



reservas
VOTORANTIM

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Opening Letter



Reservas Votorantim originated out of the pursuit for a better way to manage the preserved territories of the various companies under the umbrella of Votorantim S.A., to ensure conservation while generating resources for their maintenance.

The company's experience managing preserved areas goes back a decade to the creation of Legado das Águas, an Atlantic Forest reservation in Vale do Ribeira (São Paulo state), and Legado Verdes do Cerrado in Goiás state. This experience of managing preserved areas has enabled the company to create a model for multiple use of the territory, which evaluates an area's potential by integrating economic activities, forest conservation and local development.

Currently, Reservas Votorantim is a nature-based company that offers its clients customized solutions based on the possibilities of each territory, enhancing the value of that area from a reputational and economic standpoint.

Reservas Votorantim was officially introduced to the market in 2022 when its initiatives were widely promoted. We received a certification for an unprecedented REDD+ project in the Brazilian Cerrado, issuing the first carbon credit from preserved forests for that biome. Through another innovative project, we developed a methodology to enable payment for ecosystem services (PES), including carbon, in the Atlantic Forest.

In addition to carbon credit projects, Reservas Votorantim also drives value and creates solutions from the consolidation of environmental legislation. This includes ecological restoration (in which Reservas is a market reference) where we develop several projects for clients not only focused on voluntary reforestation but also on environmental compensation; and Legal Reserves, where we provide legal and technical support in regularization processes and compliance through territory leasing. These two fronts promise solid growth prospects starting in 2023.

Bioprospecting has also gained strength and is being widely studied by the company as Reservas Votorantim has one of the largest Atlantic Forest genetic banks known to exist, capable of generating bioproducts for the pharmaceutical and cosmetics industries.

The experiences and learning from across the years consolidated, in 2022, that Reservas Votorantim is a major developer of green economy projects and initiatives in Brazil. We have the potential to deliver the best nature-based solutions to both national and international markets, combining biodiversity conservation with business generation, a testament to the value of a standing forest.

David Canassa
Executive Director at Reservas Votorantim

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History

Created in 2015, Reservas Votorantim manages preserved territories by finding nature-based solutions.

Operational Model

Our business model develops the multiple use of land, focusing on conservation and biodiversity enhancement initiatives.

Environmental Initiatives

We combine traditional business strategies with those of the new economy, reconciling forest protection with the sustainable use of natural resources.

Social Footprint

Reservas Votorantim's social footprint respects the aptitudes and talents of each region where the company manages territories.

Governance

We inherited not only Votorantim's corporate name, but also its history, values, and management model and, therefore, we adopt the same guidelines, policies and codes of conduct.

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Legado das Águas

Located in Vale do Ribeira (São Paulo state), Legado das Águas, Brazil's largest private Atlantic Forest reserve, preserves the forest and encourages local production chains.

Legado Verdes do Cerrado

Located in Niquelândia (Goiás state), the reserve stands as a new sustainable development and conservation model for the Cerrado biome, combining traditional activities with the new economy.

Pátio Caeté

Located in São Paulo capital city, it is a center for the sale and distribution of plants and trees from the Atlantic Forest and other biomes, fomenting landscaping with native plants.

In the wake of the future

Biodiversity conservation and business generation walk side-by-side in green economy, revealing the value of the standing forest.

History

Votorantim has opted, throughout its history, for acquiring land that was not limited to the needs of its undertakings. The company maintains highly preserved forest areas across Brazil, strengthening its commitment to protect natural resources.

In order to manage part of these territories and find nature-based solutions to unite biodiversity conservation and business, in 2015 the first step was taken towards the future creation of Reservas Votorantim, a developer of green economy projects. The company was presented to the market in 2022 and currently develops sustainable businesses guided by the concept of multiple use of land, operating in segments such as carbon credits, legal reserve and biodiversity, among other markets.

Building a legacy

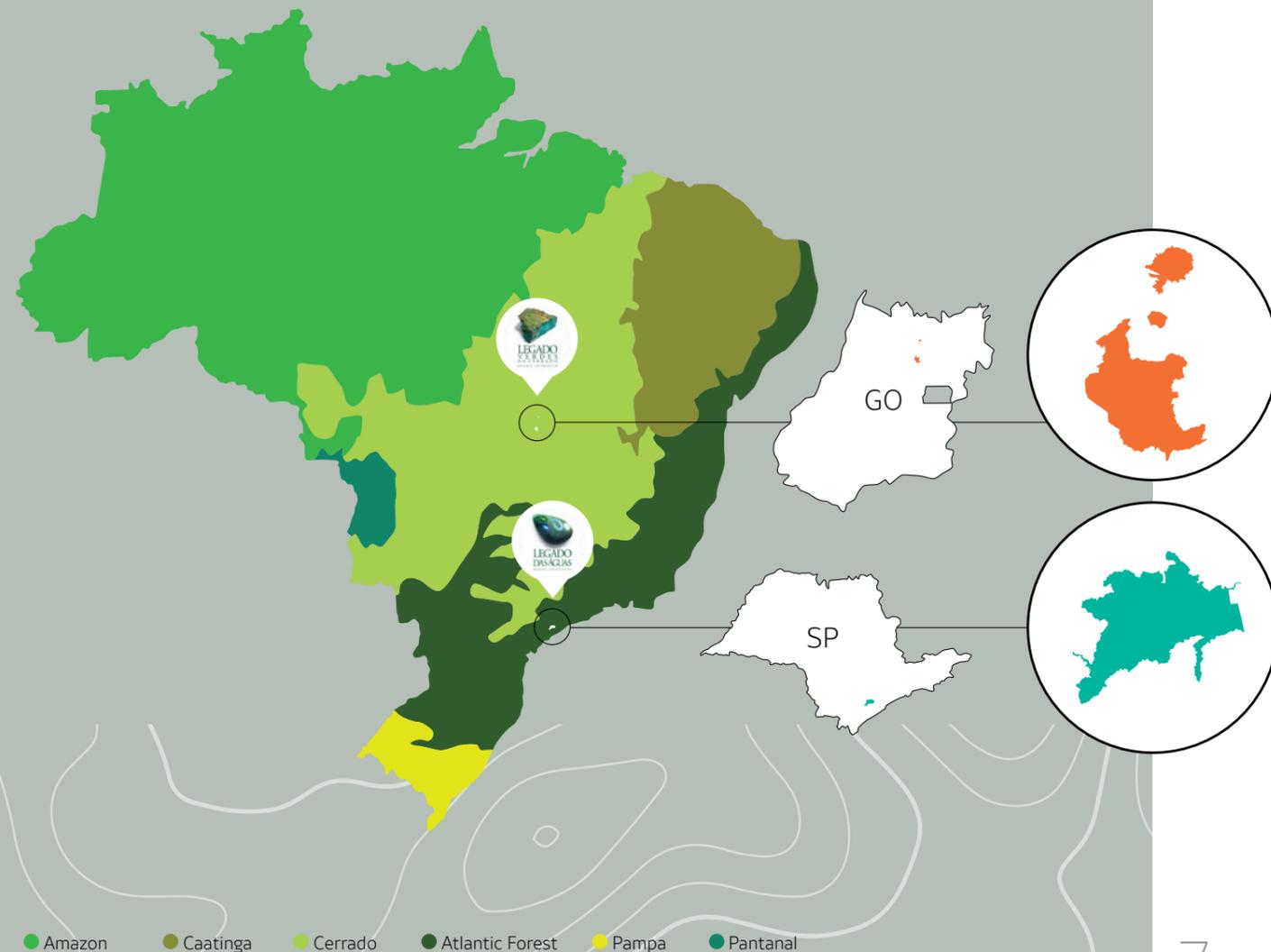
This story began more than 50 years ago when Votorantim acquired a number of properties covered by dense forest cut by the Juquiá River in Vale do Ribeira, where it built seven Hydroelectric Power Plants to supply the aluminum plant of Companhia Brasileira de Alumínio (CBA), located nearby. The company already understood back then that preserving the largest forest area possible on the riverbanks would be the only way to ensure water availability for the future.

In 2012, four companies in Votorantim's portfolio - CBA, Nexa, Votorantim Cimentos and Auren (former Votorantim Energia) - joined forces to turn this 31,000-hectare area into Legado das Águas, institutionalized through a partnership with the São Paulo state government. Since then, Votorantim has been committed to protecting the area, thus promoting scientific studies, environmental education, public use, new economy initiatives, and socio-economic development, as well as protecting endangered species in the region.

In 2015, the reserve began to be managed by Reservas Votorantim and, ten years later, the innovative initiative of Legado das Águas proves it is possible to generate responsible business with the standing forest while preserving the area and fostering new production chains that contribute to land development.

This management model for preserved areas is now also being used at Legado Verdes do Cerrado, a private reserve created by CBA in 2017 in the city of Niquelândia, Goiás state.

Reservas Votorantim currently owns 130,000 hectares of land under management, where it combines economic activities and native forest conservation, proving that it is possible to associate preservation and revenue generation with ESG impact.



2016

COP13-COPMOP8-COPMOP2
CANCUN, MEXICO 2016



First participation as Reservas Votorantim at the COP on Biodiversity (COP 13), speaking about biotechnology;

2017



Public use implemented at Legado das Águas as an economic activity for multiple use of the land;

2018



First Forest Restoration projects and holding of the first **Legal Reserve Forum**;

2019



Pátio Caeté, a space supporting the production of Legado de Águas' Biodiversity Center and the sale of plants from the Brazilian biodiversity, is inaugurated in the city of São Paulo;

2021



Reservas Votorantim structures itself to operate in the carbon market, studying opportunities for PES and REDD+;

2022



Reservas Votorantim is positioned as a company that provides nature-based solutions for multiple use of land;

Entry into the carbon market with the announcement of REDD+ Cerrado and Carbonflor PES, a methodology for payment for ecosystem services, including forest carbon;

Participation in the climate and biodiversity COPs presenting Carbonflor PES.

