle. Sudden changes in land use rules, protection of indigenous peoples, or regulation of extractivist activities can weaken ongoing projects. To mitigate these risks, Casa Fund actively participates in networks and multisector alliances, bringing data-based evidence into the dialogue with governments and international organisations.

The distance between communities and the international financial system is another practical barrier that limits direct access to global funds. To bridge this gap, Casa Fund bets on a strategy of funding them through local currencies, thus doing away with exchange barriers and ensuring that funds reach communities swiftly and in ways adapted to local realities.



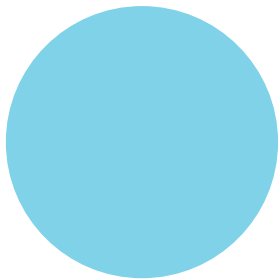
Casa Fund in numbers



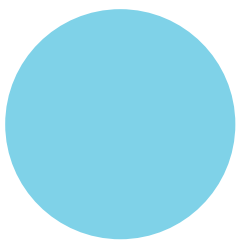
+ 4,700
projects supported



R\$200+
million invested



520+
socio-environmental
organisations and
community groups
supported in 2024



For a low-carbon livestock industry

- **Solution**
Socioeconomic development in Brazil through forest and agriculture valorisation, with a focus on conservation, sustainable use of natural resources, and the generation of social benefits

- **Organisation**
Imaflora (The Institute of Agricultural and Forest Management and Certification), a non-profit organisation

Brazil's agricultural sector is both a cornerstone of the Brazilian economy and one of the largest contributors to the country's greenhouse gas emissions. It accounts for 27.5% of national emissions, reaching as much as 73.1% when land-use change linked to agricultural expansion is directly or indirectly considered. Of the total emissions from the sector's production, accounting only for on-farm activities, cattle farming represents 66.2%, mainly due to enteric fermentation (cow "burps") and animal waste management.

As home to the world's largest commercial cattle herd, Brazil is also one of the leading emitters of methane gas, which contributes substantially to global warming. Reducing methane emissions is a priority in research and initiatives aimed at new technologies and management practices capable of making beef production more efficient and sustainable.

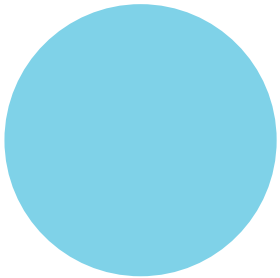
For more than a decade, the Institute of Agricultural and Forest Management and Certification (Imaflora) has been estimating and publishing greenhouse gas emissions data at national, state, and municipal levels, as well as developing mitigation strategies, technical assistance, and technology transfer for farmers. In this context, its proposal is to accelerate the transition of the livestock sector to a low-emission model aligned with Brazil's climate commitments, the NDCs (Nationally Determined Contributions under the Paris Agreement).

The project focuses on practices such as animal farming intensification, pasture recovery, and the adoption of integrated systems, always in dialogue with existing public policies and official announced commitments. One of the main differentiators of the proposal is the implementation of a Monitoring, Reporting, and Verification (MRV) strategy capable of tracking progress on sustainable practices. Beyond measuring results, the MRV framework serves as a platform for sharing production models that can be replicated in different regions of the country. To this end, Imaflora, together with partners – such as Centro de Vida Institute (ICV) for this project – conducts training sessions, workshops, seminars, and webinars by involving farmers, governments, and private companies in a joint effort to share knowledge.

Among the main challenges, Imaflora highlights the need to broaden engagement from farmers and meatpacking plants, simplify monitoring processes, demonstrate the commercial and productivity gains of low-carbon ranching, and ensure financial and regulatory incentives that make this model more attractive than deforestation.

To overcome these barriers, the organisation commits to the following strategies: strengthening communication and outreach with farmers' associations and major companies in the sector; creating accessible tools and demonstration units to showcase the economic benefits of the transition; and supporting government ministries and financial institutions in designing policies and credit lines that encourage more efficient pasture use, improved animal and soil management, in order for low-carbon livestock systems to be expanded.

Through this set of actions, Imaflora contributes not only to reducing methane and other greenhouse gas emissions, but also paves the way for a new model of rural development.



