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PUBLIC

SUMMARY

Forestry Management Plan I Santa Catarina



Klabin

# DEAR READER,



In the following pages, you will learn a little more about the efforts that Klabin makes to properly manage our forests and about our social and sustainability policies. This is a demonstration of Klabin's commitment to generate wealth, always respecting nature, our collaborators and society, in addition to maintaining the commitment to long-term adherence to the principles and criteria of the *Forest Stewardship Council*® - FSC®.

FSC® C023492





Mosaic planting.  
Photo: Anna Carolina Negri.

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# ABOUT KLABIN

Klabin is the largest producer and exporter of paper in Brazil and is a leader in the production of packaging paper and cards, corrugated cardboard packaging and industrial bags. It is also the only company in the country to simultaneously supply the market with hardwood pulp (eucalyptus), softwood (pine) and fluff pulp.

On July 22, 2000, Celucat and Igaras were merged, forming the forest complex of Klabin Florest Santa Catarina, which now manages an area of about 140 thousand ha, distributed in 39 municipalities of the state and the municipality of Lages is the social and economic development hub.





Klabin Otacílio Costa Factory.  
Photo: Coxilha Films.

# WOOD PURCHASING POLICY

Klabin seeks certification for all its units. When there is a need to purchase uncertified wood, Klabin is committed to implementing its best efforts to **avoid purchasing wood or wood fiber from the following categories:**

- Wood from illegal exploitation;
- Wood whose exploitation has led to the violation of civil and traditional rights;
- Wood obtained from forests whose high conservation value is threatened by management activities;
- Wood from forests whose land is being converted into plantations or intended for uses other than forestry, and
- Wood from forests where genetically modified trees are planted.

In 2004, the Forest Unit in Santa Catarina received forest certification from the FSC® (*Forest Stewardship Council® (FSC®)*), which ensures that its forest plantations adopt the best socio-environmental and economic practices.



# SUSTAINABILITY POLICY

Klabin S/A is a company that produces wood, paper and cardboard for packaging, corrugated cardboard packaging and bags. It operates in the domestic and foreign markets and is based on the following sustainability principles for all activities related to its products and services:

- 1.** Actively pursue the transition to a low carbon economy, applying and encouraging the allocation of investments and financial instruments that consider values and performance linked to Sustainability, ensuring transparency and reliability of the data that guide decision making, ensuring alignment with science and recognized parameters and, whenever pertinent, promote the verification of data consistency by a third party.
- 2.** Innovate and adapt the business model to be increasingly responsible in reviewing and defining the portfolio of products and strategic processes, towards positive solutions for nature.
- 3.** Map, measure and give transparency to the impact of environmental and social externalities generated by the company's business in relation to the territory and the relationship with stakeholders.
- 4.** Ensure compliance with the Klabin Agenda in its horizon and goals established based on the priority themes so that the company's performance and growth strategy are oriented towards economic development, environmental sustainability and social justice, considering the impacts and externalities of the business.
- 5.** Ensure the tone and statements in the marketing and communication approaches of Sustainability, ensuring that the messages are correct, accurate and guided only by the performance and practices maintained by the company.
- 6.** Promote a culture of dissemination of ethics and develop best corporate governance practices.

- 7.** Respect and promote human rights in accordance with the United Nations Guiding Principles on Business and Human Rights and other national and international commitments that provide guidelines on the subject, relevant to the operations of Klabin and its territories.
- 8.** Seek to apply the most efficient and current technologies and engineering solutions in the implementation of new projects and enterprises, ensuring the protection of human health, natural resources and the environment.
- 9.** Enhance circularity by seeking to develop partnerships for new business models and the eco-efficient design of products and processes, which maximize the reduction, reuse and recycling of products in the chain and by-products of the industrial process.
- 10.** Promote collaboration with customers, suppliers, academia, organized civil society and other stakeholders in the search for innovation for products and processes, and for improvements aimed at sustainability for the value chain.
- 11.** Seek competitive quality, aiming at the sustained improvement of its results, continuously researching, developing and improving existing and new processes, products and services, to meet the expectations of customers, collaborators, shareholders, the community, suppliers and other stakeholders.
- 12.** Ensure the valuation of the forest base from its transformation into sustainable and competitive products and ensure the supply of planted wood to its industrial units, in a sustainable manner, without harming the associated natural ecosystems, in its own operations and in those promoted.
- 13.** Ensure that the company's operations constantly seek to reduce Greenhouse Gas (GHG) emissions, considering the environmental impacts on its operations and investment projects so that they are compatible with the long-term objectives adopted by Klabin.
- 14.** Promote the conservation of biodiversity, through the development of practices that ensure increase in the ecosystem balance, encouraging research and partnerships with the academy and acting with commitment to use recognized forest management techniques, which includes conserving attributes and avoiding operations in preservation areas of natural heritage and/or containing species relevant to national and global biodiversity.



- 15.** Practice responsible water resource management, especially in areas of water stress, to ensure the availability of water in quality and quantity necessary to supply the territories where it operates.
- 16.** Avoid and prevent pollution by reducing environmental impacts related to water effluents, solid waste and atmospheric emissions, constantly considering these elements in the maintenance and improvement of production processes, in the development and improvement of products, in forestry and logistics operations, and in monitoring critical suppliers due to economic and socio-environmental aspects.
- 17.** Identify in advance the negative social impacts caused by our forestry, industrial and logistics operations to avoid, prevent and mitigate them. At the same time, enhance the positive impacts of our operations through programs and social actions in partnership with public, private and civil society institutions, promoting frequent, proactive and transparent engagement and contact with stakeholders.
- 18.** Comply with national (and international where applicable) legislation and standards on product safety and quality, the environment, and occupational health and safety. Promote the physical, mental and social well-being of direct and indirect collaborators, through the continuous improvement of working conditions, health and safety, with the commitment to consult and promote their active participation in the search for risk prevention and mitigation and the personal and professional development of each individual.
- 19.** Practice social responsibility with a focus on the communities where we operate according to the private social investment platform and our lines of action: local development (boosting the capacities of planning and participatory public management towards sustainable development), education, environment and culture.



*Cyanocorax caeruleus* (Azure Jay).  
Photo: Zig Koch.





*Araucaria angustifolia* (Brazilian Pine).  
Photo: Sumatra Inteligência Ambiental.

# KLABIN

## CODE OF CONDUCT

Since its foundation, Klabin has sought to develop itself in order to provide its collaborators, customers, suppliers and society in general with a relationship supported by ethical conduct and socially recognized principles. The high standards followed by Klabin are fundamental factors for the company's growth. The assumptions of Klabin's Code of Conduct go beyond the simple compliance with laws and policies and aim to standardize standards among its directors, officers and collaborators of the company, encouraging them to adopt behaviors and attitudes in their daily lives, guided by the guidelines and basic values established in this Code.

Klabin maintains the following communication channels for contact with the Ethics Committee – Ombudsman's office:

**E-MAIL: [OUVIDORIA@KLABIN.COM.BR](mailto:OUVIDORIA@KLABIN.COM.BR)**  
**[WWW.KLABIN.COM.BR/OUVIDORIA](http://WWW.KLABIN.COM.BR/OUVIDORIA)**  
**TELEPHONE: 0800 718 7814**





# **SOCIO-ENVIRONMENTAL** *RESPONSIBILITY POLICY* **FOR RECRUITING** **SUPPLIERS**

At Klabin, all businesses are guided by ethics, transparency and respect for the principles of sustainability, in order to ensure economic balance, social responsibility and environmental preservation. Therefore, the company seeks suppliers that follow the criteria specified in the Socio-environmental Responsibility Policy for Recruiting Suppliers.

The contract model was revised based on a standardization of sustainability aspects, such as punctuality of delivery, creditworthiness, respect for applicable laws, tax compliance, prohibition of child and forced labor and the adoption of measures to protect the environment. Parties interested in becoming suppliers for Klabin must access the company's website and the Contact Us > Supplier Registration tab.

Pine logs.  
Photo: Anna Carolina Negri.





# EXTERNAL COMMITMENTS

Klabin seeks to play an active role in socio-environmental and economic issues, voluntarily adhering to commitments proposed by recognized institutions, described in the following pages.



## GLOBAL TREATY

Aware of its influential role in mobilizing society to build a fairer and more sustainable country, Klabin has been a signatory to the Global Treaty since 2003. Developed by the United Nations (UN), the initiative, which has several organizations articulated around the world, aims to mobilize the international business community to adopt in their business practices fundamental values in the areas of human rights, labor relations, environment, and anti-corruption.