2020



Legado das Águas' Case presented at the World Economic Forum;



Reservas Votorantim gives a lecture at **COP 14 on Biotechnology and Traceability** and at COP 24, on the importance of forests in carbon sequestration;



Reservas Votorantim enters the consulting market for multiple use of land, applying its business model in other territories;

2012



Creation of Legado das Águas in an Atlantic Forest region in Vale do Ribeira, São Paulo state;

2015



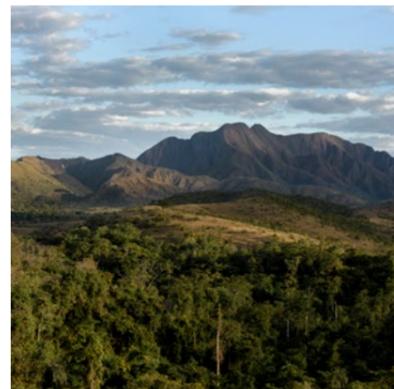
Creation of Reservas Votorantim;



Inauguration of Legado da Águas' Biodiversity Center, the first production activity of the business model applied in the Reserve;



Biotechnology advances at Legado das Águas with DNA sequencing of 57 native Atlantic Forest plants;



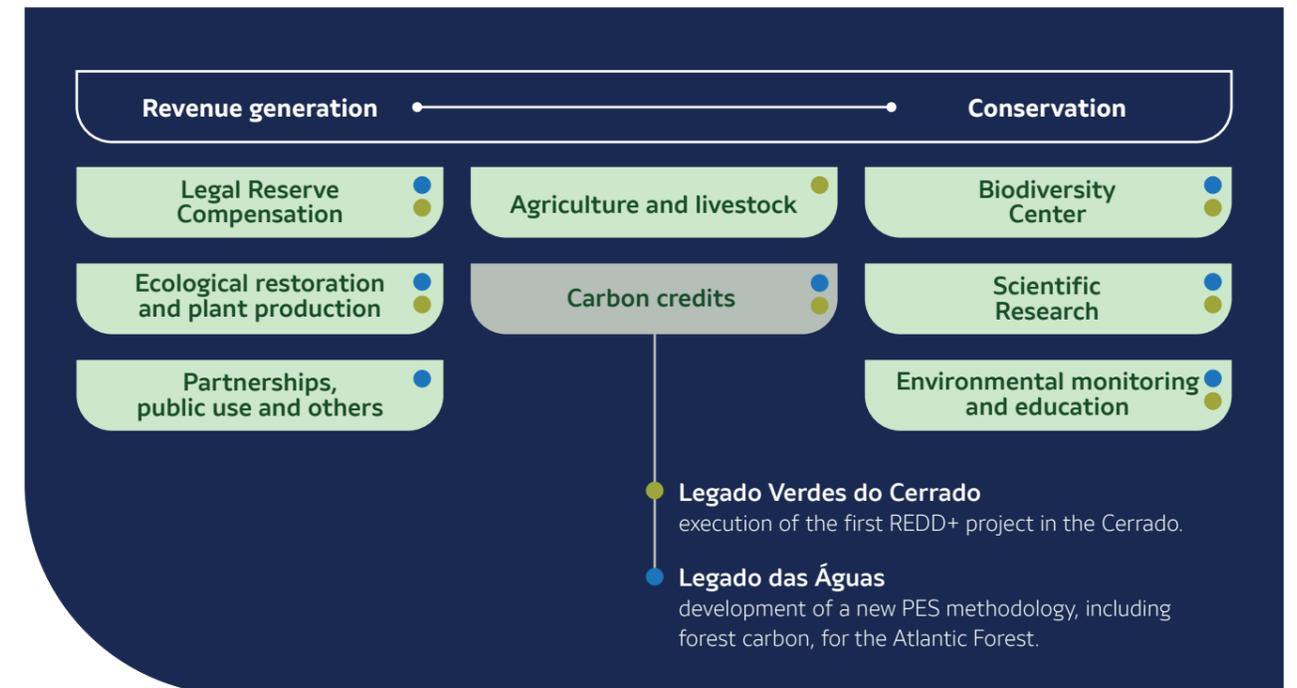
Creation of Legado Verdes do Cerrado in an area owned by CBA, in Goiás state.

Operational Model

Reservas Votorantim develops a business model based on multiple use of land where initiatives for preserving and enhancing biodiversity such as scientific research and socio-environmental projects are developed at the same time as sustainable economic activities, like carbon credits, plant production, legal reserve compensation or public use.

That effort preserves the area itself as well as encourages new local production chains, generating shared value for the company and the community.

Business model of the reserves Forest and Biodiversity Conservation



Land management

Reservas Votorantim manages territories adopting an innovative new economy model, developing activities that preserve biodiversity while generating economic potential. These activities include managing forest reserves, developing strategies for multiple use of land and legal reserve compensation.

Biodiversity Initiatives

We map the richness of the biodiversity within the reserves under our management through scientific research, identifying the forest's potential with the support of researchers and universities. In addition, we cultivate species of the native flora from the biomes where we operate to offer sustainable solutions for ecological restoration initiatives.

Carbon projects

The success of actions to mitigate climate change finds support on sustainable management and the conservation of forests and their biodiversity. By participating in Brazil's carbon credit market, Reservas Votorantim leverages studies to unlock the generation of carbon credits in new biomes and fosters innovative methodologies that find in forest protection another viable alternative to preserve biodiversity, in addition to acting on other fronts of this market.

We manage more than 130,000 hectares of land in Brazil's Atlantic Forest, Cerrado, and Pantanal biomes, betting on the inter-relationship between carbon and biodiversity to develop activities, research, and actions focused on forest conservation.

It is worth mentioning that we have implemented the first REDD+ project in the Brazilian Cerrado and contributed to the development of a Payment for Ecosystem Services (PES) methodology in the Atlantic Forest, including carbon, acting as a pioneer in the generation of carbon credits in these biomes.

Services and products

Carbon credits

Reservas Votorantim generates carbon credits from preserving the forest or by planting new forest areas.

Preserved forest: it identifies potential non-timber products, conducts bio-prospecting and studies genetic matrices, seeking opportunities that provide resources for maintaining biodiversity and promoting integration with communities.

Ecological restoration: the planting of native forests helps companies comply with their sustainability commitments by neutralizing the carbon footprint of their operations and/or events in projects aligned with ESG and SDG criteria.

Credit management: creates opportunities for the generation of credits, manages long-term agreements, and develops strategies to take advantage of the best conditions in the carbon market.

Legal Reserve Compensation

Legado das Águas and Legado Verdes do Cerrado are available for Legal Reserve compensation through leasing. In this system, rural property owners who need to comply with environmental protection legislation lease native vegetation areas at Legado das Águas or Legado Verdes do Cerrado, depending on the type of biome that needs to be recovered (Atlantic Forest or Cerrado). Reservas Votorantim is responsible for managing and maintaining the leased area.

Production of native plants

Our goal is to take the native forest back to degraded territories and urban centers. The Biodiversity Centers of the reserves we manage have nurseries with capacity to produce 450,000 specimens per year, cultivating Atlantic Forest and Cerrado species with a focus on landscaping and ecological restoration.

Advisory in multiple use of land

Based on its experience managing Legado das Águas and Legado Verdes do Cerrado, Reservas Votorantim has developed a business model for preserved areas from the standpoint of multiple use of land. As a result, the company can design projects to take advantage of these areas, covering all of a territory's potential, and integrating traditional and new economy activities, biodiversity conservation, and the relationship with local communities.

Public use and space rental

Legado das Águas is open for public use since 2019. It is one of the only destinations in Brazil with infrastructure to offer tourism in the heart of the Atlantic Forest, with lodging and activities for different audiences, such as trails, water tours, viewpoints, and canoeing. The structure can also be used by companies to hold events or audiovisual productions, with the Atlantic Forest as a backdrop.

Environmental Education

An important aspect of Reservas Votorantim's business model is raising awareness on the importance of protecting Brazil's biodiversity.

Legado das Águas is open to public use and offers itineraries for environmental education activities. The goal is to foster participants' direct interaction with nature and encourage learning through practical activities that contribute to understanding the importance of forest and water resources conservation.

The reserve has a team of professionals trained to offer a true experience in the Atlantic Forest at Legado das Águas, offering an inn, auditorium, and a restaurant to welcome families, schools, and institutions. Meanwhile, the Planting Tomorrow (*Plantando o Amanhã*) program carries out environmental awareness activities not only at Legado das Águas but also at schools and companies, promoting the planting of native species, combined with discussions on sustainability and ESG issues.





Managed areas

Reservas Votorantim currently manages two environmental reserves and a space for selling native plants. It is also responsible for other territories in Votorantim's portfolio, for a total area under management of more than 130,000 hectares.



Legado das Águas

Created in 2012, Legado das Águas is Brazil's largest private Atlantic Forest reserve covering 31,000 hectares spread across the municipalities of Juquiá, Miracatu and Tapiraí, in Vale do Ribeira, in the interior portion of the state of São Paulo. Located just over 100 kilometers from the city of São Paulo, Legado das Águas is a rare, highly preserved area crossed in its entirety by the Juquiá River. Legado das Águas' mission is establishing a new model of private protected area, generating social, environmental, and economic benefits in a sustainable way. This can be achieved by reconciling forest protection and the development of scientific research with new economy activities, such as native plants production and public use.



Legado Verdes do Cerrado

It is a 32,000-hectare reserve owned by Companhia Brasileira de Alumínio (CBA). Legado Verdes do Cerrado, located in the city of Niquelândia, Goiás state, approximately three hours from Brasília, is managed by Reservas Votorantim and combines traditional and new economy activities with the purpose of adding value and preserving the forest.

Approximately 80% of the reserve's territory is composed of native cerrado, divided into two hubs (*núcleos*). The hub called Núcleo Engenho covers 22,000 hectares where scientific research and environmental education actions are carried out. It also promotes the development of new economy activities, such as plant production, legal reserve compensation, and the first REDD+ project of the Cerrado biome, generating carbon credits. The remaining 5,000 hectares are allocated to livestock and agricultural operations, under nature-integrated management.

