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DAS ÁGUAS  
RESERVA VOTORANTIM

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Report  
2017

LEGADO  
DAS ÁGUAS  
RESERVA VOTORANTIM

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# 2017: A YEAR FULL OF VICTORIES AND ACHIEVEMENTS

Over the past year, recognition of Legado das Águas as an important conservation initiative has grown. This is certainly a reflection of the important work carried out during 2017 by the Legado teams who, together with dozens of organizations, institutional partners and researchers, were responsible for ensuring the initiatives, surveys and projects for appreciating biodiversity, territorial development and local community history became known to the general public, to the representatives of the three municipalities (Juquiá, Miracatu and Tapirai) where Reserva is situated, and to the opinion formers and specialists who work in environmental conservation. The following are a few of the most significant events in 2017.

## THE INNOVATIVE PROJECT OF PRIVATE RESERVE MANAGEMENT

Reserva was among the winners of the 2017 ECO Award, sponsored by the American Chamber of Commerce (Amcham) for the companies that have implemented socially-responsible practices. Innovations in management resulted in Legado receiving the award in the category "process sustainability". This is because Legado das Águas' main premise is to be an innovative initiative in which it is possible to generate income while encouraging the development of the land where Reserva is located, involving the local population and the surrounding towns in efforts to maintain the forest standing. Some examples of these activities are ecotourism, legal reserve compensation and the sale of native Atlantic Forest seedlings, as well as running social projects such as Public Management Support (AGP), the Votorantim Partnership for Education (PVE), among others, possible. Amcham created the ECO Award in 1982 to acknowledge and disclose information on corporate sustainability. In Brazil, over the past three decades, it has already inspired over 2,000 businesses to submit their projects.

award



David Canassa, Frineia Rezende and João Miranda, CEO Votorantim S.A., during the presentation of the ECO Award, sponsored by Amcham



*Our environmental assets are conserved and create inclusive businesses, in which protecting the area, strengthening communities and the activities of the new economy happen in harmony.*

Frineia Rezende, Executive Manager of Reservas Votorantim

AWARDS, TRIBUTES, HEADLINES IN REGIONAL AND NATIONAL MEDIA, EVENTS, EXHIBITIONS, COURSES... DISCOVER SOME OF THE MAIN INITIATIVES OF LEGADO DAS ÁGUAS

## NATIONAL BIODIVERSITY AWARD

Legado das Águas won the *Business* category in the second edition of the 2017 National Biodiversity Award – promoted by the Ministry of the Environment. Its aim is to recognize initiatives within both the public and private sectors, social and professional organizations that stand out for their efforts to improve the conservation of species found in Brazilian biodiversity, contributing to the achievement of the National Biodiversity Targets. In all, there were 17 finalists divided into six categories: Academia, Companies, Media, Ministry of the Environment, Public Organs and Civil Society. For each initiative submitted, the following criteria were used in the evaluation: effectiveness regarding species conservation, environmental and social impacts, and innovation.



From left to right: Warwick Manfrinato, Director of Protected Areas at the Ministry of the Environment; David Canassa, Director of Reservas Votorantim; Frineia Rezende, Executive Manager of Reservas Votorantim; Mario Mantovani, Director of Public Policy at SOS Mata Atlântica; and José Pedro, Secretary of Biodiversity and Forests at the Ministry of the Environment



*The inhabitants of the Riberão da Anta community were very generous in sharing their stories with us. The book is the result of this partnership, piecing together the cultural recovery of the community.*

David Canassa, Director of Reservas Votorantim



## PUBLIC RECOGNITION

As a direct result of the work carried out by Legado das Águas through programs and projects it partnered with local government as of 2013, the Tapirai city council awarded Public Recognition to Legado for its contribution to economic and socio-environmental development linked to conserving the Atlantic Forest in the municipality and throughout Vale do Ribeira (Ribeira Valley). At the event, Reserva also launched a book on the *Cabocla* community in Riberão da Anta which brings together the results of three years' research carried out together with the community.

Acknowledgement



**SENSORIAL GARDEN AND ACCESSIBLE TRAIL**

In December 2017, the Sensorial Garden and the Trail of the Centenary Fig Tree were inaugurated, offering accessibility to people with reduced mobility who, previously, were unable to find readily adapted ecotourism activities. They are now able to see a number of different Atlantic Forest native plant species from within the natural refuge.

The Sensorial Garden brings together 22 plant species with a variety of textures, including herbs, aromatics and native plants to the Atlantic biome, which highlight the sense of touch and smell. All plants are labeled in braille so that anyone, with whatever need, is able to appreciate them. Guides lead the visit which is done barefoot, allowing visitors to feel the different kinds of soil, sand, earth and rubber among others things.

*Accessibility*

**WE EVEN APPEARED IN THE NEWS!**

In 2017, Legado das Águas created a stir in both local and national media.