## NATIONAL TREATY FOR THE ERADICATION OF SLAVE LABOR

Launched in 2005, it brings together Brazilian and multinational companies that are committed to not negotiating with those who exploit slave labor. In addition to economically restricting employers who commit this crime, the treaty provides for the promotion of decent work, the social integration of workers in vulnerable situations, and the fight against grooming. Companies that are signatories to this initiative participate in the process of monitoring the treaty and are committed to making the results of their efforts to ban slave labor public. Klabin has participated in this initiative since 2013.



## BUSINESS SUSTAINABILITY INDEX (ISE)

Created in December 2005 by the BM&FBovespa, the Index assesses several aspects of sustainability in an integrated manner. Its goal is to act as a promoter of good practices in the Brazilian corporate environment. Companies are selected based on criteria established by Fundação Getulio Vargas (EAESP-FGV). Klabin has been part of the ISE since 2014.



## **SUSTAINABLE DEVELOPMENT GOALS - SDGS**

Since 2016, the Sustainable Development Goals (SDGs) have composed a global development agenda with 17 goals and 169 targets established by the United Nations (UN) for governments, society, and the private sector. The UN initiative brings together governments, civil society, and the private sector in a global agenda for people, planet, peace, and prosperity, defining global priorities and aspirations for 2030. Since then, Klabin has been working not only to highlight the initiatives that have already adopted and contributed to this agenda, but also to identify new opportunities for action and encourage the integration of the SDGs into the company's strategic planning. The goals are:

- 01.** Poverty eradication;
- 02.** Zero hunger and sustainable agriculture;
- 03.** Health and well-being;
- 04.** Quality education;
- 05.** Gender equality;
- 06.** Drinking water and sanitation;
- 07.** Clean and affordable energy;
- 08.** Decent work and economic growth;
- 09.** Industry, innovation, and infrastructure;
- 10.** Reduction of inequalities;
- 11.** Sustainable cities and communities;
- 12.** Responsible consumption and production;
- 13.** Action against global climate change;
- 14.** Life in the water;
- 15.** Terrestrial life;
- 16.** Peace, justice, and effective institutions;
- 17.** Partnerships and means of implementation.

## **BUSINESS TREATY FOR INTEGRITY AND AGAINST CORRUPTION**

The Treaty was launched in June 2006, on the initiative of the Ethos Institute for Business and Social Responsibility, UniEthos—Training and Development of Socially Responsible Management, Patri Government Relations & Public Policies, the United Nations Development Program (UNDP), the United Nations Office on Drugs and Crime (UNODC) and the Brazilian Global Treaty Committee.

The main commitments expressed in the text are:

- Information on legislation;
- Disclosure, guidance, and answers on legal principles applicable to its activities;
- Prohibition of bribery;
- Transparent and lawful contribution to political campaigns;
- Spread of the principles of the Treaty among its audiences;
- Open and transparent investigations;
- Operation in the production chain.

Klabin has been a signatory to this Treaty since 2013.







## **ID LOCAL**

The Local Development and Large Enterprises Initiative (IDLocal – Iniciativa de Desenvolvimento Local e Grandes Empreendimentos) aims to articulate the business sector to reflect, exchange experiences, and build business proposals and guidelines for local development. It promotes dialogue, study, articulation and co-creation of proposals, methodologies, and local management tools. All with the goal of inserting local development in the business strategy of companies responsible for investments in the neediest areas in the context of large enterprises. In 2014, Klabin was one of the companies recognized for the initiative (Cases of Innovation and Local Development) with the case “Structuring local empowerment and territorial engagement,” in the region of Paraná. The work brought together a set of interconnected actions focused on development of the community surrounding the company in that state. This activity has been going on since the 1980s, but with the Puma Project, the company’s actions are being extended to a wider radius of the community.



## **GHG PROTOCOL**

Originally developed in 1998, in the USA, by the World Resources Institute (WRI), the GHG Protocol is a tool used to understand, quantify, and manage the emissions of these gases: Klabin has been part of this program since 2013 with the goal of encouraging the corporate culture to prepare and publish inventories of Greenhouse Gas (GHG) emissions, providing participants with access to instruments and international quality standards.



## **CARBON DISCLOSURE PROJECT (CDP)**

Klabin has participated since 2006 in this global initiative, which aims to facilitate dialogue between investors and companies, minimizing the environmental impacts of their businesses in the face of climate changes.



## **FOREST DIALOGUE**

This is an unprecedented and independent initiative that facilitates interaction between representatives of companies in the forest-based sector, environmental organizations, and social movements with the objective of building a vision and a commitment that meets all sides. This occurs through effective actions associated with forestry production, in addition to expanding the scale of efforts to preserve and restore the environment, benefiting participants in the Forest Dialogue. Since 2009, Klabin has been a member of the program's Coordinating Council, which is composed of representatives from five companies and five civil society organizations.



## **TCFD**

We have implemented the recommendations of the Task Force on Climate Related Financial Disclosures (TCFD) and have been a TCFD Supporter since August 2020.



## **ABRINQ FOUNDATION**

The Abrinq Foundation Program recognizes organizations that defend childhood and adolescence through the Empresa Amiga da Criança (Child Friendly Company) seal, attesting that, among other actions, it does not exploit child labor and does not allow it in its production chain. In addition, it promotes social actions that encourage the education and learning of children and young people in the communities where it operates.



## **SUSTAINABILITY ACCOUNTING STANDARDS BOARD (SASB)**

In the management and reporting of the organization's sustainability issues, including environmental, social, and governance issues that impact its financial performance.

Among its main audience are large companies and investors. In 2020, Klabin started reporting the recommended SASB indicators for the packaging, pulp and paper, and forest sectors.



## **ECOVADIS**

Since 2019, Klabin has been the first Brazilian company to implement the Ecovadis methodology, a global provider of corporate sustainability ratings. In 2020, the company won the Platinum category in the EcoVadis Corporate Responsibility Assessment, joining the select group of 1% of companies with the best performance in the Pulp and Paper sector in the world.

Topics such as labor practices, human rights, the environment, ethics, and sustainable procurement are analyzed.

## **BUSINESS SUSTAINABILITY INDEX (ISE)**



Created in December 2005 by the BM&FBovespa, current B3, it assesses the several aspects of sustainability in an integrated manner. Its goal is to act as a promoter of good practices in the Brazilian corporate environment. Companies are selected based on criteria established by Fundação Getulio Vargas (EAESP-FGV). Klabin has been a member of the ISE since 2014.

## **WOMEN'S EMPOWERMENT PRINCIPLE**



We have been signatories to the Women's Empowerment Principle (WEP), a UN initiative since 2018. WEP is a set of considerations that helps companies to incorporate values and practices that aim at gender equity and women's empowerment into their businesses.





## **NEW B3 AND S&P DOW JONES INDEX**

Klabin is among the top 10 Brazilian companies that compose the S&P/B3 Brazil ESG portfolio. The new B3 and S&P Dow Jones index includes companies with the best socio-environmental and governance practices that have joined the UN Global Treaty.



## **CONSCIOUS CAPITALISM**

Conscious Capitalism is a global movement that was born in the United States. The Institute aims to touch company leaders to make more conscious strategic decisions and counts on the effort of different sectors to transform the way of doing investments and business in Brazil. Since 2020, Klabin has been associated with the movement.



## **COALITION BRAZIL CLIMATE, FORESTS AND AGRICULTURE**

A multisectoral movement with more than 250 organizations, which discusses approaches to the impacts of climate change and ways of acting to contribute to the formulation of public policies on the subject. It is composed of entities that lead agribusiness in Brazil, the main civil organizations in the environment and climate, important representatives of the academic world, sector associations, and leading companies in the areas of wood, cosmetics, steel, paper, and cellulose, among others.

## **WWF**



For the fourth time in a row, Klabin is included in the Environmental Paper Company Index 2019 (EPCI) – carried out every two years by the WWF (Worldwide Fund for Nature). We achieved a 90.5% score in the packaging category, an increase of 8.9% in the general index compared to the last study, released in 2017. In total, 30 companies of the sectors were analyzed that together represent 18% of the world's total pulp and paper production.