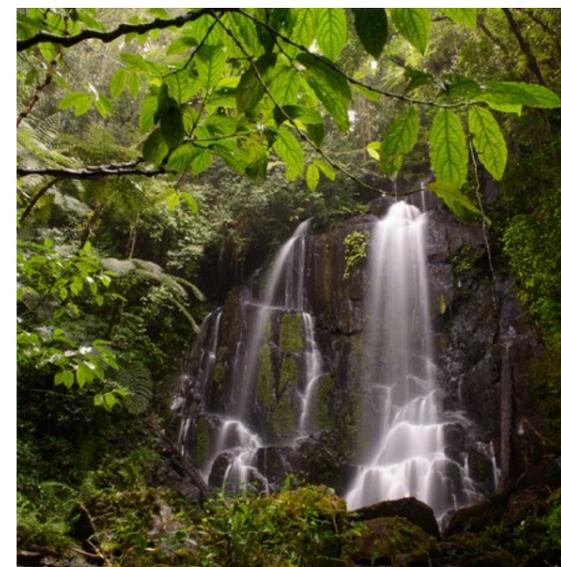
Partially bathed by the Serra da Mesa Lake, the five-thousand-hectare Núcleo Santo Antônio Serra Negra maintains the native cerrado untouched.



Pátio Caeté

Located in São Paulo capital city, Pátio Caeté is a space dedicated to the sale of plants and landscaping supplies focused on Brazil's biodiversity, also functioning as a distribution center for the plants produced at Legado das Águas. Managed by Reservas Votorantim and operated in partnership with Giovanna Paisagismo, Pátio Caeté aims to supply demand for native, and often rare, species that secure environmental and economic benefits to landscaping and ecological restoration projects.

Pátio Caeté



Legado das Águas



Legado Verdes do Cerrado

Environmental Initiatives

The standing forest is also a business for Reservas Votorantim. We combine strategies for the sustainable development of traditional and new economy businesses, reconciling forest protection with the sustainable use of natural resources. Learn more about our projects and businesses that combine revenue generation with biodiversity conservation.

Carbon projects

Reservas Votorantim leads two unprecedented projects aimed at fighting climate change in the country. One of them certified the first REDD+ project in the Brazilian Cerrado.

REDD, which stands for Reducing Emissions from Deforestation and Forest Degradation, is a market instrument through which owners of native forest areas can emit carbon credits and sell them to companies that need to offset their emissions, thus receiving payment for preserving the vegetation. As of 2015, this concept also began to encompass sustainable forest management activities and increasing forest carbon stocks in developing countries, when the mechanism came to be called REDD+.

In 2022, Companhia Brasileira de Alumínio (CBA) and Reservas Votorantim issued the first Cerrado carbon credit from preserved forests – until then, carbon credits were only available for the Amazon biome. This initiative was made possible through Legado Verdes do Cerrado, the first area to integrate the REDD+ Cerrado Program, developed in partnership with the companies ERA (Ecosystem Regeneration Associates) and ECCON Soluções Ambientais. The certified area totals 11,500 hectares, offering an average annual capacity of 50,000 carbon credits. The first issuance was in 2022 and totaled 316,000 carbon credits that were generated for the period from 2017 to 2021.

A share of the funds from the sale of carbon credits at Legado Verdes do Cerrado will be allocated to the Reserve's surroundings in scientific research investments, actions to maintain and preserve biodiversity, training and fighting forest fires, as well as incentive programs for new economy businesses.

The other innovative project was the development of Carbonflor PES, a methodology to enable the Payment for Ecosystem Services (PES) in the Atlantic Forest, including carbon. It creates a method to value the environmental services provided by the forest, considering forest carbon, the existing biodiversity, water availability and other services that can be identified and measured.

The development of this methodology in partnership with ECCON Soluções Ambientais was made possible thanks to the Payment for Ecosystem Services Law, approved in 2021 and regulated in 2022, which recognizes carbon associated with forests and biodiversity preservation as modalities eligible for remuneration. Submitted to public consultation, the methodology received contributions from environmentalists, the scientific community, and the general public.

In December 2022, Carbonflor PES was launched in a presentation at COP 15 in Montreal, Canada, the conference held by the countries who signed the United Nations Convention on Biological Diversity (CBD). The methodology was also presented at COP 27, the annual conference of the United Nations Framework Convention on Climate Change, held in Egypt.

After a period of public consultation and road show, Carbonflor PES has been finalized with the goal of becoming a reference in the PES market, encouraging further technical discussions, and assessing whether the methodology should be applied in territories managed by Reservas Votorantim.



Cerrado

Biodiversity Center

Reservas Votorantim applies a robust native plant production model in its territories, offering research and the study of best practices for cultivating species as a differential. This gave rise to the concept of Biodiversity Centers, which goes far beyond simple nurseries.

Legado das Águas and Legado Verdes do Cerrado have sites for native plants' research and production, with the goal of developing and improving them to be used in forest restoration or landscaping projects. This is pioneering work in Brazil, where there is little research associated with the production of native plants.

The Atlantic Forest Biodiversity Center (CBMA) was inaugurated in 2016 at Legado das Águas. When choosing to invest in species that are not produced by other nurseries, it was also necessary to develop previously non-existent production and cultivation protocols. Due to the experience gained over the years, CBMA reached production capacity fit to deliver not only trees, but several species that can be combined to create a small-scale reproduction of the forest environment in real estate developments, companies or reforestation projects. The Center also cultivates rare, difficult to reproduce, endangered species.

One of CBMA's focuses is forest restoration, supplying tree seedlings for forest recovery projects carried out in degraded locations, either to comply with legal commitments or to contribute to voluntary initiatives.

Another focus is landscaping with plants that are native to the Atlantic Forest with the mission of bringing the forest back to urban centers.

The Atlantic Forest Biodiversity Center has capacity to produce 200,000 specimens per year, of up to 140 different native species. An important differential is traceability: plants receive a QR Code and, with a cell phone in hand, it is possible to check all the stages of the production chain, including plants' origin in the forest, showing that seeds were collected in accordance with the legislation.

Since its creation, Legado Verdes do Cerrado took over the commitment to reproduce native species of the biome for various purposes within the new economy. Inaugurated in 2018, the Biodiversity Center has annual production capacity of up to 250,000 seedlings, catering to different types of projects aimed at recovering and restoring environments in the Cerrado and urban landscaping. The Center grows more than 50 different species, including *Brazilian peppertree* (aroeira), *Parapiptadenia rigida* (angico), *Dipteryx alata* (baru), *Vellozia compacta* (canela-de-ema), *Eugenia Luschnathiana* (pitomba), *Syagrus oleracea* (guariroba), *Caryocar Brasiliense* (pequi), and *Handroanthus albus* (ipê). The plants produced meet the demand of partners of the Reserve, institutions and rural landowners, as well as municipalities in flora recovery projects and urban landscaping.



Atlantic Forest Biodiversity Center



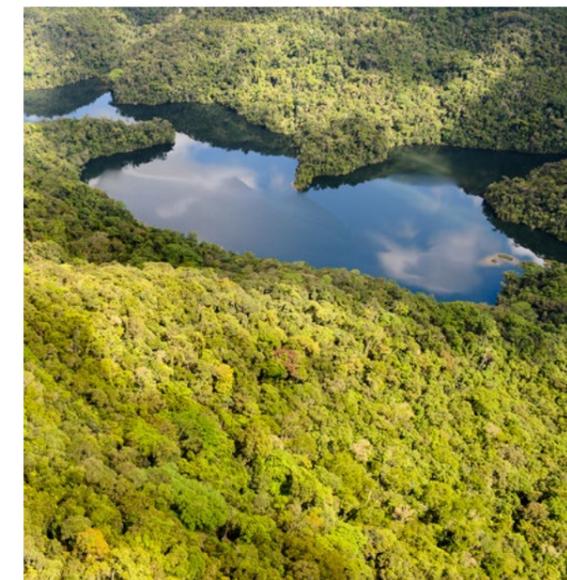
Cerrado Biodiversity Center

Legal Reserve

In accordance with the Forest Code, rural landowners with pending environmental issues need to regularize their Legal Reserve, i.e., the area in their property allocated to preserve native vegetation. Rural owners must decide whether to create a Legal Reserve on their own land, reforesting the corresponding area, or if they will make a compensation, using an existing native vegetation area on another property. This option fits the Legal Reserve business model proposed by Reservas Votorantim.

Through this model, rural property owners lease an area at Legado das Águas or Legado Verdes do Cerrado that is equivalent to their required compensation. Reservas Votorantim is responsible for managing and maintaining this area, protecting the territory from threats such as invasions, deforestation or fires.

At Legado das Águas, for example, the first Legal Reserve agreement was established in 2021 to compensate for 42 hectares. In 2022, leased area totaled 370 hectares, directly contributing to regularize 11 rural properties. The consolidation of environmental legislation offers great potential for growth in the environmental compensation market for the upcoming years.



Ecological restoration

The ecological restoration of Brazilian biomes is intrinsically linked to Reservas Votorantim's mission: to be a company that provides nature-based solutions. Our current forest recovery projects are run by the Biodiversity Centers of Legado das Águas and Legado Verdes do Cerrado. However, we can also provide solutions in regions far from Legado das Águas or Legado Verdes do Cerrado, or even in other biomes, developing projects with local partners.

In some projects carried out by Legado das Águas, partner companies voluntarily finance planting. One of these projects, developed in partnership with the NGO Iniciativa Verde (Green Initiative), is carried out in the Jurupará State Park, a public conservation area covering 26,000 hectares adjacent to Legado das Águas. There are large areas in this park needing forest restoration and recovering them is crucial to connect remaining areas of the Atlantic Forest. Over the course of four years, the project will restore 164 hectares of forest, employing local labor in seed collection and planting. Another voluntary planting project financed by the company Nexway was implemented in 2022 also in the Jurupará State Park to restore a six-hectare degraded area. In 2022 as a whole, we implemented restoration projects in 125 hectares of Atlantic Forest and have another 300 contracted. More than 45 hectares were restored in the Cerrado.