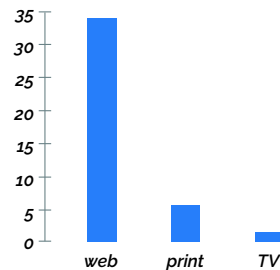
**Regional**

**25** articles on web sites  
**7** spots on TV **2,876** minutes  
**61** printed articles

Reaching a possible readership of more than **9** million

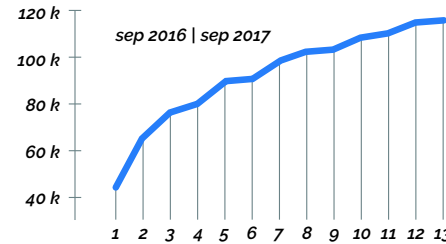
**National**

**42** reports published on sites, in newspapers, magazines and presented on TV



**ON SOCIAL MEDIA**

Another area in which Legado das Águas showed considerable growth in 2017 was in the digital environment. Paulina Chamorro, journalist, explains, "Between September 2016 and October 2017, our Facebook audience increased by 154%. Last year, we decided to use more accessible language, closer to the way people communicate. The audience outside the state of São Paulo also grew including national interest topics related to environmental conservation in our posts." Paulina goes on to highlight that the year of Sustainable Tourism, celebrated in 2017, encouraged reflection on the need to conserve natural environments – precisely what we are doing at Legado das Águas.



**410** posts  
**89,792** likes  
**42,338** new followers  
**11,760** shares

**305** posts  
**28,763** interactions

**IN 2017 LEGADO DAS ÁGUAS PARTICIPATED IN THE FOLLOWING EVENTS:**

- 1st American Brazilian Scientific Seminar – Science and Citizenship
- Sustainability and Governance Forum
- Science and Technology Week in Vale do Ribeira
- X Environmental Symposium
- Environmental Week, Juquiá
- Environment Conference, Jujuitiba
- Exhibition, Museum of the Brazilian Home
- 1st Meeting Hydrology in Forest Ecosystems, UFSCAR (University of São Carlos)
- Eletrobras Workshop on Biodiversity and Eco-systems in Business Management
- 7th International Tapir Symposium
- 2nd Business and Investment Forum, SEBRAE
- Conference of Parties – Germany

**WORKSHOP:  
PHOTOGRAPHY IN THE FOREST**

Fourteen photographers participated in this workshop, among them professionals and experienced amateurs. It was the sixth time this course had been held and it became one of the most sought-after events in by photographers of Brazilian nature. As well as training new talent to capture images of the Atlantic Forest, the course always offers its participants a new experience.



**LEARNING MORE ABOUT SNAKES**

Legado das Águas is situated in an area with several species of snake, some of which are venomous. Since 2016, Legado has had a partnership with the Butantan Institute in São Paulo. In addition to biological and behavioral research on the snake population, which includes amphibians and reptiles that inhabit the region, biologist and Director of the Institute Giuseppe Puerto took part, throughout the year, in a number of educational events, talks, courses and training sessions for the residents in the local communities, as well as townsfolk from Juquiá and Juquitiba.

Some of the subjects discussed were:

- Snakes as part of biodiversity;
- Venomous and dangerous species found in the area and the main non-venomous species;
- Activities, habitat, behavior, feeding habits and defense tactics;
- How to react when you come across a snake and how it should be handled, if necessary;
- First Aid.



**BASIC DIGITAL PHOTOGRAPHY COURSE  
IN THE ATLANTIC FOREST**

This course was held for the first time bringing together 15 participants in an innovative initiative in photography classes outside the classroom. Reserva's inspiring surroundings served as a backdrop to spark students' interest in telling stories using pictures. The course was given by photographers Luciano Candisani from *National Geographic* magazine (Brazil) and William Silveira, partner at Legado and Director of the Applied Photographic Institute, Campinas, São Paulo.



**BASIC CONCEPTS IN  
ATLANTIC FOREST BOTANY**

During the year, four expeditions to Legado das Águas were undertaken to provide an experience in botany in the largest private reserve of Atlantic Forest in the country, "In all, the workshop involved 44 participants from varied profiles between the ages of 25 and 34. Although they work in very different professional fields, what they had in common was a connection to botany and landscaping, as well as a love for trekking in the forest. It was a great experience," said Anderson Santos, Director of Pedagogy at Escola de Botânica (Botany School), a partner company responsible for the project. Among other subjects, participants were given a general overview of different groups of plants, their principal structure and organs, as well as concepts regarding physiology and plant morphology.



**ORCHIDS OF THE ATLANTIC FOREST**

Luciano Zandoná, biologist, held further environmental educational activities. One brought together 11 people who experienced life in the forest for a whole weekend. In other activities, people were able to learn a little more about how to identify and cultivate certain plants. Zandoná also ran a number of educational activities with students from schools in the Legado area. For example, during Environment Week in June, he received some local children. "We did a number of activities with the kids, including planting trees and putting orchids back into the wild," he explains. ■

*Courses  
Workshops*

# BUDDING WEALTH IN THE NURSERY

It is hard to believe, but Brazil, whose diversity is one of the most notable on the planet, still hesitates to use native plants for ornamental use. This is because around 90% of species used for this purpose are not from any Brazilian biome, not even the Atlantic Forest, which originally covered a large part of our country. Fortunately, this is changing. One reason is that, since 2016, Legado das Águas has created a nursery dedicated to producing only seedlings native to the Atlantic Forest.