# DESCRIPTION OF THE ENTERPRISE

Aiming at the practice of sustainable development, Klabin Santa Catarina has been carrying out its forest management activities according to the guidelines:

## **Main objective:**

Wood production for the pulp and paper industry and for the log trade.

## **Secondary objectives:**

1. Exclusive use of planted forests;
2. Biodiversity maintenance based on knowledge, monitoring and protection of local fauna and flora species;
3. Soil conservation through the adoption of environmental concepts in land preparation and road opening/maintenance operations;
4. Protection of water resources through a Re-composition Program of the permanent preservation areas;
5. Economic sustainability and forest competitiveness through strategic planning, the development of new technologies for superior genetic materials and forest management studies;
6. Social approach in the implementation, expansion and maintenance of forest areas and inherent activities;
7. Maintenance of High Conservation Value Forests based on the knowledge and protection of the attributes that define these areas;
8. Commitment to FSC® Criteria Principles



Timber Harvest.  
Photo: Anna Carolina Negri.



The following table presents the general characteristics of Klabin's forest heritage in Santa Catarina:

**Table 1 - Klabin's Florest Heritage in Santa Catarina**

Forest Areas	Total SC (ha)
Total Klabin SC Forest Area	136.084,95
FSC® Certified Forest Area	135.624,60
Total Klabin SC Planted Forests	61.010,55
FSC® Certified Planted Forests	60.856,01
Total Klabin SC Preserved Native Forests	67.977,36
FSC® Certified Preserved Native Forests	67.786,54
Total Infrastructure of Klabin SC <sup>1</sup>	7.097,55
FSC® <sup>1</sup> certified infrastructure	6.982,55

Dátabase: 05/31/2021

<sup>1</sup> Roads, dividers. Ponds, improvements, etc.



# LOCATION

## Region:

Região de Lages

## Geographic location:

Latitude 27° 50'S and Longitude 50° 15'W

## Average altitude:

850 m;

## Municipalities covered:

Agrolândia, Alfredo Wagner, Bela Vista Toldo, Bocaina do Sul, Bom Retiro, Braço do Trombudo, Campo Belo do Sul, Canoinhas, Capão Alto, Cerro Negro, Chapadão do Lajeado, Correia Pinto, Curitibanos, Ibirama, Imbuia, Itaiópolis, Lages, Leoberto Leal, Major Vieira, Monte Castelo, Otacílio Costa, Paineira, Palmeira, Papanduva, Petrolândia, Ponte Alta, Ponte Alta do Norte, Rio do Campo, Rio do Sul, Rio Rufino, Santa Cecília, Saletê, São Cristóvão do Sul, São José Cerrito, Taió, Timbó Grande, Urubici, Urupema e Vidal Ramos.

## Socio-economics:

The municipalities where Klabin operates in Santa Catarina generally have good Municipal Human Development Indexes – MHD, with room for economic growth in the less favored classes. In the 39 municipalities where the company operates, the average is 0.699 MHD compared to 0.774 MHD in Santa Catarina (IBGE, 2010).



Frosty morning at Serra da Farofa Complex RPPN. Photo: Zig Koch.

## GEOCLIMATIC DATA

**Weather:** the predominant mesothermal climate in Santa Catarina provides pleasant temperatures, ranging from 13° to 25°C, with rainfall distributed throughout the year. Temperate, humid, with uniformly distributed rainfall throughout the year, the climate here is classified as Cfb according to the Köppen classification. The occurrence of frosts in the region is common in winter periods, with approximately 27 frosts recorded per year.

**Average annual temperature:** 17,8 °C;

**Annual rainfall:** 1.841 mm.

**Geology:** the geology of the State of Santa Catarina can be outlined in three areas: Atlantic Shield, Paraná Basin and Quaternary Sediments. The sedimentary strip of the Paraná Basin in the state of Santa Catarina (where the company's forest management areas are located) consists of carboniferous, Permian and Triassic sediments, marked as Tubarão Super-Group, Passa-Dois and São Bento Groups.

**Relief:** the Lages Plateau is characterized, for the most part, by a homogeneous dissection relief with hilly formations. In some sections, the presence of topographic ridges is observed, usually facing the Southeast. The elevations in most of the unit are around 850 to 900 m; the Morro do Tributo at 1,200 m. and as the highest point in Klabin's areas is the antenna hill in Urupema at 1785 m.

**Hydrology:** According to codification level 1 of the River Basins in Brazil, the state of Santa Catarina



comprises three River Basins: the Paraná/Paraguay River Basin, the Uruguay River Basin and the South and Southwest Atlantic Basin. Klabin's planted area in Santa Catarina cover areas in these basins, in Hydrographic Regions 4,5 and 7.

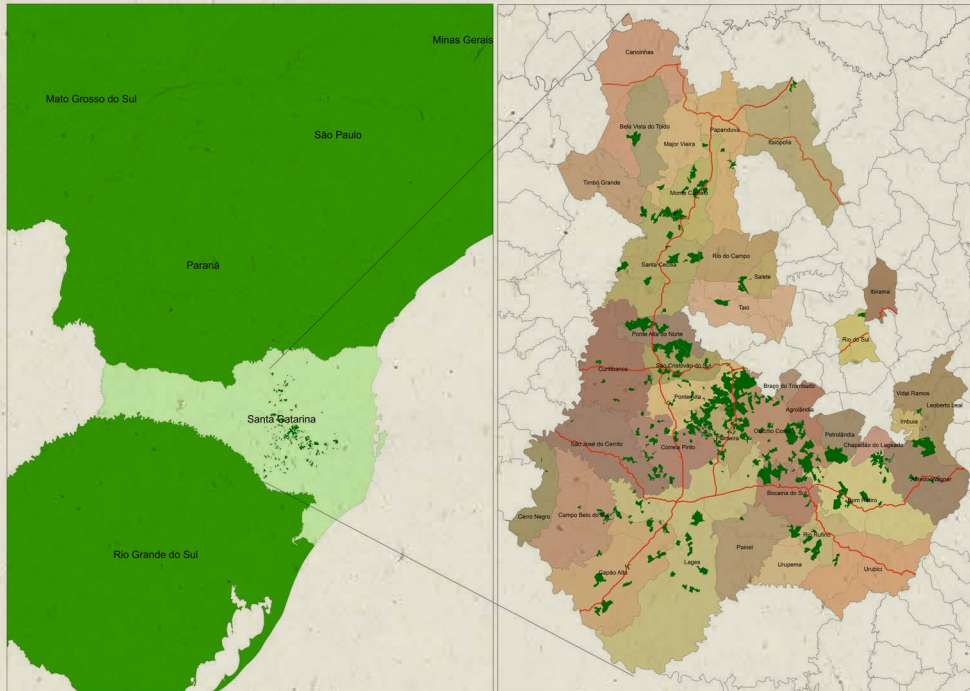


Figure 1 - Location of Klabin SC Forest Properties

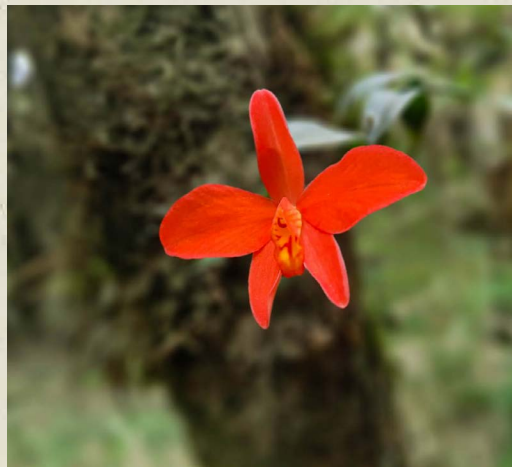
## BIOLOGICAL DATA

**Flora:** the predominant vegetation cover in the Klabin coverage region in SC is a Mixed Ombrophilous Forest, with areas in the types of vegetation in the Fields and Dense Ombrophilous Forest. Inserted in the Atlantic Forest area, the preserved forests that Klabin maintains constitute one of the most important Brazilian biomes. The currently available data refer to surveys carried out on several farms of the company where 880 species of native flora were identified (Table 2), distributed as follows:

**Table 2 – No. of flora species identified on Klabin's Farms – SC**

Life-form	Species identified	Species with recognized conservation status
Trees/ Shrubs	552	180
Herbaceous	275	59
Epiphytes	15	4
Liana	38	8
<b>Sub-total plantas</b>	<b>880</b>	<b>251</b>

Source: Klabin-S. A., 2022.