One of the forest compensation projects undertaken by Reservas Votorantim in 2022 was contracted by Votorantim Cimentos, achieving an annual reforestation target of 32 hectares in the unit located in the municipality of Votorantim, São Paulo state. Additionally, Reservas Votorantim assumed the responsibility of maintaining a 64-hectare area that was planted in previous years.

One of the restoration projects carried out at Legado Verdes do Cerrado (LVC) is Vazante Verde, a partnership between Legado Verdes do Cerrado, Nexa Resources (a company in the portfolio of Votorantim S.A.) and the city of Vazante (Minas Gerais state). To restore the original biodiversity of Vazante, LVC offered native species such as *Parapiptadenia rigida* (angico), *Brazilian peppertree* (aroeira), *Genipa americana* (jenipapo) and yellow *Handroanthus albus* (ipê) for urban forestation. Approximately 320 trees were planted in the initial phase. The plan is to plant a total of 10,000 trees over the course of the project in the upcoming years, making the city one of the few Brazilian municipalities whose trees are species from the Cerrado biome.

Legado Verdes do Cerrado also participates in the CBA Reflora Program, a partnership between Companhia Brasileira de Alumínio (CBA), the Votorantim Institute, and Reservas Votorantim to promote reforestation and ecosystem recovery. Aimed at small and medium-sized rural producers, the project provides seedlings and technical training to assist owners with their planting and monitoring, backed by CBA's supervision and technical support. The project focuses on rural landowners in the regions of Niquelândia, Vale do Ribeira (SP) and Zona da Mata Mineira, in addition to other municipalities interested in reforesting degraded areas in the states of Goiás, Minas Gerais, Paraná and São Paulo. In addition to the large-scale forest recovery projects, Reservas Votorantim promotes the Planting Tomorrow (*Plantando o Amanhã*) initiative, carried out through Legado das Águas. The goal is to raise environmental awareness and promote engagement by planting Atlantic Forest native species, whether at Legado das Águas, public parks, schools, or even inside companies. More than a planting initiative, it is an opportunity to reconnect with nature, through teamwork and reflection on environmental and sustainability-related topics.



Public use

Within the methodology for multiple use of the land recommended by Reservas Votorantim, an essential issue is the involvement of people who live in or around the preserved areas. The goal is to encourage them to contribute to maintain the standing forest, seeking, for that intent, the potential for inclusion that the territories offer. If possible, the ideal is to develop local production chains that include the population, generating income and a sense of belonging and protagonism with the mission of protecting the forest.

Legado das Águas' opening to public use since 2019 contributes to the reserve's strategic goals by playing an important role in the conservation of the territory as it encourages communities to maintain their forests intact, transforming them into a source of income.

Tourism is part of an important production chain for the region. In this sense, Reservas Votorantim has been encouraging the development of an institutional framework in the municipalities within Legado das Águas' territory, helping these municipalities create a Tourist District of Vale do Ribeira. The company also contributes with the hiring of local labor to conduct the activities.

Another aspect of public use is **space leasing**. Thanks to its structure of lodging, auditorium, and restaurant, Legado das Águas can host corporate events and audiovisual productions, including fashion editorials, advertising campaigns, or even reality shows.

Legado Verdes do Cerrado's public use structure has been improving over the past two years. The reserve held several events of **Programa Portas Abertas** (Open Doors Program), hosting social organizations to learn about the structure of the reserve and thus engage the community in important issues related to the Brazilian Cerrado.

Advisory

Reservas Votorantim develops solutions to manage forest areas, implement new economy activities and structure social environmental projects, including carbon credits and ecological restoration projects.

Our advisory arm aims to help owners of large preserved areas increase their properties' profitability, creating a series of opportunities to generate income by maintaining the standing forest. Based on the experience of managing two large native forest areas, our methodology for multiple use of land shows that it is possible to add value in preserved areas while integrating businesses, the community, and biodiversity conservation.

The first project conducted under this concept is Vazantes Mineiras, created for the company Nexa (one of the founders of Legado das Águas), in Vazante (Minas Gerais state). By combining biodiversity conservation and sustainable economic development, the project envisages actions related to nature protection, sustainable production activities, research, and ecological tourism in a 3,000-hectare area owned by the company in the municipality.



Social Footprint



The Mel do Vale Project (Valley's Honey Project), by Apivale (Juquiá, SP), is supported by ReDes. Below is an online meeting of the Partnership for the Valorization of Education (PVE) aimed at training and qualifying municipal management professionals in the field of Education.



Generating Shared Value

Reservas Votorantim's social footprint strategy was designed to respect the aptitudes and talents of each region where the company manages territories. The model applied seeks to be a catalyst for social and economic initiatives that can contribute to improving education and public management as well as encourage the economic development of the municipalities, generating production chains that foster entrepreneurship in these locations.

Our Social Initiatives program has five major investment goals, the first three, with the support of the Votorantim Institute:

- Encouraging sustainable development through the ReDes Program (Networks for Sustainable Development);
- Local development through the Public Management Support Program (AGP);
- Contribution to public education in the municipalities where the investees in Votorantim's portfolio are located, through the Partnership for the Valorization of Education (PVE);
- Partnerships aimed at positively impacting the community by engaging local and regional people and institutions;
- Involvement of the internal team in building the social planning of portfolio companies.



Crafts work in the community of Ribeirão da Anta, São Paulo state

Local development

To fulfill the mission of generating development while maintaining the standing forests, we must understand the social, historical, and cultural aspects of each region, perceiving how forests fit into this context. In order to exemplify this work format, we can analyze the areas we currently manage.

Legado das Águas is located in Vale do Ribeira, one of the regions with the lowest Human Development Index (HDI) in the state of São Paulo. The mountainous topography of the Valley has made it difficult to use the land for crops and pasture. Consequently, the economy became dependent on timber extraction, subsistence agriculture, and banana crops. Modest economic growth has, to some extent, preserved the Atlantic Forest.

However, all conservation units in the region suffer from human pressure, with irregular entry of people for heart-of-palm extraction and hunting. Initiatives based on command and control, such as increasing surveillance and restricting access, are not sufficient. The solution stems from the concept of creating shared value, developing paths for the sustainable use of the forest that benefit the company, the environment, and society, including the communities and municipalities involved. The study of Legado das Águas' local conditions led to investments in tourism and the institutional development of the cities, supporting the municipalities in the creation of the "Portal of the Atlantic Forest" Tourist District, in Vale do Ribeira.



At Legado Verdes do Cerrado, in turn, we see another scenario. For many years the economic development of the city of Niquelândia, in the north of Goiás, was anchored on mining. Later, it became an agricultural region producing soybean, with many small and medium sized rural landowners.

When Legado Verdes do Cerrado was created, part of its territory was allocated to cattle raising and planting of eucalyptus. The eucalyptus was replaced with soybean and the cattle remained. In addition to being a source of income for maintaining the reserve, these traditional economy activities were part of a larger goal: creating a model to integrate crops, livestock, and the forest. The idea is to show that agroforestry systems can be profitable and that it is possible to produce while preserving nature, promoting that model in the region as a way to preserve the Cerrado.

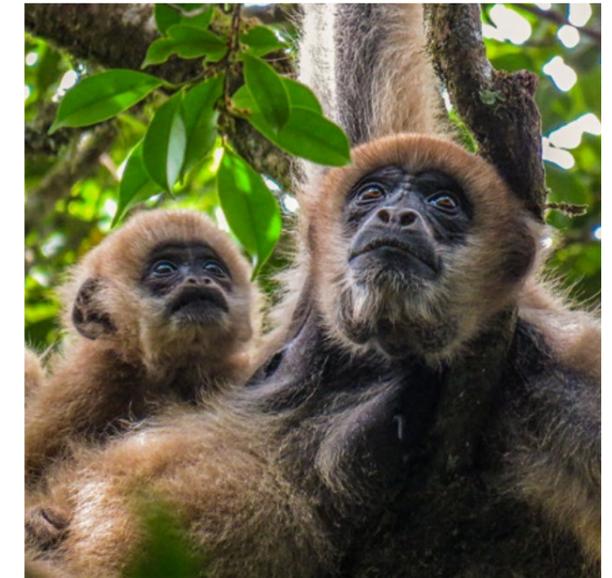
These examples show how Reservas Votorantim's business model is inclusive and based on maintaining a dialogue with its surroundings. By showing that the forest can also be a source of income and economic development, we contribute to creating a conservation culture where the value of biodiversity is perceived and, in fact, shared.

Scientific research and valuing biodiversity

At Reservas Votorantim, our purpose is to promote scientific research in the territories that we manage as this is the key for gaining a deeper understanding of the richness of local biodiversity and outlining conservation strategies, thus building public knowledge to society as a whole. Conservation is made viable when the value of the forest is perceived and ensured in the long term.

In our multiple use of land methodology, all work will always begin with basic research to understand the forest and its relationships with the communities living in the surrounding areas. Basic research in both Legado das Águas and Legado Verdes do Cerrado, for example, has even led to the discovery of new species. In the medium term, basic research can become applied research, enabling a better use of the land and even new products originating from biodiversity.

Scientific research was born virtually together with the reserves at Legado das Águas and Legado Verdes do Cerrado. Since the reserves' foundation, several partners have developed projects that delivered remarkable results on the Atlantic Forest and the Cerrado both for the history of both Reserves and for public knowledge.



Muriquis-do-sul, by Camila Koch (Pró-Muriqui Institute)

Extremely rare species of fauna and flora have been recorded in the highly preserved forest of Legado das Águas, for example, as well as a **large population of muriquis-do-sul** (*Brachyteles arachnoides*), the largest non-human primate in the Americas, classified as critically endangered. These projects have enabled the cataloguing of hundreds of animal and plant species over nearly a decade, opening up new avenues for scientific research and economic opportunities as well.