In the beginning, production was focused on seedlings from species used for reforestation. Now, the focus has changed to ornamental plants for the landscaping market. However, the nursery will continue producing plants for reforestation. Frineia Rezende, Executive Manager of Reservas Votorantim says, "We have seen that plants for ornamental purposes have added value. That is why we decided to rethink our strategy, enabling us to have a positive impact not only on restoration, but also on large-scale landscaping projects."

For this reason, the nursery needed to be restructured with the acquisition of new



Focusing on ornamental species

IT PROMISES TO BE ONE OF THE MAIN NURSERIES WORKING WITH NATIVE ATLANTIC FOREST SPECIES FOR THE ORNAMENTAL MARKET. NOW, ALL SEEDLINGS ARE TRACEABLE, WHICH GUARANTEES THE BEST QUALITY FROM THE START TO THE END OF THE PROCESS

equipment and changes to work practices. If before seedlings of little more than a few weeks old were sold, now the plants needed to grow bigger and more resistant. Biologist Ricardo Cardim, a specialist in the use of native species in landscape projects, explains, "Now, the public will have the opportunity to take species native to the Atlantic Forest into urban environments. With this, people will once again have contact with species that originally existed in Brazil."

Among the other benefits, these plants attract birds, which also help reduce the maintenance costs in the landscape project as they feed on insects. In Legado's nursery, it is possible to find seedlings rarely found in other places, such as *carqueja arbustiva* (*baccharis tremera*), *manacazinho* (*little manaca - brunfelsia uniflora*), *orelha-de-onça prateada* (*silver-leafed princess flower - tibouchina heteromalla*), *cambugi* (*campananesia phaea*), *uvaia* (*eugenia uvalha*), *guabirola* (*campomanesia guavirola*), *araçá* (*guava - psidium*), *juçara* (*juçara palm - euterpe edulis*), among others.



The aim is to now produce bigger and more resistant seedlings

Nursery

## PIONEERING TRACEABILITY

Another innovation was to automate production and trace seedlings from the parent plant all the way to the final customer. The idea of this project to improve nursery management came from the Innovation Committee at Votorantim S.A. A benchmark visit was paid to the GS1 company, a leader in bar code development, where the work began. Herbert Kanshiro, an analyst in sustainability at GS1 Brasil, recalls, "The project began when we suggested identifying the Atlantic Forest species. After that it developed into traceability." From then on, so that GS1 could deliver the complete solution, they sought other companies, such as PariPassu, Zebra Technologies and 3M, which also became partners deciding to participate as volunteers and collaborators, at no cost.

Frederico Bellini Coelho, Marketing and Sustainability Manager at GS1 Brasil, explains, "Legado's initiative aligned perfectly with GS1 Brasil's sustainability plan - the Brazilian Automation Association. We support it collaboratively through GS1 identification

standards, scalable projects that benefit society in the principle aspects of sustainability. Thus, the opportunity to innovatively connect the nursery with traceability in the environmental field motivated us to join forces with numerous partners all with the intention to preserve the Atlantic Forest, guaranteeing the identification of the seedlings, their origins and their entire history by means of automated information and technology." ■

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Unlike other existing general nurseries, the work at Legado's nursery was ground-breaking in producing ornamental native species. With this, it also fulfills its social role, allowing people to experience the Atlantic Forest again, albeit in an urban environment.

Ricardo Cardim, Botanist

# THE FIRST FOREST RESTORATION PROJECTS

IN A LITTLE MORE THAN A YEAR OF ACTIVITIES, LEGADO DAS ÁGUAS'S NURSERY HAS ALREADY PROVIDED THOUSANDS OF NATIVE SEEDLINGS TO BE PLANTED THROUGHOUT THE STATE OF SÃO PAULO

Another important initiative taken by Legado das Águas in 2017 was to start commercializing native Atlantic Forest seedlings. This business model focuses on meeting the demand of companies or rural producers, who, for whatever reason, need to recover land.

Within this context, Legado's first client was Votorantim Cimentos, which, at the end of 2016, showed interest in changing the way it covered the slopes that are formed around its mining sites. "We developed pioneering reforestation efforts in partnership with a company called Bioflora on a site belonging to Votorantim Cimentos in the city of Salto de Pirapora in the interior of São Paulo state," explains João Dias, Coordinator at Legado das Águas.

What normally happens in these cases is that the slopes are covered with organic matter, and then a further covering of, basically, exotic grass is planted. This time, in an area of 3.25 hectares, more than 7,000 seedlings of different native species, trees and bushes were planted, including *guapuruvu* (Brazilian fern tree - *schizolobium parahyba*), *ingá* (*shimbillo*), *assa-peixe* (Brazilian tea - *vernonia polysphaera*), all strains coming from the Legado das Águas nursery.