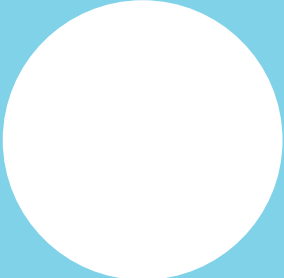
Methane emissions on the rise

Methane emissions in Brazil grew by 6% between 2020 and 2023, reaching the second-highest level on record in 2023: 21.1 million tons. According to a recent report by the Climate Observatory, the main source of this increase lies in pasturelands. Enteric fermentation alone accounted for 14.5 million tons of CH₄ in 2023, the equivalent of 406 million tons of carbon dioxide equivalent (CO₂e), more than Italy's total annual emissions for the same year. This figure is particularly alarming because, although methane remains in the atmosphere for less time than CO₂, its global warming potential is 28 times greater over a 100-year horizon.



Land use under the satellite's eye

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- **Solution**
Mapping land cover and land-use changes across the country to promote conservation and sustainable management of natural resources as a way to combat climate change

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- **Organisation**
MapBiomass, a non-profit organisation
- 

Brazil ranks fifth among the world's largest emitters of greenhouse gases, behind only China, the United States, India and Russia. Unlike these countries, whose emissions are mainly linked to the burning of fossil fuels, 75% of Brazilian emissions originate from land use, deforestation and agriculture. This reality is common in tropical countries, where changes in land cover are the main driver of emissions and environmental degradation. Without halting deforestation and properly managing the territory, it will be impossible to meet the goals of the Paris Agreement.

To reduce emissions, increase carbon removals and, at the same time, improve the management and regeneration of natural resources, it is essential to understand how land use affects critical factors such as biodiversity, soil and water conservation, and climate regulation.

In this context, MapBiomass stands out as a collaborative network of more than 100 local organisations (NGOs, universities, and technology start-ups) that uses satellite imagery, artificial intelligence, and cloud computing, together with field experience, to produce detailed mapping of time series for Brazil and 15 other countries (all of South America, Indonesia, India, and the Democratic Republic of Congo) in order to understand changes in land use in these locations. Each year, new collections of maps are generated with improvements and updates. All data, maps, and methods are made available free of charge, in a transparent and accessible manner to society.

MapBiomass data is used by public institutions, companies, civil society and the media. In Brazil, all major banks use MapBiomass information to block rural credit for deforestation-related activities. The Public Prosecutor's Office also uses the data to bring cases against public bodies that fail to comply with environmental law. The MapBiomass collection includes annual maps and data on land cover and land use in Brazil since 1985, as well as other products, such as mapping of burnt areas, water surface, soils and degradation.

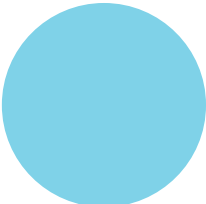
Since 2019, MapBiomass has also produced more than 480,000 deforestation reports – about 2,000 per week – which support direct action against

illegal practices. As a result, the police response rate to cases rose from 5% in 2019 to 54% in 2024. In addition, more than 30,000 financial transactions have been blocked by banks since 2023 due to links to illegal deforestation, preventing losses of over US\$ 1.5 billion.

Another unique feature of the initiative is its ability to replicate the model in other countries. MapBiomass promotes the formation of local networks of tropical institutions capable of providing accurate and timely data to support decisions on land use, sustainable management, and biodiversity conservation.

The main challenges of the project are not barriers, but strategic requirements. The most important is to identify suitable local partners to lead each national network. The process can take six months, as was the case in Chile, or up to two years, as in Indonesia. Additionally, the continuity of the project depends on the free availability of Landsat images (NASA/USGS) and the support of Google Cloud and Google Earth Engine infrastructure, without which large-scale historical processing would not be feasible.

Thanks to collaborative innovation and the strategic use of technology, MapBiomass has established itself as one of the leading global references in land use monitoring and combating deforestation in the tropics.

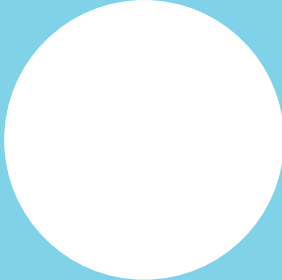
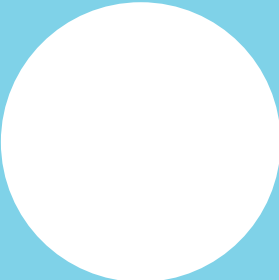


The origin

MapBiomass emerged from a seminar held in 2015, where experts in remote sensing and vegetation mapping were invited by the System of Estimates of Greenhouse Gas Emissions and Removals (SEEG) of the Climate Observatory to discuss a central question: how to produce annual land use and land cover maps for the whole of Brazil in a significantly cheaper, faster and more up-to-date way compared to the methods and practices existing at the time, as well as recovering the history of the last few decades? To this end, it would take unprecedented processing capacity, a high degree of process automation and the collaboration of a community of experts in each area. Based on this, technical cooperation was established with Google, using the Google Earth Engine platform, and a multi-institutional collaborative network was established to develop MapBiomass.