*Cattleya coccinea* (Red orchid).  
Photo: Sumatra Inteligência Ambiental.

In Klabin's areas, where the flora surveys took place, 90 species were found that fall into critical categories under the threat of extinction (CR, EN and VU) according to the official list of IUCN (International Union for Conservation of Nature) 2021, Ministry of Environment (MMA Ordinance no. 443/2014), CONSEMA (State Environment Council of SC - Resolution no. 51/2014) and List of Endangered Flora of RS (FZB, 2014):

**Table 3-Flora species with conservation status recognized in more critical categories identified on Klabin's farms in SC.**

Growth Habit	Scientific name	Common name	Foreign	Domestic	SC	RS
Grass	<i>Aechmea kleinii</i>	Bromeliad	EN	EN	EX	---
Grass	<i>Aechmea pimentii-velosoi</i>	Gravata	DD	DD	EX	---
Grass	<i>Alstroemeria brasiliensis</i>	***	---	EN	---	---
Tree	<i>Aniba firmula</i>	Cinnamon	---	---	---	CR
Shrub	<i>Apteria aphylla</i>	***	---	---	---	VU
Tree	<i>Apuleia leiocarpa</i>	Grapia	---	---	---	CR
Tree	<i>Araucaria angustifolia</i>	Brazilian pine	CR	EN	CR	VU
Grass	<i>Athyrium dombeyi</i>	***	---	---	---	EN
Shrub	<i>Azara uruguayensis</i>	Amargoso	---	NT	---	VU
Grass	<i>Billbergia alfonsojoannis</i>	***	---	LC	VU	---
Grass	<i>Botrypus virginianus</i>	***	VU	LC	---	---
Tree	<i>Buchenavia kleinii</i>	***	---	LC	---	EN



Growth Habit	Scientific name	Common name	Foreign	Domestic	SC	RS
Tree	<i>Butia eriospatha</i>	Wooly jelly palm	VU	VU	CR	EN
Shrub	<i>Calibrachoa elegans</i>	Calibrachoa, false petunia	---	EN	---	---
Shrub	<i>Calibrachoa linoides</i>	Petunia	---	---	---	EN
Tree	<i>Campomanesia guaviroba</i>	Guabiroba	---	---	---	CR
Tree	<i>Campomanesia neriiflora</i>	Guabiroba branca	VU	LC	---	---
Tree	<i>Campomanesia reitziana</i>	***	NT	VU	---	---
Tree	<i>Cedrela fissilis</i>	Cedar	EN	VU	---	---
Tree	<i>Cedrela odorata</i>	Cedarwood, red cedar	VU	VU	---	---
Tree	<i>Cinnamomum triplinerve</i>	***	---	LC	---	EN
Tree	<i>Clethra scabra</i>	Carne-de-vaca	---	LC	---	VU
Shrub	<i>Clethra uleana</i>	Caujuja-de-uile	---	LC	---	EN
Shrub	<i>Cuphea lindmaniana</i>	***	EN	EN	---	---
Tree	<i>Cyathea corcovadensis</i>	Xaxim-de-espinho	DD	---	---	VU
Tree	<i>Dicksonia sellowiana</i>	Xaxim	---	EN	CR	VU
Tree	<i>Drimys angustifolia</i>	Casca-de-anta	---	---	---	VU
Grass	<i>Dyckia hatschbachii</i>	Gravata, bromeliad	---	CR	---	---
Grass	<i>Eriocaulon magnificum</i>	Gravatá-manso	---	---	---	VU
Grass	<i>Eriocaulon modestum</i>	***	---	---	---	VU
Grass	<i>Eryngium zosterifolium</i>	Gravata, caraguata	---	VU	---	EN
Tree	<i>Eugenia neomyrtifolia</i>	***	---	---	---	EN
Tree	<i>Eugenia repanda</i>	Pitanga-amarela	LC	EN	---	---

Growth Habit	Scientific name	Common name	Foreign	Domestic	SC	RS
Tree	<i>Geonoma schottiana</i>	Guaricana	---	---	---	EN
Liana	<i>Griselinia ruscifolia</i>	***	---	---	---	VU
Tree	<i>Guatteria australis</i>	Cork	---	LC	---	VU
Tree	<i>Heisteria silvianii</i>	Casca-de-tatu	LC	---	---	EN
Grass	<i>Hymenophyllum magellanicum</i>	***	---	LC	---	VU
Grass	<i>Hypochaeris catharinensis</i>	***	---	---	VU	---
Tree	<i>Inga lentiscifolia</i>	Inga	VU	NT	---	NT
Grass	<i>Lomaria spannagelii</i>	***	---	---	EX	---
Shrub	<i>Margaritaria nobilis</i>	Figueirinha	---	---	---	EN
Tree	<i>Maytenus boaria</i>	Coração-de-bugre	---	---	---	VU
Shrub	<i>Mikania decumbens</i>	Graco	---	NT	---	EN
Liana	<i>Mikania oreophila</i>	Guaco	---	EN	---	EN
Liana	<i>Mikania ulei</i>	Guaco	---	LC	---	EN
Shrub	<i>Mimosa taimbensis</i>	Bracatinga-mirim	EN	---	VU	---
Shrub	<i>Mollinedia elegans</i>	Pimenta-do-mato	LC	---	---	---
Shrub	<i>Mollinedia schottiana</i>	Pepper plant	LC	---	---	---
Shrub	<i>Monteverdia evonymoides</i>	Laranjinha, tiriveira	---	---	---	EN
Tree	<i>Moquiniastrum polymorphum</i>	Cambara	---	---	---	EN
Tree	<i>Myrceugenia bracteosa</i>	***	VU	EN	---	---
Tree	<i>Myrceugenia gertii</i>	Guamirim	---	EN	---	---
Tree	<i>Myrceugenia scutellata</i>	***	VU	NT	---	---
Tree	<i>Myrcianthes pungens</i>	Guabiju	EN	---	---	---

Growth Habit	Scientific name	Common name	Foreign	Domestic	SC	RS
Tree	<i>Myrciaria cuspidata</i>	Camboim	VU	LC	---	---
Tree	<i>Myrocarpus frondosus</i>	Cabreuva	---	---	---	VU
Tree	<i>Ocotea catharinensis</i>	Canela-preta	VU	VU	CR	VU
Tree	<i>Ocotea lancifolia</i>	Cinnamon	---	LC	---	EN
Tree	<i>Ocotea nectandrifolia</i>	Cinnamon	---	---	---	VU
Tree	<i>Ocotea odorifera</i>	Canela-sassáfras	---	EN	---	CR
Tree	<i>Ocotea porosa</i>	Imbuia	VU	EN	CR	EN
Tree	<i>Ocotea silvestris</i>	Canela-copaíba	---	LC	---	VU
Tree	<i>Oreopanax fulvum</i>	Figueira-braba	---	LC	---	VU
Shrub	<i>Ossaea amygdaloides</i>	Pixirica	---	---	---	EN
Liana	<i>Passiflora actinia</i>	Passion fruit	---	LC	---	EN
Tree	<i>Pausandra morisiana</i>	Almecega-vermelha	---	---	---	CR
Shrub	<i>Perezia squarrosa</i>	Daisy	---	---	---	CR
Tree	<i>Persea willdenovii</i>	Pau-andrade	---	---	---	CR
Tree	<i>Picramnia parvifolia</i>	Pau-amargo	---	LC	---	VU
Liana	<i>Piptadenia affinis</i>	***	---	---	VU	---
Grass	<i>Plagiogyria fialhoi</i>	Fern	---	LC	DD	EN
Tree	<i>Podocarpus lambertii</i>	Pinheiro-bravo	NT	LC	EN	---
Tree	<i>Podocarpus sellowii</i>	Pinheiro-bravo	EN	LC	---	CR
Tree	<i>Psidium longipetiolatum</i>	***	---	LC	---	EN
Tree	<i>Quillaja lancifolia</i>	Pau-de-sabão	---	EN	---	---
Tree	<i>Rhamnus sphaerosperma</i>	Canjica	---	---	---	VU
Shrub	<i>Rudgea jasminoides</i>	Jasmine	LC	VU	---	---