The experience has brought about some excellent results. "One is that the diversity of the species used there will guarantee a significant variation in the genetic make-up. Besides this, planting trees and shrubs can, over time, create a stronger network of roots, thus avoiding the problem of land erosion caused by flooding," Dias explains.

There are also other benefits. Many of these trees carry fruit and flowers, which, after a time, attract pollinating birds and insects which help spread seeds and pollen around the area. Furthermore, the forest canopy can help control the local microclimate. Another positive factor is that the area that underwent landscaping is near a residential complex. "In a few years' time, residents will benefit from a small woodland with flowers, fruits and lots of birds," confirms Dias.

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*The partnership between Votorantim Cimentos and Legado das Águas has proven to be highly relevant to the group's sustainability strategy. Through these two initiatives in reforestation areas, the use of nearly 20,000 native seedlings from Legado das Águas has made it clear that we can perform these activities in a coordinated fashion, bringing species that were once part of the Atlantic Forest. In this way, everyone wins.*

Álvaro Lorenz, Global Technical Director, Votorantim Cimentos

## GABRIEL CHUCRE PARK

Votorantim Cimentos, in partnership with the São Paulo State Environment Secretariat and two private companies – Cardim Arquitetura Paisagística and Agroflor – also consolidated the second reforestation project, completed in October 2017. On this occasion, the nursery provided more than 10,000 seedlings to the Gabriel Chucre Park situated in Carapicuíba, within the Greater São Paulo area. "The idea of this sustainable urban landscaping is to work in regions which, in the past, were covered by Atlantic Forest. In this way, we want to bring back a bit of the original forest cover to São Paulo city. The forest that will appear in a few decades will leave an important legacy of environmental services, providing better standards of living for those who use the park," says Ricardo Cardim, botanist. ■

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*Legado das Águas is a partner in search of solutions. Its work in reforestation and landscaping has proven to be a very promising business. It generates employment and restores the Atlantic Forest, including people and raising awareness as to the importance of this biome. Furthermore, it generates revenue to cover the maintenance of Reserva itself.*

David Canassa, Director of Reservas Votorantim



Reforested area around a Votorantim Cimentos mine in Salto de Pirapora, SP



# LEGADO HOSTS THE LEGAL RESERVE FORUM

Legado das Águas covers a large area of preserved Atlantic Forest and, for this reason, it is able to offer interested parties (such as rural property owners) quite a different service. This difference is legal reserve compensation. Using this procedure, any landowners who do not own the percentage of legal reserve as required by legislation are able to normalize their situation, compensating with equivalent areas situated on other rural property. Hence, the name legal reserve compensation.

As not many parties directly involved know much about this procedure, Legado das Águas held a forum on **"Legal Reserve Compensation: Models, Solutions and Benefits"** in September 2017. It brought together the main players and specialists on the subject. Among those present were representatives from the São Paulo State Secretariat for the Environment, agribusiness

members (one of the most important sectors in Brazil's economy), as well as lawyers and representatives from the Banco do Brasil and Banco Votorantim.

"This forum was very important for all participants to better understand the details of the Forestry Code in relation to environmental compensation, allowing them to exchange knowledge. As well as discussing the main subjects in this field – such as resolutions handed down by the State Secretariat for the Environment, the application of economic tools as established in environmental legislation, and the requirements for granting credit to agribusiness – we also reinforced the services that Legado das Águas can offer to those interested parties, including legal support, for example," says Mayara Neme Mira, a lawyer at Reservas Votorantim.

## A NATIONAL REFERENCE IN COMPENSATION

Another important point in the forum was that it showed the public that Legado das Águas means to be a national reference in legal reserve compensation, providing competitive advantages in relation to other companies offering the same service. Mayara adds, "One of these competitive advantages is the fact that we offer services in permanent monitoring and security throughout the area. Besides this, once our services have been acquired, support is provided to landowners to resolve any bureaucratic problems and they would be collaborating with Legado in its efforts to continue fostering the conservation of the Atlantic Forest biodiversity. This encourages development within the region with Reservas Votorantim's guarantee."

With issues related to the Forest Code resolved by the Superior Federal Appeals Court in 2018, Reservas Votorantim has increased the availability of this service, both in Legado das Águas, for the Atlantic Forest, and in Legado Verdes in the state of Goiás (*see opposite*). Resources from the legal reserve compensation services contribute to the upkeep of areas, under the premise of linking environmental protection to income generation, shared value and development of local communities.

## LEGADO VERDES DO CERRADO

As well as managing Legado das Águas, Reservas Votorantim has been managing another important environmental asset for just over one year: Legado Verdes do Cerrado. "This shows our capacity to expand the model we have developed to another environmental asset, with the security and knowledge of an entity administering areas like these for more than six decades," says David Canassa, Director of Reservas Votorantim.