In our business model, we map the richness of the managed territories' biodiversity, which, combined with biotechnology, opens an opportunity to generate business by exploring the forest's potential to offer active ingredients for medicines, fragrances, and flavors for the cosmetics and food industries. Forest is also business.

Governance



Reservas Votorantim has a Supervisory Board, composed by João Schmidt (Votorantim's CEO) and Mauro Ribeiro Neto (Votorantim's Executive Director), which holds monthly meetings with the Executive Director of Reservas Votorantim, David Canassa, to identify, discuss and ensure the dissemination of the company's values and principles, making decisions in line with the defined strategy and optimizing long-term returns on investments with a positive social and environmental impact.

The compliance guidelines adopted follow those of Votorantim S.A. and are included in our Code of Conduct and the Anti-Corruption Policy, which can be found [here](#).



The company carries out analyses to identify any practices that are not compatible with the established policies before contracting suppliers, thus preventing possible cases of non-conformity. We also seek to strengthen relationships with local suppliers, both in Legado das Águas and Legado Verdes do Cerrado, prioritizing products and services that come from within the territories.

Reservas Votorantim's technical staff includes employees from various areas, such as agronomists, administrators, lawyers, journalists, tourism experts and biologists. These professionals work in our corporate areas and managed territories, forming a multidisciplinary team capable of offering the best solutions in land management.

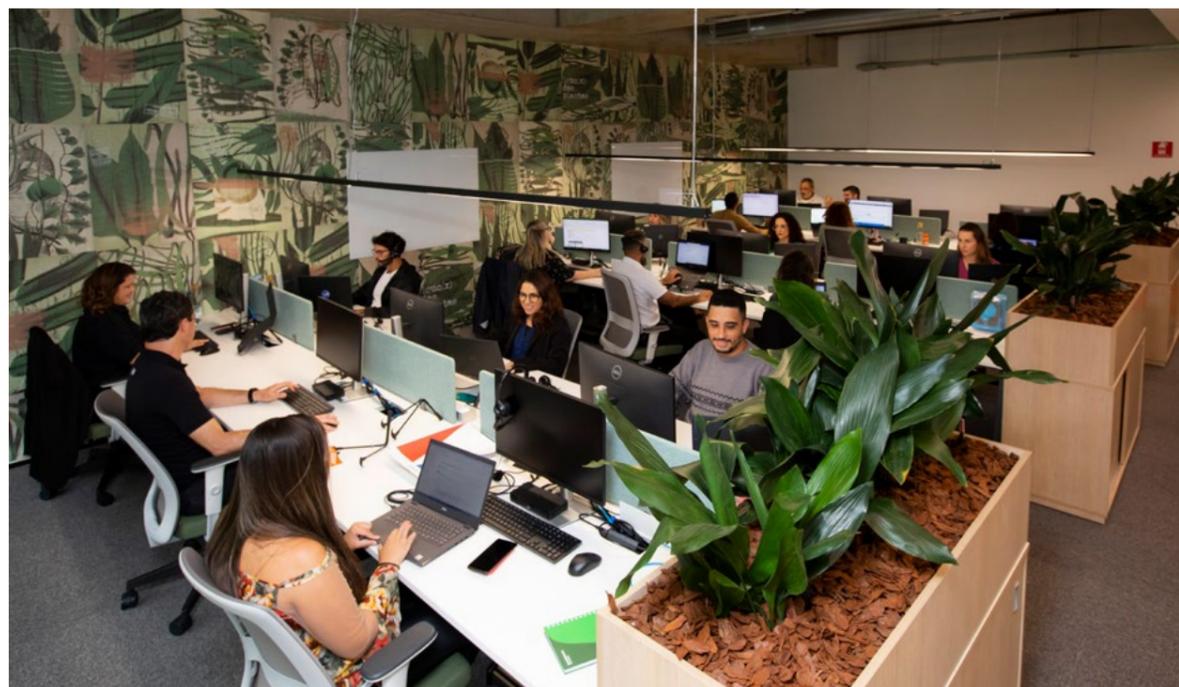
We have inherited not only the Votorantim name, but also the history, values, and management model of a century-old company.

The company holds annual events such as Diálogos (Dialogues), Technical Meeting, and Semear (Sowing), focused on sharing information with its stakeholders. It believes in the importance of maintaining an open dialogue with the civil society, public authorities and partners in order to share the main results of research and social and economic development projects carried out in the territories where it operates.

To this end, it participates in several regional initiatives. At Vale do Ribeira (SP), one of the main ones is the Atlantic Forest Great Reserve, integrated through Legado das Águas. This initiative encompasses more than 150 public and private conservation units spread across the states of Santa Catarina, Paraná and São Paulo, aiming to foster actions to protect and preserve this territory. The company is a full member of the Ribeira do Iguape and South Coast Water Basin Committee. The Jiquiá River, which crosses Legado das Águas, is one of the main rivers of this basin. It also participates in the technical chambers of Tourism and Education of Codivar (Intermunicipal Development Consortium of the Municipalities of Vale do Ribeira and South Coast).



legadodasaguas.com.br/relatorioODS



Office of Reservas Votorantim in São Paulo

Global Compact and SDGs

Reservas Votorantim joined the United Nations Global Compact, expressing its intention to incorporate the initiative's human rights, labor, environmental and anti-corruption principles into the company's strategy, culture and day-to-day operations. The company also aligned all the activities of its first managed reserve, Legado das Águas, with the UN's Sustainable Development Goals (SDGs), and since 2021 it has published an evolution and monitoring report, which can be found [on the adjacent link](#).

In 2019, we mapped eventual synergies between the targets and SDG indicators, in comparison with the processes of each department in Legado das Águas. In 2020, we structured indicators to reflect the departments' results while contributing to the SDGs. In 2021, we integrated these indicators into our management and business model, and the first report was published at the end of the year.

This initiative is now being developed at Legado Verdes do Cerrado, within its integrated management system.

Legado das Águas

Legado das Águas is Brazil's largest private Atlantic Forest reserve, covering an area of 31,000 hectares spread across the municipalities of Juquiá, Miracatu and Tapiraí, in Vale do Ribeira, in the interior portion of the state of São Paulo. This area was created more than 50 years ago, from the acquisition by Votorantim of a series of properties with dense forest, cut by the Juquiá River, along which the company built seven hydro power plants to supply an aluminum plant of Companhia Brasileira de Alumínio (CBA). Since then, the company understood that preserving the largest forest area possible on the riverbanks would be the only way to ensure water availability for the future.

In 2012, CBA, Nexa, Votorantim Cimentos and Auren (former Votorantim Energia) joined forces to transform this land into Legado das Águas, institutionalized through a partnership with the São Paulo state government. Ever since, Votorantim has been responsible for maintaining the area, which in 2015 began to be managed by Reservas Votorantim.

The roots and history of Legado das Águas are marked by these companies that founded the Reserve and contributed not only to establishing and maintaining it, but also to creating a new business model.

Legado das Águas is an innovative initiative that proves it is possible to generate responsible business with the standing forest while preserving the area and fostering new production chains that contribute to land development.

The reserve is one of the few destinations in Brazil with infrastructure to offer tourism in the heart of the Atlantic Forest, with activities for different audiences, such as trails, water tours, viewpoints, and canoeing. The area also has an option for lodging and camping.

The Atlantic Forest Biodiversity Center produces native plants from that biome for ecological restoration and landscaping projects, with capacity to produce 200,000 seedlings per year, of more than 80 different native species. In the social and environmental education fronts, more than 40,000 people have already been directly and indirectly benefited from actions carried out by Legado das Águas in the territory where it is located, supporting public management and fostering the local economy, and social and economic development.

The reserve also engages in scientific research, generating public knowledge for society as a whole. The most important results include the discovery of two albino tapirs, possibly the only ones in the world, the rediscovery of an orchid species considered extinct in nature in the state of São Paulo, its subsequent production, and reintroduction into the habitat, and the reserve's recognition as an Advanced Outpost of the Atlantic Forest Biosphere Reserve by the UN/Unesco system, among others.

Legado das Águas is a rare and highly preserved territory, maturing to stand as a new model of private protected area, whose activities offer social, environmental, and economic benefits in a sustainable way.