Growth Habit	Scientific name	Common name	Foreign	Domestic	SC	RS
Tree	<i>Sessea regnellii</i>	Coerana	---	LC	---	CR
Grass	<i>Setaria parviflora</i>	Capim-rabo-de-raposa	LC	EN	---	---
Shrub	<i>Solanum aparadense</i>	***	---	---	---	EN
Tree	<i>Solanum reitzii</i>	Canema	---	---	---	EN
Tree	<i>Styrax acuminatus</i>	Pau-de-remo	---	LC	---	EN
Shrub	<i>Symphyopappus lymansmithii</i>	***	---	NT	VU	---
Tree	<i>Symplocos itatiaiae</i>	***	---	EN	---	---
Shrub	<i>Syngonanthus chrysanthus</i>	***	---	---	---	EN
Grass	<i>Tibouchina rupestris</i>	***	---	---	---	EN
Shrub	<i>Tibouchina urvilleana</i>	Orelha-de-onça	---	---	---	EN
Shrub	<i>Trichocline catharinensis</i>	Cravo-do-campo-catarinense	LC	---	---	VU
Grass	<i>Vriesea biguassuensis</i>	***	---	EN	EX	---

In what: Official IUCN (International Union for Conservation of Nature) List 2021 version, Official National List of Endangered Flora Species – (MMA, 2014), Official List of Endangered Flora Species in the State of Santa Catarina (CONSEMA, 2014), List of Endangered Native Flora Species in the State of Rio Grande do Sul – (FZB, 2014). Where: AE: Endangered; EX: Presumably extinct; CR - Critically endangered; EN - Endangered; VU – Vulnerable; NT - Almost endangered; LC - Safe or not concerning; DD – Insufficient Data; R – Rare.

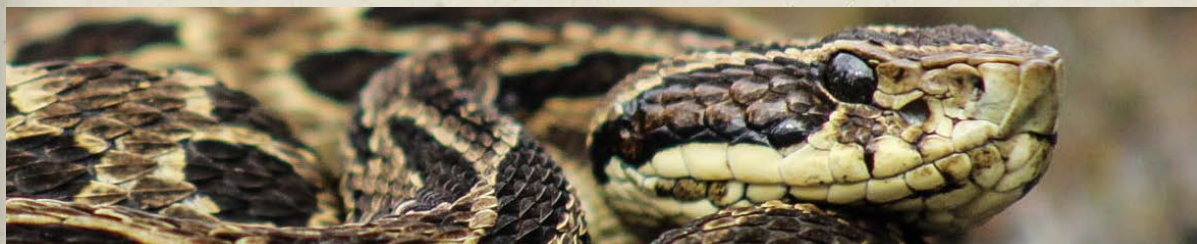
Source: Klabin S. A., 2022.

**Fauna:** The wildlife survey activities in the Klabin areas in Santa Catarina began in 2003, with surveys of avifauna (birds) and mammalian fauna (large mammals) and over the years the surveys were carried out in the other groups. The table below shows the number of species identified per group.

**Table 4 – No. of fauna species identified on Klabin farms in SC**

Class/Group	Species identified	Species with recognized conservation status
Amphibians	29	29
Birds	315	315
Mammals	47	43
Fish	18	10
Invertebrates	103	1
Reptiles	16	16
<b>TOTAL</b>	<b>528</b>	<b>414</b>

Source: Klabin S.A., 2022.



*Bothrops cotiara* (Cotiara). Photo: Sumatra Inteligência Ambiental.

Among these species, some have their conservation status recognized at critical levels by official lists.

**Table 5 – Fauna with conservation status recognized in more critical categories identified on Klabin farms in SC.**

Scientific name	Common name	Group	Foreign	Domestic	SC	RS
<i>Scinax rizibilis</i>	Santo Andre snouted treefrog	Amphibians	LC	LC	---	CR
<i>Vitreorana uranoscopa</i>	Glass frog	Amphibians	LC	LC	VU	NT
<i>Amazona pretrei</i>	Red-spectacled parrot	Birds	VU	VU	EN	---
<i>Amazona vinacea</i>	Vinaceous-breasted parrot	Birds	EN	VU	EN	VU
<i>Anabacerthia amaurotis</i>	White-browed foliage-gleaner	Birds	NT	LC	---	NT
<i>Attila rufus</i>	Grey-hooded Attila	Birds	LC	LC	---	---
<i>Cinclodes pabsti</i>	Long-tailed cinclodes	Birds	NT	NT	VU	---
<i>Cissopis leverianus</i>	Magpie tanager	Birds	LC	LC	EN	---
<i>Clibanornis dendrocolaptoides</i>	Canebrake groundcreeper	Birds	NT	LC	---	---
<i>Cnemotriccus fuscatus</i>	Fuscous flycatcher	Birds	LC	LC	---	---
<i>Colonia colonus</i>	Long-tailed tyrant	Birds	LC	LC	---	---
<i>Contopus cinereus</i>	Tropical pewee	Birds	LC	LC	---	---
<i>Drymophila rubricollis</i>	Bertoni's antbird	Birds	LC	LC	---	---
<i>Eleoscytalopus indigoticus</i>	White-breasted tapaculo	Birds	NT	LC	---	---
<i>Hemitriccus diops</i>	Drab-breasted bamboo tyrant	Birds	LC	LC	EN	---
<i>Hydropsalis anomala</i>	White-tailed nightjar	Birds	---	NT	---	EN
<i>Limnortites rectirostris</i>	Straight-billed reedhaunter	Birds	NT	NT	CR	CR
<i>Mackenziaena severa</i>	Tufted antshrike	Birds	LC	LC	---	---



Scientific name	Common name	Group	Foreign	Domestic	SC	RS
<i>Myrmotherula unicolor</i>	Unicolored antwren	Birds	NT	LC	---	---
<i>Patagioenas plumbea</i>	Plumbeous pigeon	Birds	LC	LC	---	---
<i>Phacellodomus striaticollis</i>	Spot-breasted thornbird	Birds	LC	---	VU	CR
<i>Phylloscartes difficilis</i>	Serra do Mar tyrannulet	Birds	NT	LC	EN	VU
<i>Procnias nudicollis</i>	Bare-throated bellbird	Birds	VU	NT	---	---
<i>Pseudastur polionotus</i>	Mantled hawk	Birds	NT	NT	---	NT
<i>Spizaetus ornatus</i>	Ornate hawk-eagle	Birds	NT	NT	CR	EN
<i>Spizaetus tyrannus</i>	Black hawk-eagle	Birds	LC	LC	---	VU
<i>Sporophila hypoxantha</i>	Tawny-bellied seedeater	Birds	LC	VU	VU	VU
<i>Sporophila plumbea</i>	Plumbeous seedeater	Birds	LC	LC	---	EN
<i>Tangara peruviana</i>	Black-backed tanager	Birds	VU	VU	EN	---
<i>Urubitinga coronata</i>	Crowned eagle	Birds	EN	EN	CR	CR
<i>Xanthopsar flavus</i>	Saffron-Cowled blackbird	Birds	VU	VU	CR	---
<i>Xolmis dominicanus</i>	Black-and-white monjita	Birds	VU	VU	EN	EN
<i>Alouatta guariba</i>	Brown Howler monkey	Mammals	LC	VU	VU	VU
<i>Chironectes minimus</i>	Water opossum	Mammals	LC	DD	VU	VU
<i>Cuniculus paca</i>	Lowland paca	Mammals	LC	LC	VU	VU
<i>Dasyprocta azarae</i>	Azara's agouti	Mammals	DD	LC	---	VU
<i>Eira barbara</i>	Tayra	Mammals	LC	LC	---	VU
<i>Leopardus guttulus</i>	Southern tiger cat	Mammals	VU	VU	---	VU
<i>Leopardus pardalis</i>	Ocelot	Mammals	LC	LC	EN	VU

Scientific name	Common name	Group	Foreign	Domestic	SC	RS
<i>Leopardus wiedii</i>	Margay	Mammals	NT	VU	---	VU
<i>Mazama americana</i>	Red brocket	Mammals	DD	DD	EN	EN
<i>Mazama nana</i>	Pygmy brocket	Mammals	VU	VU	VU	EN
<i>Nasua nasua</i>	Nasua	Mammals	LC	LC	---	VU
<i>Ozotoceros bezoarticus</i>	Pampas deer	Mammals	NT	VU	VU	CR
<i>Pecari tajacu</i>	Collared peccary	Mammals	LC	LC	VU	EN
<i>Puma concolor</i>	Cougar	Mammals	LC	VU	VU	EN
<i>Puma yagouaroundi</i>	Jaguarundi	Mammals	LC	VU	---	VU
<i>Sylvilagus brasiliensis</i>	Forest rabbit	Mammals	EN	LC	---	EN
<i>Tamandua tetradactyla</i>	Southern tamandua	Mammals	LC	LC	---	VU

In what: Official IUCN (International Union for Conservation of Nature) List 2021 version, Red Book of Endangered Brazilian Fauna (ICMBio, 2018); Official List of Endangered Fauna Species in the State of Santa Catarina (CONSEMA Resolution no. 002/2011) and List of Endangered Fauna in the State of Rio Grande do Sul (FZB, 2014). Where: CR - Critically endangered; EN - Endangered; VU – Vulnerable; NT - Almost endangered; LC - Safe or not concerning; DD – Insufficient Data; Source: Klabin S. A., 2022.