Situated in Niquelândia in the state of Goiás, the Legado Verdes do Cerrado is a private reserve for the Sustainable Development of 32,000 hectares, an area belonging to the Companhia Brasileira de Alumínio (CBA), a Votorantim company. Of this total area, some 27,000 hectares have been protected since they were acquired more than 40 years ago. This has been fundamental in maintaining the Cerrado in an advanced state of conservation.

The area has become an open-air research laboratory for students and professionals who develop projects related to the Cerrado. It is also an environment for activities linked to the new economy – such as a native plant nursery, ecotourism and linked studies – sharing space with more conventional activities, such as planting soybean and raising cattle. Partner institutions for developing scientific research include the Federal University of Goiás, the State University of Goiás, the University of Brasília, the Integrated Sesi-Senai Unit of Niquelândia together with other public and private institutions. ■



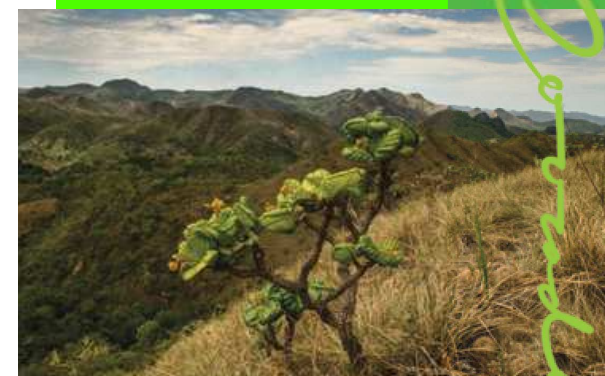
ONE OF THE SEMINAR'S AIMS WAS TO BRING TOGETHER SOME OF THE REPRESENTATIVES FROM SECTORS INVOLVED IN ONE OF THE MOST IMPORTANT SERVICES IN THE NEW ECONOMY

*Legal Reserve*



*Reservas Votorantim offer areas for legal reserve compensation in the states of São Paulo and Goiás, with the guarantee of an entity which has been administering large, dense forests for more than six decades. Compensation in areas like Legado das Águas and Legado Verdes do Cerrado guarantees the protection of eco systemic services and forest maintenance along an ecological belt.*

*Mayara Neme Mira, Lawyer, Reservas Votorantim*



# WATER MOVES THE WORLD

The Trata Brasil Institute is a Civil Society Organization for Public Interest (OSCIP) comprising companies that are interested in advancing basic sanitary conditions and the protection of the country's water resources. Edison Carlos, Trata's executive president, has analyzed the main issues related to the use of water and its importance to the balance of the planet. The Trata Brasil Institute has been a partner of Legado das Águas since 2017.

**IN MARCH, BRASÍLIA WAS HOST TO THE 8TH WORLD FORUM ON WATER. WHAT DID WE LEARN FROM THIS EVENT, WHICH, FOR THE FIRST TIME, WAS HELD IN BRAZIL?**

**Carlos:** This forum brought together the best minds working in sanitation and water from Brazil and around the world. There were dozens of renowned specialists presenting their visions on the needs that this country and the world face in relation to water. This subject always sparks interesting discussions, such as those concerning the conflict over the use of water, which historically take place in Middle Eastern countries, but which is now affecting Europe, the Americas and other regions. Another important point is climate change and the impact it has on historical rainfall patterns and the difficulty in planning because of this phenomenon. As the forum takes place every 3 years, what has changed between 2015 and now is that in many places throughout the world there has been an increase in technology for reusing water and desalination, among others. This has increased interest around the globe. In this matter, Israel, Australia, California and other areas have had important experiences. Unfortunately, Brazil suffers from an enduring lack of basic sanitation, an issue always debated with international



specialists. What we hope is that decisions taken here become more technical and less influenced by Brazilian politics. Basic sanitation and access to drinking water are infrastructure matters and, therefore, take decades to be resolved, but they have not been a priority for our leaders. This is all extremely important for Brazil to escape the status of being a "developing country" or, even worse, "a third world country". Once again, this is an enormous opportunity for Brazil to learn from countries that resolved the problem years ago, as well as to position itself in the world regarding the several opportunities we can take advantage of to effectively move towards universalizing water and basic sanitation.

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*Water generates electricity, balances the climate and the Earth's temperature. It produces food, turns the wheels of industry and quenches the thirst of human beings and animals. Therefore, there is nothing more important to discuss than water.*

*Edison Carlos, Executive President, Trata Brasil Institute.*

## WHAT ARE THE MAIN ISSUES REGARDING WATER?

Water is what makes our world go round. It is what makes society function as well as our bodies. Without water there is no human activity. It is, therefore, easy to understand the importance of discussing the subject. Water generates electricity, balances the climate and temperature of the planet. It produces food, turns the wheels of industry and business and quenches the thirst of human beings and animals. Therefore, there is nothing more important to discuss than water. The big issue concerns distribution and access to fresh water around the world, as it is so irregular and even more uncertain due to today's climate. These uncertainties could well amplify the conflicts over water, which is very much a cause for concern.