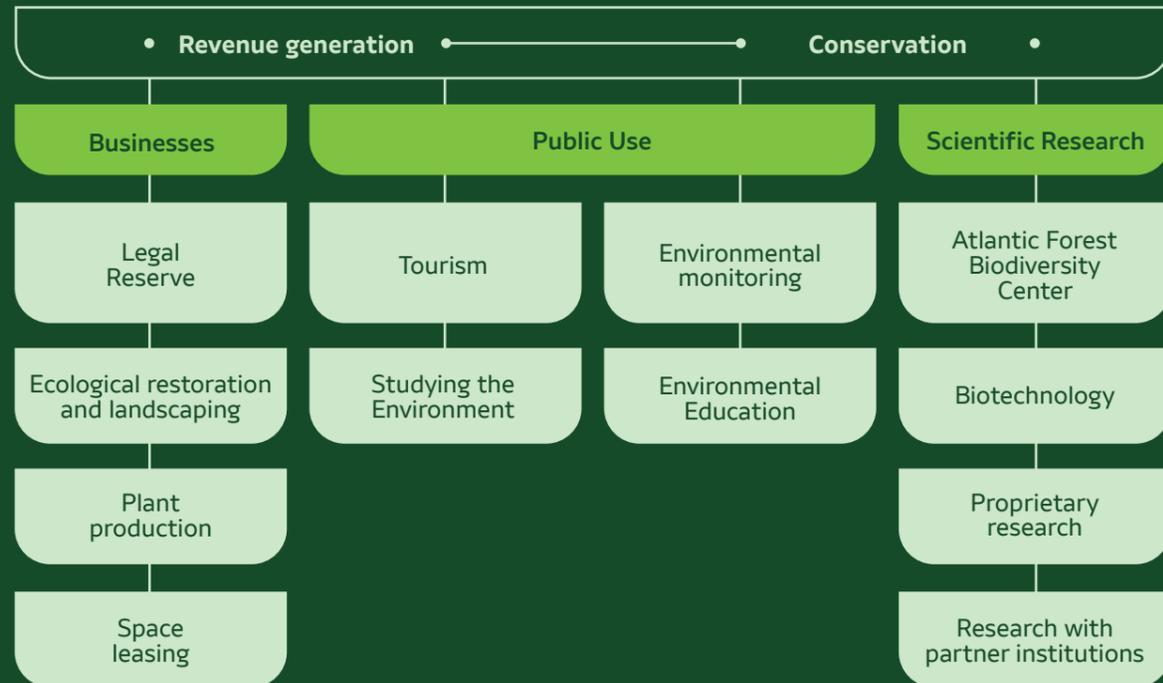
Founding Companies



Maintainer

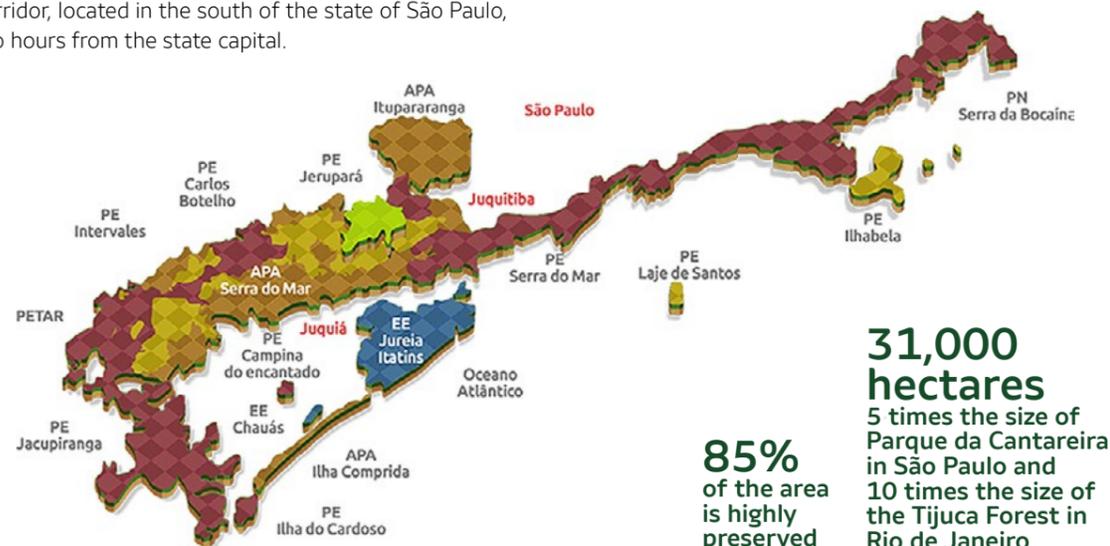


Legado das Águas' business model



Legado das Águas

The reserve is part of the Atlantic Forest Ecological Corridor, located in the south of the state of São Paulo, two hours from the state capital.



31,000 hectares
5 times the size of Parque da Cantareira in São Paulo and 10 times the size of the Tijuca Forest in Rio de Janeiro

85% of the area is highly preserved

- Legado das Águas
- APA - State Environmental Protection Area
- EE - Ecological Stations
- PE - State Park
- PN - National Park
- APA Wildlife Area

Social initiatives at Legado das Águas

Legado das Águas' social and environmental activities are developed in three fronts - Social, Environmental Education and Research -, which work in synergy to seek strategic partnerships in support of Legado das Águas' internal activities and the territorial development of Vale do Ribeira.

The Program in Support of the Sustainable Development of Vale do Ribeira (PDS) was designed with the objective of prospecting partners and fostering efforts to benefit the region's development, promoting the sharing of knowledge and experiences that add value to the territory's way of life. The goal is to encourage development and promote technologies based on sustainability principles for the target audience: communities, associations, small companies and municipal public bodies in Vale do Ribeira.

These are some of the projects executed in partnership with Ambiens Jr, a junior consulting and environmental solutions company from the Biological Sciences course at the Federal University of São Carlos (UFSCar) - Sorocaba Campus:

- **Birds of the Valley:** feasibility study, training of birdwatching guides in Vale do Ribeira;
- **Fruits of the Atlantic Forest:** commercial study focusing on the native fruits of the Atlantic Forest;
- **Forest Protectors:** preparation of educational games with a focus on the Atlantic Forest customized to the curriculum guidelines of São Paulo state schools;
- **Projeto Mel do Vale (Valley's Honey Project):** support to the Vale do Ribeira Beekeepers Association (Apivale), with the preparation of a catalog of plant species that produce nectar and a pollination calendar for the plants. This project complements the work conducted to strengthen Apivale carried out through the Networks for Sustainable Development (ReDes) program, which ended in 2021.

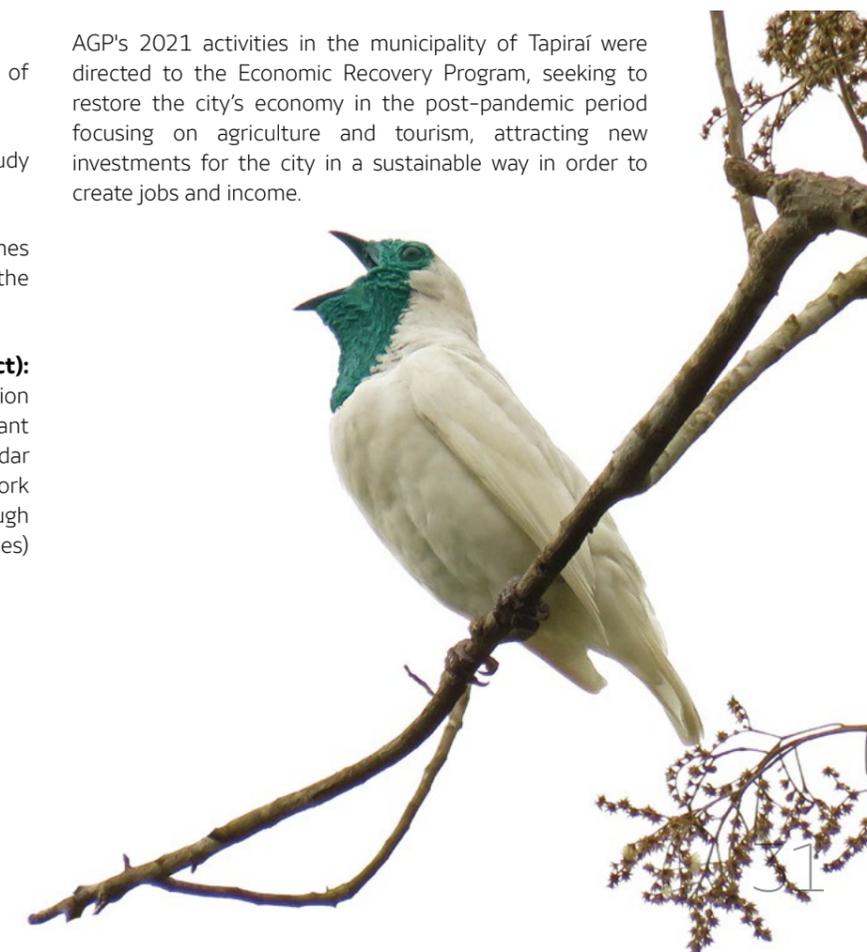
Araponga (*Procnias averano*) spotted and photographed at Legado das Águas by Jefferson Otaviano

Support to government authorities

The Public Management Support Program (AGP) is a partnership between the Votorantim Institute and the Brazilian Development Bank (BNDES) with the purpose of articulating partnerships and resources, training managers, and supporting local development. AGP has been in place since 2015 in the three municipalities in Legado das Águas' territory (Juquiá, Miracatu and Tapiraí), with the participation of Legado das Águas, strengthening the role of public authorities as a local development agent.

AGP was particularly important in 2020, the year when the Covid-19 pandemic as it supported the municipalities offering crisis management consulting. The goal was to help the administration deal with all the areas involved in solving problems created by the pandemic, such as social assistance, health surveillance, and the tax impacts of the economic crisis on the municipalities. This comprehensive initiative supporting health, food, education, and municipal administrations was conducted by Legado das Águas in partnership with the Votorantim Institute, and with the support of Votorantim S.A.

AGP's 2021 activities in the municipality of Tapiraí were directed to the Economic Recovery Program, seeking to restore the city's economy in the post-pandemic period focusing on agriculture and tourism, attracting new investments for the city in a sustainable way in order to create jobs and income.





Research milestones at Legado das Águas

Environmental Education

Reservas Votorantim sees Environmental Education as a conservation tool, insofar as it helps people understand the connection between the standing forest and inclusive, sustainable development.

The Environmental Education Plan has four action fronts which can be implemented in the municipalities at Legado das Águas, in the internal environment of Legado das Águas, with investees of the Votorantim portfolio, and through commercial initiatives, such as the environmental study.

Each program has a catalog of activities and its own manner to execute these activities. However, all of them have the same focus: actions and events to raise awareness on the target audience in order to improve environmental conservation and biodiversity in the Atlantic Forest.

Legado das Águas' Environmental Education area was structured in 2016. It achieved the following results in six years of operation (2017-2022):

- 461 events, lectures and actions executed;
- 10 municipalities with actions carried out: Tapiraí, Miracatu, Juquiá, Registro, Juquitiba, Pilar do Sul, Piedade, Ibiúna, Alumínio and São Paulo;
- Approximately 64,000 people benefited;
- Public involved: Votorantim's employees; students from municipal and state schools, and technical courses; traditional community of Ribeirão da Anta and communities in the municipalities;
- Partnerships: city halls (Education, Environment and Tourism Departments), schools, researchers from various universities and institutes;
- Topics addressed: Atlantic Forest, biodiversity, fauna, flora, and social and environmental calendar.