# **FOREST** MANAGEMENT

## **PLANTING PINE AND EUCALYPTUS**

The company is recognized for the sustainable management adopted, which aims to multipurpose timber forestry with pine and eucalyptus plantations interspersed with native forests in forest mosaic systems. The use of environmentally sound practices used by the company in its forest management, as well as proper management of the landscape, provide excellent use of the production potential of forests and the protection of natural resources.



## Research

Through studies, it seeks to ensure the maintenance and improvement of forest productivity, considering the quality of plantations and fibers for use in pulp production, through the development and adaptation of new technologies and sustainable forest management. It operates in the specialties of: Forest Improvement, Cloning and Biotechnology, Nutrition and Silviculture, Forest Plant Health and Wood Quality.

## Micro Watershed

In order to maintain monitoring of the river basins, Klabin participates in the experimental network for environmental monitoring (ReMAM) through the Environmental Monitoring Program (PROMAB) and the Institute of Forest Research and Studies (IPEF).

PROMAB gathers information from several companies, with experimental micro watersheds located in reforestation, native forest and pasture areas in different soil and climate conditions in the country. This allows information to be continuously collected on the hydrological functioning of these areas, as well as the identification of hydrological

indicators of sustainable management of forest plantations.

Hydrological monitoring at Klabin in Santa Catarina is being carried out in two micro watersheds, one spillway installed in a contribution area within native forest and another in a contribution area with planting of *Pinus taeda*. The two micro watersheds are located on the Cavaletti farm, located in the municipality of Ponte Alta.



Klabin micro watershed (PROMAB) - spillway of the native area

## Forest Planning and Management

The planning area studies the various components of forest management in order to ensure the sustainability of forests in an orderly manner, ensuring the factory supply and commercialization of wood for sawmills. It has short-term (annual)

and long-term (30 years) planning. Harvest rates and forest intervention strategies are defined based on inventory data, studies and simulations. Information from the forest resource base for monitoring forest growth and dynamics is also assessed. The areas of forest registration, geoprocessing, inventory and microplanning of the areas in operation support the planning.

### **Forest Operations**

Klabın is self-sufficient in seed production activity, relying on seed orchards per seedling and clonal seed orchards. The surplus production of pine and eucalyptus seeds has been marketed since 1969.

### **Silviculture**

The main silviculture activities are carried out by in-house teams and include preparation of the land, with operations that ensure conservation of soils and water resources; planting seedlings; control of leaf-cutting ants; weed control and fertilization

according to technical recommendations.



### **Harvest**

The mechanized and integrated system of forest harvesting ensures the cutting of wood in hard to reach places due to the characteristics of the soil (mud, slopes, etc.) and also reduces the loss of raw material in the process.

In addition, forest mechanization aims to provide collaborators with better working conditions and safety. This activity is carried out according to strict control to protect the adjacent native forest. For the mechanized forest harvesting system, the following harvesting methods are carried out at Klabin:

- **Full-Tree System:** In the Full-Tree method or known as the full tree system, the wood is knocked down (Feller Buncher or Shovel Logger - very steep terrain or near risk areas), dragged to the loading points (6x6 and 4x4 skidder) and subsequently processed and sectioned into the desired assortments (Harvester).

- **Cut-to-length system (CTL):** In the CTL method or known as the short log system, the wood is felled and subsequently processed inside the plot (Harvester). Then, the wood already sectioned in the desired assortments is transferred (8x8 forwarder) to the loading points.

- **Loading and Unloading:** It is loaded and unloaded using mechanical loaders with conveyors.

## **Biomass**

The plant material consisting of tips, branches, leaves and logs with diameter and length not usable in the harvesting activity is called Biomass. It comes from the forest harvesting activity. It is processed through a chipping operation with equipment and an in-house team. After chipping, the material is sent to the factory for energy use that is generated from burning this material in a boiler, generating steam. The objective of biomass burning in the pulp and paper production process is steam generation as a source of lime, renewable and job-producing energy.

## **Logistics**

In the logistics area are the activities of road construction/maintenance, loading and transporting wood. Loading and transportation activities are carried out by in-house and third-party teams. The timber is transported to the yards of the manufacturing units, sold directly on the farm or delivered to the customer. In road operations, the company has third-party teams and an in-house team. In addition to the



construction and maintenance of private roads on the farms, the company maintains the roads for collective use in the communities where it operates in good condition and sprays down the routes with intense traffic to minimize the impact of dust on its activities.

In addition, it partners with city halls to maintain these roads, with the donation of gravel, wood for bridges, pipes for culverts, labor and machinery to execute the works, etc.

## Forest Protection

- **Pest Monitoring and Control:** a program for monitoring and controlling pests and diseases is maintained, aiming to identify species that may present some potential risk to forests.
- **Forest Heritage Security:** The company has an outsourced structure with its own management of forest heritage security. The surveillance structure consists of a structured team with vehicles and motorcycles, radio communicators, GPS and digital cameras. It acts in firefighting and in protecting fauna and flora, predatory hunters and fishermen are deterred, through preventive and/or corrective measures of mobile patrols and constant surveillance in Klabin's areas.



Timber Harvest. Photo: Anna Carolina Negri.



# **SOCIO-ENVIRONMENTAL** *RESPONSIBILITY*

The practice of socio-environmental responsibility is a premise of Klabin, which promotes and supports social, cultural and environmental projects in the communities where it operates.





Environmental Education on the Araucária Trail – Correia Pinto, SC  
Photo: Anna Carolina Negri.



## KLABIN AND ITS COLLABORATORS

People are of great importance to Klabin. Therefore, we select and make a point of keeping the best professionals, those who are aligned with our values and committed to building a better company on a daily basis.

**Better for everyone:** customers, suppliers, collaborators, people in the community, friends, family, neighbors or any of the millions of people who use the company's products daily. For Klabin, people are more than resources within a company. Therefore, it abolished the term Human Resources, which was replaced with People & Management. More current and true, this nomenclature emphasizes the respect and importance that the company dedicates to human capital, a fundamental part that moves its business. We believe that people offer, in their individuality, skills and potentials that contribute to the construction of a culture of engagement,

development and results among all collaborators.

**Klabin offers a number of benefits, which are presented during the interview.**

**Solidity:** Klabin is a company that has been in the Brazilian market for over a hundred years. It is a leader in the industry, has numerous certifications and market recognitions. Even those who have not heard of Klabin have certainly come into contact with some of their products that package important brands in the country.

**Future career:** the market Klabin operates in is growing. This means that people working in this area will have opportunities in the future.

**Courses and training:** the company offers courses for the different career activities and stages. The company's professionals are prepared to become better. That makes a huge difference. The company contributes to

the development of the collaborator and the collaborator participates in the development of the company. The Klabin Business School is one of the examples of this practice and supports professional development and leadership training in the company.

**Management of the internal environment:** just as Klabin takes care of the forests, it also preserves the work environment. The company is dedicated to the safety of its processes and management of the internal climate so that professionals feel safe and motivated in their day-to-day work.

**High performance:** leaders are always attentive to the performance of professionals so that the company can maintain a reciprocal relationship with each person. Klabin promotes collaborator performance evaluations and encourages the definition of indicators and goals in order to create variable compensation for eligible positions.

**Quality of life:** for Klabin, well-being is essential for employee productivity and quality of life. To this end, the company maintains the Klabin Quality of Life Program (PKQV), coordinated by health professionals and human resources who are part of the Preventive Medicine and Quality of Life Committee. Based on five pillars, preventive medicine, nutritional guidance, physical activity/integration, alternative therapies and educational actions, the Program puts into practice actions aimed at the balance between professional and personal life.