## IN THIS SENSE, WHAT IS LEGADO DAS ÁGUAS' IMPORTANCE IN PROTECTING THE JUQUIÁ RIVER SPRINGS?

The Juquiá River provides water for hundreds of people in the Vale do Ribeira region. It is vital to a sizeable part of the local economy, including fishing, agriculture, human use etc., but it is also responsible for generating electricity. It is well understood that conserving the Atlantic Forest and the local water resources, especially the Juquiá River springs, are results of work carried out by Votorantim, active in the area since the 1950s when it acquired land that, until today, is maintained intact. Legado das Águas, a division of the company responsible for maintaining and amplifying the region's environmental

and cultural assets, is a determining force in local conservation, mainly as a mediator for society and the local towns, in such a way that decision-makers understand the fragile balance between water and the environment. Among the challenges is that of raising awareness in the towns in terms of expanding basic sanitation since substandard waste collection and poor sewage treatment result in indiscriminate dumping of waste water in local rivers. Another challenge is to show the impacts of transferring water to the metropolitan region of São Paulo when technical and environmental parameters are not respected.

**ONE OF THE AIMS OF THE MILLENNIUM DEVELOPMENT GOALS (MDGS) WAS TO REVERT THE LOSS OF ENVIRONMENTAL RESOURCES, HALVING THE PERCENTAGE OF THE POPULATION WITH NO ACCESS TO DRINKING WATER AND BASIC SANITATION BY 2015, AND, LASTLY, TO SIGNIFICANTLY INCREASE THE STANDARDS OF LIVING FOR AT LEAST 100 MILLION INHABITANTS OF DEGRADED NEIGHBORHOODS BY 2020. WHAT DO WE HAVE TO DO TO ACHIEVE THIS TARGET?**

Start with the basics and planning. Brazil does not make long-term plans. We are held to the political agenda every four years. Infrastructure efforts require time and must be maintained, regardless of political parties or leaders. Therefore, it is incompatible to think in the short-term when talking about conserving environmental resources, increasing access to water and basic sanitation, expanding treatment stations etc., but, unfortunately, this is what we have seen over the past few years. The National Plan for Basic Sanitation (PLANSAB) put into effect in December 2013, sought to make basic sanitation available to everyone within 20 years, by 2033, similar to the targets set forth by the MDGs. However, progress over the last ten years has shown that this will not be possible. Sanitation needs not only to be seen as a long-term, technical matter, involving trained professionals to conceptualize projects, but also to have long-term resources from the federal government. Access to these services also needs to be free of bureaucracy. ■



# A LEGADO FOR EVERYONE

## Ecotourism

The year 2017 will always be remembered in Legado das Águas' history as the initial stage in the most important processes to feasibly turn Reserva into an area dedicated to ecotourism. After all, there are certainly enough attractions for anyone who has a connection with nature. Trekking, bird watching, cycling for several kilometers into the forest, the awe-inspiring beauty of the woodlands, and navigating the serene waters of the Juquiá River are just some of the options available.

"In 2017, we faced an important learning curve. We carried out a few experiments, such as **The Legado Experience**, and now, in 2018, we are going to build on what we have learned," says William Mendes de Souza, Ecotourism Analyst.

He continues, "Nothing like it is being done in any other private reserve. Neither the activities we offer here, nor the required infrastructures are available in other conservation areas. It is a challenging experience that we have made possible with the invaluable help of partner companies, such as Canoar, Sustentar, Velo Vert, Zoom Bike Park, Wild Life and the Manacá Institute."



*In Brazil, nothing like it is being done in any other private reserve.*

*William Mendes de Souza,  
ecotourism analyst*

Other achievements from 2017 were in relation to the infrastructure for visitors. New furniture for the bedrooms; the cafeteria was enlarged; and first aid facilities were installed. Souza adds, "To enable us to offer better security to visitors, we have also developed contingency plans for each activity carried out at Legado."

### Main Activities in 2017

#### Public Use

Opening up Mountain Bike tracks and inaugurating six other tracks between 8km and 78km long.

#### Legado Experience

- Visit to the Nursery and Orquidarium;
- Visit to the Cambuci Trail;
- A boat trip along the Juquiá River.

### Main objectives of the Ecotourism activities in Legado das Águas

- Income generation and shared value;
- Environmental conservation support;
- Encourage the connection between general and scientific knowledge.

### Prospects for 2018

- Mountain Bike: to complete works so that the wooden track is ready for public use;
- Train the teams for the biking and kayaking trips;
- Train more people in bird watching and mountain climbing;
- Improve direct operations and those with partners;
- Open the Reservation Center.

### A STRONG PRESENCE IN ENVIRONMENTAL EDUCATION

"In 2017, we took part in a number of activities for elementary students in Miracatu and Juquiá. We were also present in events in other cities and a number of schools came to Legado das Águas for environmental studies throughout the year. The plan for 2018 is that all of this happens more frequently, allowing greater integration between students and nature," says Elaine Izabel de Moura, Environmental Educational Analyst.