Scientific Research

Scientific research was born virtually together with the Reserve at Legado das Águas. Since 2014, several partners have developed projects that generated remarkable results both for the history of Legado das Águas and research on the Atlantic Forest. In the highly preserved forest of Legado das Águas, for example, extremely rare species of fauna and flora have been recorded, as well as a large population of muriquis-do-sul (*Brachyteles arachnoides*), the largest non-human primate in the Americas, classified as critically endangered. These projects allowed the cataloging of hundreds of animal and plant species over almost a decade, paving the way for new directions in scientific research.

In 2020, Legado das Águas became a part of the Monitoring Network for the Large Mammals of the Serra do Mar Program, a large-scale project that brings together several partners, covers 17,000 square kilometers of Atlantic Forest and aims to generate data to subsidize plans to protect jaguars (*Panthera onca*), tapirs (*Tapirus terrestris*) and peccaries (*Tayassu pecari*).

This year also saw the start of a new phase – the implementation of applied projects for research purposes developed by Legado das Águas' own team. One of the projects investigates the success rate in rescuing and relocating orchids found in fallen trees, a practice established during the execution of the "Legado das Águas Orchid Survey" project, between 2015 and 2019. Now, these orchids placed in healthy trees are monitored, evaluating certain important variables in the relocation process to ensure their survival.

Another proprietary project is the Fauna Monitoring Program implemented in 2021, which gathers internal actions and initiatives, partnerships, and research projects involving fauna. The program ensures the internal team's engagement in wildlife sighting at the reserve, encouraged by a system to reward the best records. This way, it is possible to collect data and information that will be useful for research and tourism.

With strategies increasingly integrated into Social Action and Environmental Education, the long-term goal is to contribute to the social and environmental transformation of Vale do Ribeira through the scientific knowledge originated at Legado das Águas. In this sense, the One Health Program (PSU), launched in 2021, is the most emblematic project through which scientific research is materialized into actions. The Program is an example of how integrated work between researchers and health agents from the municipalities contributes to preserve the forest and people's health.

PSU uses the information made available by the research conducted at Legado das Águas to contribute with educational and training actions focused on health professionals in the Vale do Ribeira municipalities. It was conceived based on the concept of One Health – recognized by the World Health Organization (WHO) – according to which animal and human health are interdependent and linked to the health of ecosystems.

A partnership with the Butantan Institute, Universidade Santo Amaro and Faculdade de Medicina do ABC (ABC School of Medicine) has been developing several studies at Legado das Águas on venomous animals, zoonoses, and diseases transmitted by animals (such as malaria, Chagas' disease, or leishmaniasis). Diseases caused by forest agents such as fungi, bacteria or parasites can affect vulnerable populations living in the surroundings of forest areas, where they have limited access to health services and basic sanitation.

Research conducted at Legado das Águas seeks to determine, for example, which are the most prevalent zoonoses existing in domestic and wild animals in the Reserve area. Thanks to that, it is also possible to know if these diseases affect the human population living in the surroundings of the forest. This information is crucial when training health professionals to more rapidly diagnose these diseases, thus ensuring more effective treatments and effective preventive actions.

In 2022, several PSU actions were held in Tapiraí towards educating the municipality's health agents, such as training sessions, lectures, and technical visits. The program was also launched in Juquiá, with the preparation of a calendar of actions focused on the demands presented by the Department of Health and the Zoonosis Center of the municipality.



- Rare sighting of the butterfly *Prepona deiphile delphine*, an extremely rare species that had been spotted only twice in the state of São Paulo, in the 1950s and 2000s;
- Rediscovery of *Octomeria estrellensis*, an orchid considered extinct in nature;
- Spotting of the butterfly *Godartiana byses*, an extremely rare species, registered for the first time in the state of São Paulo;
- Spotting of the first 2 albino tapir individuals in nature;
- Recognition of Legado das Águas as an **Advanced Outpost of the Atlantic Forest Biosphere Reserve**;
- The third-largest group of **muriquis-do-sul**, with 100 individuals, was identified at Legado das Águas, leading to the **area's recognition by the IUCN as a priority area for the conservation of this primate**;
- Discovery of a new orchid species, named *Lepanthopsis legadensis* in honor of Legado das Águas, where it was identified.



Legado Verdes do Cerrado

Legado Verdes do Cerrado is an innovative proposal for a Private Sustainable Development Reserve (RPDS), located in Niquelândia (GO), with an area of 32,000 hectares belonging to Companhia Brasileira de Alumínio (CBA), and managed by Reservas Votorantim.

In the past, the territory was acquired with the goal of planting eucalyptus to feed the energy matrix of a plant operated by the Company. Nevertheless, only 20% of the territory was used for that purpose. That is, 80% of its total area, which corresponds to more than 27,000 hectares, has been preserved by CBA since its acquisition and is covered by highly preserved native Cerrado vegetation.

In 2017, CBA signed a protocol of intention with Goiás state government to transform this territory into Legado Verdes do Cerrado. Since then, the area has been managed by Reservas Votorantim.

Next to the Chapada dos Veadeiros National Park, Legado Verdes do Cerrado is composed of two hubs. In the 27,000-hectare Núcleo Engenho, which hosts the reserve's headquarters, 80% of the area is allocated to scientific research, environmental education actions, and new economy activities, such as the production of plants; the remaining 20% corresponds to areas dedicated to livestock and grain production, with nature-integrated management. Núcleo Engenho is home to the springs of the Peixe, São Bento and Traíras rivers, which is the water source that supplies the city of Niquelândia.

Núcleo Santo Antônio Serra Negra covers 5,000 hectares of native untouched cerrado and is home to immense biodiversity. Part of its area is bordered by the Serra da Mesa Lake, Brazil's fifth largest lake and the first in water volume, formed from the construction of the Serra da Mesa Hydro Power Station dam in 1986.

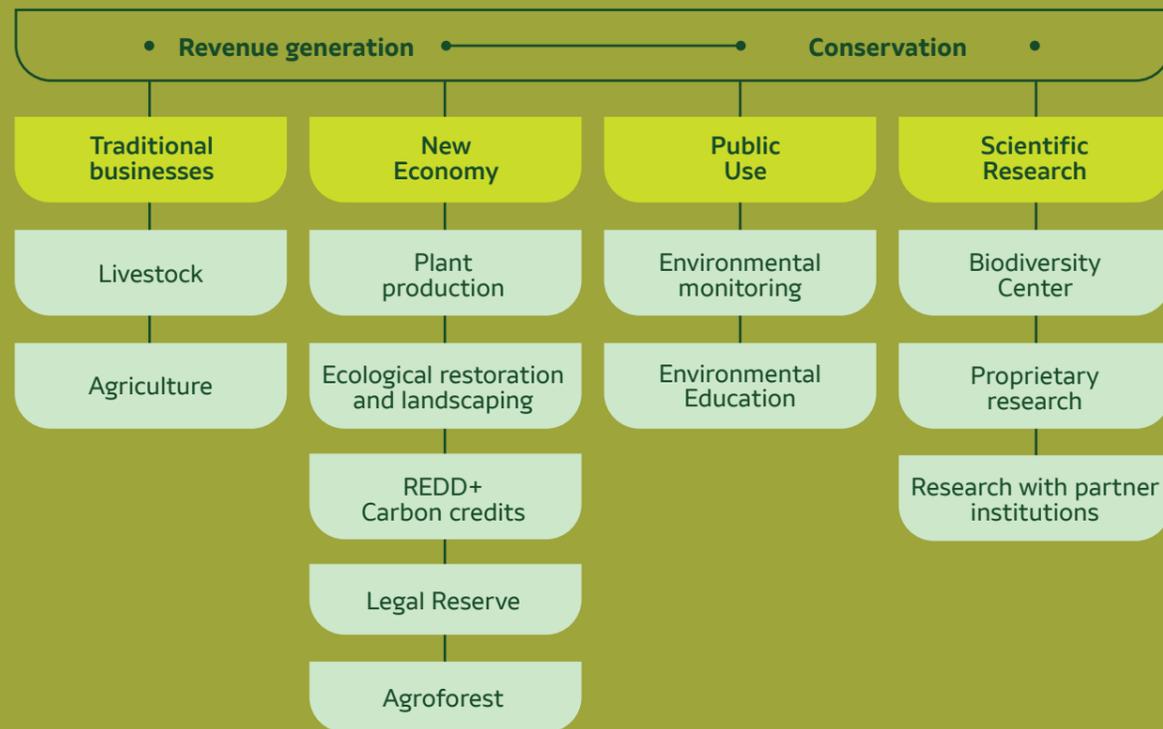
In the new economy, sustainable development and conservation are inseparable. The agroforestry project developed at Legado Verdes do Cerrado, for example, which unites agriculture with the cultivation of native fruit species, replicates natural ecosystems, optimizing the use of land and reconciling environmental conservation with food production. The Biodiversity Center of Legado Verdes do Cerrado produces native species' seedlings for different types of projects aimed at recovering environments in the Cerrado and urban landscaping.

Legado Verdes do Cerrado's highly preserved areas are allocated to Legal Reserve leasing projects and the sale of carbon credits. In these areas, several research projects generate scientific knowledge for society as a whole, help identify new biodiversity assets and apply best practices in the use of land and in the development of production systems, focusing on preserving the territory and promoting good practices for the surrounding areas. An important milestone was reached in 2022 in partnership with CBA: the issuing of the first carbon credits of the Cerrado biome in Latin America.

Combining environmental conservation with the new economy integrated to conventional activities, Legado Verdes do Cerrado shows that this new model is viable and encourages the sustainable development of the region.