## OCCUPATIONAL HEALTH AND SAFETY (OHS)

Since 2005, the company has implemented Klabin Excellence in Occupational Health and Safety, a corporate program that aims to implement and disseminate occupational safety and health management techniques and tools, composing a system that allows the identification of risks and treatments for

effective control, aiming at ensuring life, health and physical integrity of people. The fundamentals of the SSO Program are:

- Visible Commitment: from all levels of leadership, through their attitudes;
- Line Responsibility: all leadership levels are responsible for management in their area;
- Operational discipline: behavior and attitudes of people at all levels and areas of activity.

## **KLABIN AND THE COMMUNITY**

### **Environmental Education**

#### **Klabin Caiubi program**

The Klabin Caiubi Program aims to disseminate ecological awareness concepts among teachers and students from various schools in the mountain plateau region. In 2020, due to the pandemic, the program was innovated with an online edition covering the municipalities of Lages and Correia Pinto. As in 2021, online for the 34th edition of the program, which involved the municipalities of Lages, Otacílio Costa, Monte Carlo and Petrolândia. In 2022, other municipalities in Klabin's area of activity will be included in the program, but now in person. To date, the program has reached 652 schools, 1,656 teachers and 223,640 students in the stages carried out in the state of Santa Catarina. In 2020, the Klabin Caiubi program received its own website that can be visited at:

**[www.caiubi.klabin.com.br](http://www.caiubi.klabin.com.br)**





## SUMMARY OF PARTICIPATING MUNICIPALITIES:

2007 – 1st Edition - Bocaina do Sul  
2007 – 2nd Edition - Correia Pinto  
2007 – 3rd Edition - Otacílio Costa  
2007 – 4th Edition - Lages  
2008 – 5th Edition – Rio Rufino  
2008 – 6th Edition – Lages  
2008 – 7th Edition – Palmeira  
2008 – 8th Edition – Bom Retiro  
2009 – 9th Edition – Ponte Alta do Norte  
2009 – 10th Edition – Ponte Alta  
2010 – 11th Edition – 27 Municipalities of Alto Vale do Itajaí  
2010 – 12th Edition – Rio do Oeste and Otacílio Costa  
2010 – 13th Edition – Correia Pinto  
2010 – 14th Edition – Rio Rufino, Urupema and Otacílio Costa  
2011 – 15th Edition – Petrolândia and Atalanta  
2011 – 16th Edition - Palmeira  
2011 – 17th Edition – Bocaina do Sul  
2011 – 18th Edition – Lages (Municipal Stage)  
2012 – 19th Edition – Lages (State Stage)  
2012 – 20th Edition – Correia Pinto  
2013 – 21st Edition – Otacílio Costa and Palmeira  
2013 – 22nd Edition – Bocaina do Sul  
2014 – 23rd Edition – Correia Pinto and Ponte Alta  
2014 – 24th Edition – Ponte Alta do Norte  
2015 – 25th Edition – Lages  
2016 – 26th Edition – Lages

2016 – 27th Edition – Lages and São Cristóvão do Sul  
2017 – 28th Edition - Santa Cecília, Bocaina do Sul and Otacílio Costa  
2018 - 29th Edition – Lages and Correia Pinto  
2018 - 30th Edition – Lages, Bom Retiro, Bocaina do Sul, São José do Cerrito, Urubici, Palmeira, Paineira, Correia Pinto  
2019 - 31st Edition – Bocaina do Sul, Lages, Monte Carlo, Otacílio Costa, Paineira, Rio Rufino and Urupema  
2019 - 32nd Edition – Correia Pinto, Lages, Monte Carlo, Otacílio Costa, Urupema, Rio Rufino, Palmeira  
2020 - 33rd Edition (Online) – Correia Pinto and Lages  
2021 – 34th Edition (Online) – Lages, Monte Carlo, Otacílio Costa and Petrolândia





Teachers participating in the Klabin Caiubi Program in 2019.



## Araucaria Trail

Klabin's Araucária Trail is located in the municipality of Correia Pinto, near the company. It is 1,260m long and is interspersed with the native forest of Klabin's forest areas. It aims to receive teachers and students who participate in the Caiubi Program, as well as visitors in general. People who had the opportunity to visit, from different locations, received environmental information about the company and its socio-environmental actions.



Araucaria Trail - Correia Pinto, SC  
Photo: Anna Carolina Negri

The Environmental Protection Program is a program of the Military Police of Santa Catarina that aims to train pre-teens to act as multipliers in environmental education. Klabin has supported the program with the Environmental Police since 2005. Four hundred and eighty-one teens aged 11 to 14 years have already been involved in the Environmental Protectors Program, sponsored by Klabin, in several municipalities in the region where the company operates. In October 2021, 60 new protectors came out of the two 2020 graduating classes in the municipality of Lages. In June 2021, Klabin started the classes of a new group of Environmental Protectors, through a new agreement with the PMSC, Klabin is innovating with the Pilot Project "Young Apprentice Environmental Protector", a project that selected young students living in social vulnerability or in orphanages and shelters, and that after the training, they will have the opportunity to join as Young Apprentices in partner companies. This class is expected to graduate in 2022.





Graduation of the 14th and 15th Lages Environmental Protectors class (2020/2021)

## Grow Program

The program contributes to personal and professional development; maintaining a direct communication channel and promoting the improvement of the quality of life of the company's direct collaborators and contractors. Bimonthly meetings are held with each team, in the work environment itself (field) or in training rooms.



Forest Growth Program in SC

Forest Development has a relevant social role, ensuring an alternative source of income for small farmers, with stable labor in the field and better use of mostly unproductive areas for agriculture.

## Forest Certification Program for Wood Suppliers

Klabin's partner Forest Certification program is an initiative of the company that has been supporting the region in producing sustainable forests for many years.

Suppliers who agree go through an intense process, during a year, of documentary and field preparation, to carry out an external audit with a certification entity. The preparation process is funded by Klabin for 12 months. This process allows small suppliers to add value to the product with FSC® certification, facilitate business, improve the competitiveness of the value chain as a whole.



1st Wood supplier certification group in SC

## Legal Forests Program

Since 2005, this program has been a partnership between Klabin and the Association for the Preservation of Environment and Life (Apremavi). Initially, Legal Forests is geared towards the producers participating in Klabin's Forest Development program, a sustainable economic

activity that generates extra income for the producers and their families. The Forest Development and the Legal Forests Program combine the generation of income and the diversification of productive activities with the recovery of Permanent Preservation Areas (PPA), linked to springs, streams and rivers. The program also develops conservation and environmental education actions.

## Social Forests Program

In 2020, the Social Forests Program – Planning Sustainable Properties was extended to Santa Catarina, to contribute to strengthening small-scale farming. The initiative assists small and medium-sized rural producers in the production stages, from environmental adequacy to support for the commercialization of food in local markets, through training actions, diversification of property and encouragement of associations and cooperatives.

## Forest Certification Program for Beekeepers

At Klabin, the main objective of beekeeping is to encourage the efficient and sustainable use of forest goods and services, strengthening regional development, encouraging the protection of forests and is an alternative for generating work and income for small and medium-sized producers.

The group of beekeepers who use Klabin's areas in SC were encouraged by the company to form an Association. Since 2019, it has been formalized as the Association of Beekeepers of the Serrano Catarinense Plateau (AAPSC), with assemblies, minutes, board of directors, etc., and began to collaborate with each other in a more organized manner.

In August 2021, Klabin received Imaflora certification to attest to the feasibility of producing certified honey in native forests within the scope of Klabin's certification, as well as AAPSC members received Imaflora chain of custody certification.

The honey verified by Imaflora combines several benefits to the environment, the sustainable economy and the families of forest workers and their communities. Responsible beekeeping helps to conserve natural forests, endangered species and ecological balance, as well as contributing to the UN's SDGs 1, 2, 8, 10, 12, 15 and 17 according to environmental, social and governance (ESG) practices.



Beekeeping. Photo: Anna Carolina Negri





## **Lectures and Relationship with the Community**

During the year, there are several visits from groups of students and teachers who request lectures during events such as seminars, academic weeks, commemorative days (Environment Day, Water Day, Tree Day) or even visits to the company to learn about Klabin's actions in the environmental area, to visit the Araucaria Trail.