**MAR** World Water Day Celebrations: Schools in Juquiá held a week of activities;

**JUN** During the 1st Environmental Week, the Olympic Village and an old people's home in Juquiá, the *Centro de Convivência dos Idosos*, hosted talks by some of the researchers from Legado as well as a photo exhibition;

**AUG e OCT** Talks on snakes and refuse in the Riberão da Anta community;

**SET** Some 54 pre-school and elementary students from the Serraria School visited the nursery, the orchidarium, the Porto Raso reservoir and the Barra hydroelectric dam.

They also attended the 2nd School Conference on the Environment in Jujuitiba;

**OCT** During the Science and Technology Week at the Federal Institute in Registro, there were lectures on Legado that attracted over 200 people. A 360-degree film about Reserva was also shown.

#### Visits to Legado

Escola CLQ from Piracicaba, The American School from Campinas; Escola Arteris including students, teachers and the local population from Serra do Cafezal; University of Atibaia; Colégio do Carmo. Total: more than 210 people.

**Partnership established with three environmental educational agencies: Ivian, Quiron and Araribá.** ■

ACTIVITIES LINKED TO ECOTOURISM AND PUBLIC USE ALLOW MORE AND MORE PEOPLE TO DISCOVER THE LARGEST PRIVATE RESERVE IN THE ATLANTIC FOREST, IN BRAZIL.

# CHALLENGES AND ACHIEVEMENTS THROUGHOUT THE UNITED NATIONS' DECADE OF BIODIVERSITY

by Braulio F. de Souza Dias

Unfortunately, the main threats to biodiversity still exist all over the planet; all of them are a result of the impact the growing human population– unsustainable production systems, unsustainable consumption, over-exploitation of forest resources and fisheries, air pollution, water pollution and contaminated soil, deforestation, forest fires and the introduction of invasive foreign species. Besides the impacts caused by climate change, such as global warming, rising sea-levels, acidification of oceans, extreme climatic conditions are becoming more frequent and more intense. If we are unable to revert this, scientists are predicting that one third of plant and animal species could become extinct in the coming decades<sup>1</sup>. The world has already lost 90% of all humid areas, 50% of forests, more than 80% of the Atlantic Forest, around 70% of Pampas 50% of Cerrado and Caatinga, and more than 80% of the world's fishing grounds are over-exploited. We are consuming more than the planet can sustain, and this increasing human consumption is at the expense of the needs of other animal and plant species we share the world with<sup>2</sup>. And why should we concern ourselves with this loss of biodiversity?<sup>3</sup>

In 2016, Edward Wilson, a professor at the University of Harvard, published his book, *Half Earth, Our Planet's Fight for Life*, in which he puts forward the idea that man should leave at least half the Earth for the other species in the planet's biodiversity. In 1992, in Rio de Janeiro, all countries of the world came together to approve the United Nations' Convention on Biological Diversity (CBD). In 2010, in Nagoya, Japan, the countries came together again in the 10th Conference of Parties (COP) of the CBD in order to approve a Strategic

Plan for Biodiversity for the 2011-2020 period, including the 20 Global Biodiversity Objectives (known as the Aichi Biodiversity Targets). In the same year, a general meeting at the UN approved a resolution that designated 2011-2020 the UN's Decade of Biodiversity. In 2015, the UN general meeting approved the 2030 Sustainable Development Agenda and its 17 Sustainable Development Goals, which incorporated many of the Aichi Biodiversity Targets.

## BUSINESS ENGAGEMENT

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) was created in 2012, and in February 2016 it approved its first detailed specific evaluation on the decrease of pollinators and pollination and the enormous implications on agricultural production and food security. In December 2016, at the COP 13/CBD in Cancun, Mexico, decision XIII/15 was approved, calling on all governments and government agencies to introduce public policies, rural extension and training to reverse the decline of pollinators and the pollination deficits caused, among other reasons, by the excessive and inappropriate use of agrochemicals and by fragmentation and degradation of natural and semi-natural ecosystems. Another important decision, XIII/3, was also approved at COP 13/CBD, calling on all countries and agents to incorporate biodiversity management practices into their farming, cattle-raising, forestry, aqua-farming and fisheries. To obtain a more in-depth understanding of the advances, or lack of, in the implementation of these targets, I recommend reading two texts<sup>4</sup>.

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*The challenges are immense, but we are slowly making progress. Only by engaging the entire society will we succeed. We are all literally in the same boat, and companies are fundamental players.*

*Braulio F. de Souza Dias, professor of Ecology at the University of Brasilia and former Executive Secretary at the UN Convention on Biological Diversity*



In August 2010, a number of Brazilian businesses and organizations created the Business Movement for the Protection and Sustainable Use of Biodiversity, committing themselves to eight specific targets related to Brazilian biodiversity<sup>5</sup>. In June 2012, during the UN Conference on Sustainable Development (Rio +20), under the auspices of the CNI (National Confederation of Industry) in partnership with the Brazilian Business Council for Sustainable Development (CEBDS) and the Life Institute, the Brazilian Initiative for Business and Biodiversity was launched<sup>6</sup>. This and other initiatives lie

within the context of the Global Platform for Business and Global Biodiversity<sup>7</sup> presented in Tokyo in 2011 in order to align the business sector with objectives and targets of the Strategic Plan for Biodiversity for the years 2011-2020, as well as implementing the UN's Decade for Biodiversity, 2011-2022.