Legado Verdes do Cerrado's business model

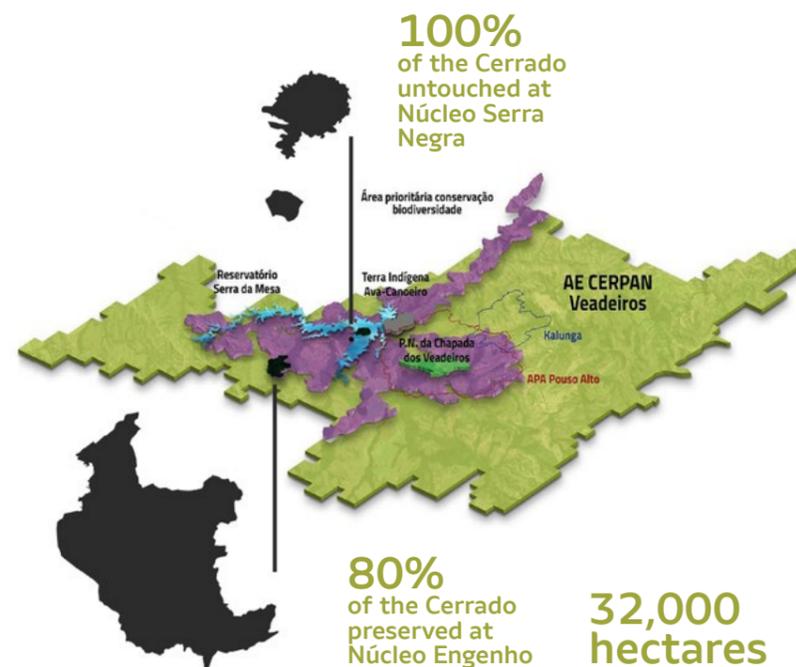


Legado Verdes do Cerrado

It integrates the territory of:

- Priority Areas for Biodiversity and Cave Conservation;
- PAN Onça Pintada;
- CERPAN Veadeiros.

The reserve is located in the north of the state of Goiás, three hours from Goiânia and Brasília.



Commitment to the community

Located in Niquelândia, in the interior of Goiás state, Legado Verdes do Cerrado has many small and large rural producers in its surroundings. This region was predominantly used for extensive livestock, but today this activity is being replaced with soybean crops. In this context, the Reserve's social arm employs its business model to show that it is possible to balance agricultural production and environmental conservation in the Cerrado. Its social initiatives are based on the three pillars of sustainability – environmental, social and economic.

We present below the most important social projects:

- **Cerrado Vivo (Living Cerrado):** action held annually in partnership with the Niquelândia Fire Department. It offers courses and workshops open to the community, in addition to environmental awareness lectures to teach students from urban and rural schools how to prevent the incidence of fires. A muffler workshop is offered to rural producers to teach participants to produce firefighting equipment;
- **Heavy Machinery Operation Course for women:** held in 2022, the initiative supported by Senai and the Social Assistance of the municipality of Niquelândia trained 21 women from the region in a 200-hour theoretical and practical course held at Senai and Legado Verdes do Cerrado;
- **Programa Portas Abertas (Open Doors Program):** started in 2022, the Program allows the community of Niquelândia and its surroundings to get to know the Reserve through previously scheduled free guided tours. Institutions such as municipal and state public schools, associations, cooperatives and charitable organizations can participate through a public notice and enjoy an immersion experience in the Cerrado, improving their knowledge on the importance of environmental conservation and responsible production aligned with the protection of natural resources.

Scientific Research

The commitment to encourage scientific research is part of the operational model developed at Legado Verdes do Cerrado and has been employed since its inauguration. One of the various research projects carried out in partnership with Brazilian universities had the purpose of making a survey of the local fauna and flora. The data collected may subsidize conservation actions and the sustainable use of natural resources in the Cerrado.

One of the highlights of the flora survey was discovering that Legado Verdes do Cerrado has ten of the 14 phytophysiognomies (types of vegetation existing in a given biome) of the Cerrado. This shows that the Reserve's flora is highly diversified and includes species with great potential for both ornamental and medicinal purposes.

A total of 851 plant species were described, 16 of which are new to science. One of them was on the list of new world discoveries released in January 2021. The new species received the scientific name *Erythroxylum niquelandense*, in honor of the municipality of Niquelândia, where it was found. With simple leaves and red fruits, the plant is morphologically similar to other individuals of the same genus. Popularly identified as pimentinha-do-mato, it is widespread in the Americas and easy to recognize. The plants of this genus have properties widely used in medicines for the treatment of diseases such as cancer and AIDS.

The study on native trees found at Legado Verdes do Cerrado identified 154 species, a diversity that shows a high degree of conservation of the biome and reflects the extent of areas with preserved forests in the reserve. As the Cerrado biome areas are very fragmented, it is currently difficult to find large regions with forest formations.

Some of the species found at Legado Verdes do Cerrado are considered rare, such as *Aspidosperma nobile* (casco d'anta), *Davilla grandiflora* (lixerinha da Folha Lisa), *Stryphnodendron rotundifolium* (barbatimão), and *Pouteria ramiflora* (curriola). Other species, such as the garapa and the cedar, are considered vulnerable on Brazilian flora's list of endangered species. Trees protected by environmental legislation in the state of Goiás were also spotted, such as *Dipteryx alata* (baru), *Caryocar Brasiliense* (pequi), *Brazilian peppertree* (aroeira), and *Parapiptadenia rigida* (angico), in addition to three species of *Handroanthus albus* (ipê).



Study of the soil

Another important research conducted at Legado Verdes do Cerrado mapped and analyzed the territory's soil, opening a path for improving agricultural efficiency and environmental conservation. The research, which took place between 2019 and 2021, was directed at karst soils, which are characterized by the corrosion of rocks, high porosity, and, consequently, fragility. Karst relief occurs in various regions of Brazil, including in part of the land of Niquelândia, the municipality where Legado Verdes do Cerrado is located. Due to the fragility caused by the continuous erosion process, the occupation of karst soils, whether by urban construction or agricultural activities, must be carefully evaluated.

The study identified the occurrence of different types of soil and great variation in depth, ranging from very shallow, with only 10 or 15 centimeters above the rock, to more than two meters deep in certain sites. In addition to assessing fertility, permeability, and the potential for erosion and agricultural productivity, the research also revealed the existence of six caves and eight surface cavities (sinkholes), called dolines. The data contributed to create a soil map of Legado Verdes do Cerrado, with detailed data on 12 soil types existing in the Reserve.

Based on the soil studies and aspects such as vegetation, rocks, relief, and hydrology, we can structure and execute a plan for the use of land considering the potentialities and fragilities of the area. The Reserve's surroundings have many mountains with high and steep hills; the area is subject to intense rainfall and has poorly permeable soils. These climate conditions result in extremely intense erosive processes, which can be aggravated due to the use and management of soil.



Pequi tree

Research milestones at Legado Verdes do Cerrado



- Identification of 10 **phytophysiognomies** (vegetation types), which correspond to almost 91% of the vegetation found in the Brazilian Cerrado;
- 6 caves identified, thus confirming Legado Verdes do Cerrado as a **Priority Area for Cave Conservation** in the biome;
- The **world's largest Cerrado seed bank**, with 1.9 million samples of more than 50 different species;
- Discovery of 16 new plant species in 2021, of which eight are in the description phase for publication and one has already been published and registered. The latter is ***Erythroxylum niquelandense***, which has properties used in medicines to treat diseases such as cancer and AIDS, and was named after the municipality where Legado Verdes do Cerrado is located.
- 1,500 plant species have been catalogued, accounting for approximately **12.5% of the Cerrado's entire flora in Brazil**;
- The territory is a **shield for the springs of three rivers important for the north of Goiás: São Bento, Peixe and Traíras**, the latter being responsible for supplying water to the entire municipality of Niquelândia (Goiás state) and an ecological corridor for the jaguar, a species that is threatened with extinction and has been recorded five times in the territory.

Pátio Caeté

Inaugurated in the city of São Paulo in December 2020, Pátio Caeté is much more than a center for the sale and distribution of Atlantic Forest seedlings, plants and trees produced at Legado das Águas' Biodiversity Center. It works as a distributor of plants from the Brazilian flora in São Paulo state capital, since it sells species from other Brazilian biomes.

Caeté is a Tupi-Guarani word that means "true forest" and translates the concept and focus of the enterprise: to value Brazil's magnificent plants in an urban landscaping market where foreign species corresponded to more than 90%. Curated and operated by Giovanna Paisagismo, Pátio Caeté is open to the public and caters not only to architects and landscape designers responsible for large projects, but also to individual consumers interested in having Brazilian species specimens in their homes.

In the case of the plants grown at Legado das Águas, customers have a guarantee of origin thanks to the traceability system. All seedlings grown at the Biodiversity Center receive a QR Code that registers all stages of the production process. With a cell phone, it is possible to unveil the history of that plant since its origin in the forest.

Although landscaping with native species still stands as a minority market, it has grown in recent years. Native species have advantages when compared to exotic plants (coming from foreign biomes): they grow faster, use less water, and are more resistant to climate variations and natural enemies because they have evolved in that territory over time.

Projects with native plants have become a way to add value to developments in São Paulo capital city. An example of that is the real estate development O Parque, of the real estate developer Gamaro, built in the Brooklin neighborhood. Offering residential and commercial areas, the condominium will have 10,000 sqm of green areas made up of 35,000 native Atlantic Forest specimens supplied by Legado das Águas' Biodiversity Center, through Pátio Caeté. The landscaping project was inspired by Legado das Águas itself, including a water course that crosses the main garden.

There are other examples of projects in the capital city - Pátio Caeté supplied plants for the landscaping of State, an innovation hub in Vila Leopoldina located in a 10,000-sqm restored warehouse where an old factory operated in the 1940s. It also supplied plants for the landscaping of the Global Park stand, a venture by the real estate developer Benx located on Marginal Pinheiros, whose landscaping project was conceived by Ricardo Cardim.

Reservas Votorantim will continue encouraging initiatives that broaden its distribution base as well as the knowledge of professionals, supporting the use of native plants in landscaping projects.



In the wake of the future

As a company that was born and grew developing a nature-based business model, Reservas Votorantim understands that the multiple use of land is a tool towards preserving Brazilian biodiversity.

In the green economy, biodiversity conservation and business generation walk side by side. **The value of the standing forest is a precious gift from our current generation, ensuring a sustainable future for all to come.**



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