Understanding to preserve

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- **Solution**
TropiKey: Unlocking tropical biodiversity through innovative technology
 - **Organisation**
Brazilian Team, a consortium of multiple organisations
- 

The Brazilian Team (BT) is dedicated to expanding knowledge about the biodiversity of tropical forests by using customized and low-cost technologies that allow for rapid and accurate assessments, especially in remote and under-studied areas. The initiative uses scientific innovation, efficiency, and accessibility to address one of the greatest environmental challenges of our time: understanding and preserving ecosystems whose value remains little known.

Among the solutions developed by the Brazilian team are the use of terrestrial robots and drones equipped with customized devices capable of collecting samples from the forest floor to the treetops. These include traps for insects, fish, and aquatic microorganisms; collectors of water, soil, and branches; as well as high-resolution cameras – including night vision – audio recorders, and climate sensors. The collected samples are analyzed in portable laboratories, enabling rapid sequencing of traces of environmental DNA (eDNA) or diet-derived DNA (iDNA) at reduced costs.

The group also develops methods for 3D mapping of forests, revealing structural details and carbon stocks – fundamental data for understanding ecosystem services and their connections with the bioeconomy. Artificial Intelligence-based protocols classify animal sounds and autonomously identify plant and animal species, thus accelerating the production of scientific knowledge.

Another aspect that sets BT apart is the integration of academic bases, citizen science, and the traditional knowledge of local communities, an approach that strengthens a replicable, sustainable, and scalable model for biodiversity assessment. In addition, the technologies used are connected to socioeconomic models that promote social inclusion, sustainable use, and the ethical application of science. In this process, traditional and indigenous communities have their knowledge valued and recognised, reinforcing the role of standing forests as assets for the future.

The challenge, however, is urgent, as biodiversity loss in tropical forests is advancing faster than the time science requires to understand it. With

limited access to remote areas and the lack of specific technologies to fill identification gaps, there is a risk of losing species with potential to provide solutions in sectors such as food, health, and technology, as well as key species for ecosystem regulation. Despite progress, the expansion of BT-developed solutions still faces barriers of different kinds. On the technical front, the limited battery autonomy of drones restricts coverage of large forest areas, while the scarcity of tropical species data in public databases hinders the use of artificial intelligence for species identification. To overcome these challenges, BT plans to invest in efficient energy storage technologies and to expand databases with images, sounds, and genetic sequences.

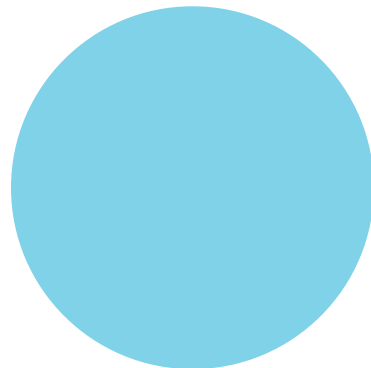
Financial barriers also weigh heavily: the high cost of sensors, traps, and DNA sequencers limits access for local initiatives. The strategy, in this case, is to seek partnerships with the private sector, funding opportunities, and low-cost solutions that make use of local materials and labour.

On the regulatory front, restrictions on the use of drones and the collection of biological samples can delay operations and limit work in remote regions. In order to address such an obstacle, BT maintains a dialogue with regulatory agencies, highlighting the environmental and socioeconomic value of the technologies used to pursue increased flexibility.

When it comes to cultural and engagement barriers, some communities show initial resistance to adopting new technologies. To address this challenge, the team invests in capacity-building processes, project co-creation, and strengthening community leadership, ensuring both positive impact and the replicability of the solutions.

The group believes that the lack of knowledge about tropical forests limits the ability to preserve them, given that we tend to protect only what we know. The technologies developed by BT have already revealed the richness and complex interactions of tropical forests, helping to prevent irreversible losses and to emphasize the value of conservation as an alternative to deforestation.

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- **The Brazilian Team is a multidisciplinary collective bringing together biologists, scientists, communication professionals, ecologists, economists, engineers (agricultural, data, electrical, forestry, mechanical, and robotics), environmental managers, IT specialists, and mathematicians from Brazil, Colombia, France, Germany, Spain, Portugal, the United Kingdom, and the United States.**









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