There are currently more than 20 national or sub-regional initiatives in business and biodiversity in the world. During the last COP/CBD in Cancun, Mexico, in December 2016, an invitation was sent to the world's companies to join the Business and Biodiversity Commitment<sup>8</sup>. More than 100 business organizations have already committed, including Votorantim<sup>9</sup>. Important steps taken on this path include amplifying national initiatives in business and biodiversity, the Capital Natural (Natural Capital) initiative<sup>10</sup>, the initiative to encourage company's to dedicate more space to biodiversity in their reports, and the initiative to include impact indicators in commodity production.

The contribution made to conserving biodiversity by Brazil's private sector includes creating and managing private reserves like Votorantim's Legado das Águas, maintained by mining companies, paper and cellulose producers, and other sectors. The creation and management of RPPNs<sup>11</sup>, are also included, as well as conserving and recuperating the APPs as foreseen in the Forest Code, in addition to conservation and sustainable use of legal reserves as established in the same code. The data from the Rural Environmental Register, although incomplete, show the scale and the importance of these private areas in conserving native ecosystems in Brazil. Besides this, a number of businesses finance biodiversity conservation projects, especially those involving threatened species. Petrobras is one such business. The Foundation *O Boticário de Conservação da Natureza*<sup>12</sup> has already financed more than 1,500 projects in Brazil in more than 25 areas of expertise.

The challenges are immense, but we are slowly making progress. Only by engaging the entire society will we succeed. We are all literally in the same boat, and companies are fundamental actors. ■

<sup>1</sup> 5th Evaluation Report of the International Panel on Climate - IPCC (<https://www.ipcc.ch/report/ars/>). <sup>2</sup> Global ecological footprint calculation and countries (<https://www.footprintnetwork.org/our-work/ecological-footprint/>). <sup>3</sup> "Biodiversity, Because it Matters!" published in 2017 in Cause magazine nº 5 (subject Nature): pp.94-100 (<http://cause-magazine.com/conteudo/2017/8/15/biodiversidade-por-que-importa->). <sup>4</sup> 4th Report on Biodiversity's Global Panorama (cbd.int/gbo4) and 5th National Report of Brazil for the CBD, vol. 50 in the series on Biodiversity / Ministry of the Environment Publications ([mma.gov.br/publicacoes/biodiversidade/category/142-serie-biodiversidade](http://mma.gov.br/publicacoes/biodiversidade/category/142-serie-biodiversidade)). <sup>5</sup> [mebrazil.org.br](http://mebrazil.org.br). <sup>6</sup> [ibnio.org](http://ibnio.org). <sup>7</sup> [cbd.int/business](http://cbd.int/business). <sup>8</sup> [cbd.int/business/pledges.shtml](http://cbd.int/business/pledges.shtml). <sup>9</sup> [cbd.int/business/signatories-and-supporters.shtml](http://cbd.int/business/signatories-and-supporters.shtml). <sup>10</sup> [naturalcapitalinitiative.org.uk](http://naturalcapitalinitiative.org.uk). <sup>11</sup> [rppnweb.com/site/index.php/cnrppn](http://rppnweb.com/site/index.php/cnrppn). <sup>12</sup> [fb.com/ComunicaRPPN](http://fb.com/ComunicaRPPN). [fundacaogrupoboticario.org.br](http://fundacaogrupoboticario.org.br).



# the Mirrored River

In 2017, as has been the case over the last six years, through his sensitive eye for detail, photographer Luciano Candisani, a partner of Legado das Águas, set himself the goal of capturing the most impacting and surprising images within this region, which represents one of the most important remaining areas of Atlantic Forest in Brazil.

This image, for example, captures its emblematic beauty. It shows the serene waters of Juquiá River, which divides Reserva in two, almost equal, halves, descending into a never-ending mass of forest. In the middle of this dense vegetation, we find several species native to the Atlantic Forest. It is not unusual to find trees more than 30 meters high; specimens of *jatobás* (*hymenaea courbaril*), *jequitibás* (*cariniana*), *ipês* (*tabebuia*), *perobas* (*aspidosperma polyneuron*) and *canelas* (*canella winterana*) which, apart from producing flowers and fruits, have other important ecological functions.

*Bromelias* (*bromeliaceae*) also grow in Reserva, as well as orchids, alongside a huge variety of fruit-bearing species, especially *cambuci* (*campomanesia phaea*), a tree which is becoming increasingly rare in urban areas. ■