## **Community Mapping**

Klabin practices the good neighbor policy in the region where it operates. The owners of areas of direct influence of the farms in operation receive visits from the company's managers and are informed about the ongoing activities and receive guidance on safety and the company's communication channels. The impacts of operations with the community are mapped and minimized with actions developed by the company to do so (signs, speed bumps, road spraying program). From time to time, rural unions are also contacted, among other

actions, thus maintaining a permanent channel of dialogue with society.

## **Community dialogue channel**

To supplement and comply with the forest management guideline on the social scope of forest activities, the company maintains a channel for dialogue with the external community, mainly through the internet: **[www.klabin.com.br](http://www.klabin.com.br)** and at the telephone 0800 721 0228.



Community mapping

Klabin has several communication channels with stakeholders. These channels used are:

**WEBSITE / INTRANET • 0800 721 0228 /KLABIN.COM.BR /CONTACT US**

**LECTURES / VISITS TO THE COMPANY • PRESS / ANNOUNCEMENTS / CAMPAIGNS**

**VISIT TO UNIONS /CLIMATE SURVEY • PARTICIPATION IN FORUMS AND SECTORAL COMMITTEES**

**E-MAIL / TELEPHONE /SUGGESTION BOX • NOTIFICATION TO NEIGHBORS**

**CAIUBI PROGRAM/ARAUCARIA TRAIL • GROW PROGRAM**

**LEGAL FORESTS AND FOREST PROMOTION PROGRAM • SOCIAL FORESTS PROGRAM**

**ENVIRONMENTAL PROTECTION PROGRAM • WOOD SUPPLIERS CERTIFICATION PROGRAM**

**RESEARCH PROJECTS • MEETINGS WITH COMMUNITIES**



*Trachycephalus dibernardoi* (Golden-eye tree frogs).  
Photo: Sumatra Inteligência Ambiental.





# **KLABIN AND THE** *ENVIRONMENT*

The concern to preserve the environment has guided the company's actions since its foundation.

## Protected Areas

In Santa Catarina, of the total areas of the company, 50.26% are conservation areas. Planted forests totaling 44.62% have brought important contributions to the preservation of the environment, biodiversity protection aspects and the maintenance of water sources. Forest management follows the mosaic concept, with pine and eucalyptus plantations interspersed with areas of native forests, preserving biodiversity.

**In the 39 municipalities that Klabin has forest areas, there are over 5 thousand kilometers of rivers and over 9 thousand springs protected by the company, which contribute to the region's water supply.**

## RPPNE – Serra da Farofa Complex

The State Natural Heritage Private Reserve - Serra da Farofa Complex RPPNE has 4,987.16 hectares of areas destined exclusively to conserving natural resources in the region where Klabin operates in SC. These areas are home to important springs such as those that make up the Canoas and Caveiras Rivers, springs that supply the Serrano Plateau region. An important acquired area was the Nascentes Farm, popularly known as the Farofa Farm, in reference to a local mountain range with the same name. Located in the municipality of Painel, bordering Urupema (SC), it has an area of 1,518.57 hectares of natural vegetation in a high state of conservation. The other areas are located in the municipalities of Rio Rufino, Urubici and Bocaina do Sul.

The areas that make up the Serra da Farofa Complex are considered HCVA, as they are preserving attributes such as the protection of springs and water sources and the conservation of endangered animal species. In them, it is possible to find important plant formations, such as araucaria forests, high altitude fields and cloud forests. The rich local fauna also houses species included in official listings as threatened with extinction.

## High Conservation Value Areas (HCVA)

The conservation attributes defined for HCVA in Klabin areas are being analyzed, according to the Criteria of Principle 9 of the FSC® and ProForest Guide for High Conservation Value Areas, which are:

### HCVA 1 – Species

Areas that contain significant concentrations of biodiversity values at the global, regional or national level.

### HCVA2 – Landscape

Extensive areas, at the landscape level, of global, regional or national significance, where viable populations of most or all natural species occur in natural patterns of distribution and abundance.

### HCVA3 – Ecosystems

Areas within or containing rare, threatened or endangered ecosystems.

### HCVA4 – Environmental Services

Areas that provide basic environmental services in critical situations (water supply, erosion control and fire barrier).

### HCVA 5 – Basic needs of local people

Essential areas to meet the basic needs of local communities (subsistence and health)

### HCVA 6 – Cultural Importance

Critical areas for the traditional cultural identity of local communities (cultural, economic, traditional and/or religious importance identified along with this community).



*Mazama gouazoubira* (South American brown brocket).  
Photo: Sumatra Inteligência Ambiental.



The result of the assessment presented in the following table is a compilation of different analyses made by qualified specialists, and the HCVA presented were validated through public consultations with representatives from the scientific community and the population surrounding the areas and internal technical assessment of the company. Thus, the areas defined as HCVA have unique forest management activities seeking to maintain and maximize the attributes pointed out.

**Table 6 – High Conservation Value Areas and respective attributes**

Farm	Types of vegetation	HCVA Class	Attributes
HYDROGRAPHIC REGION 4 - Lages Plateau			
<i>Serra da Farofa Complex (Nascentes, Boa Vista, Cedro I and II, Farrapos, Morro Agudo and Santo Antônio farms)</i>	FOM	1	Presence of several endemic species threatened or in danger of extinction of fauna and flora.
		2	Santo Antônio: scenic beauty, presence of canyons; Farrapos: Near São Joaquim National Park.
		3	Representative areas of FOM in the middle or advanced stage of succession, high altitude fields and cloud forests; Santo Antônio: xaxim wetlands.
		4	Springs: it houses 4 of the 5 springs of the Caveiras river, the main river that supplies the municipality of Lages; Santo Antônio: springs of the Canoas river.
		5	Families collect pinion for their own consumption and to sell.
		6	Springs: stone walls on property boundaries.
<i>Paredão I</i>	FOM	1	Specimens of endangered or endangered fauna and flora.
		2	The farm owns a vast conservation area, representative in the regional landscape.
		3	Remaining representative of FOM in high conservation status.
<i>Ponte Alta do Norte</i>	FOM	1	Specimens of fauna and flora (Araucaria).
		3	Remaining FOM in good condition.
		4	Marombas River.

Farm	Types of vegetation	HCVA Class	Attributes
REGIÃO HIDROGRÁFICA 4 - Planalto de Lages			
Santa Rita-I	CAM	1	Presence of very well preserved fragments.
		3	Remnants in good condition.
		4	Protects springs and rivers.
		6	Landscape Attributes: waterfalls in canyons, rocky cliffs with conserved vegetation.
		5	Famílias coletam pinhão para consumo próprio e comercialização.
		6	Atributos Paisagísticos: cachoeiras em canyons, paredões rochosos com vegetação conservada.
Capão da Lagoa	CAM	1	Presence of endemic species from wetland areas.
		2	Relevant in the landscape for protecting field areas, so commonly anthropized in the Santa Catarina plateau.
		3	Predominance of fields, with well preserved araucaria isolated woods and wetlands.
		6	Stone walls on property boundaries.
HYDROGRAPHIC REGION 5 - Canoinhas Plateau			
Palmital do Areião	FOM	1	Presence of endemic species from wetland areas.
		2	Relevant in the landscape for protecting FOM areas.
		3	Remaining FOM in good condition.
HYDROGRAPHIC REGION 7 - Vale do Itajaí			
Corote	FOD	1	Presence of endemic species.
		2	Relevant in the landscape for protecting FOD areas.
		4	Protects springs and rivers important to the region.

Key: FOM: Mixed Ombrophilous Forest; CAM: Fields; FOD: Dense Ombrophilous Forest Source: Klabin S. A., 2021.



Monitoring that contributes to maintaining and improving High Conservation Value Attributes in HCVA areas in Santa Catarina occurs periodically through research projects that are carried out in partnership with researchers, education and research institutions and a specialized consulting firm. In order to reduce threats, HCVA have several protective measures.

The fauna monitoring activities registered at the Fárrapos Farm (HCVA), located in the municipality of Urubici belonging to Block IV of the State Natural Heritage Private Reserve (RPPNE) Serra da Farofa Complex, a rare and endangered amphibian species: The glass frog, which is the common name of the species *Vitreorana uranoscopa*.



*Vitreorana uranoscopa* (Glass frog). Photo: Sumatra Inteligência Ambiental.

**Table 7 - HCVA Protection and Monitoring Measures**

MONITORING										
HCVA	Heritage surveillance	Fencing	Flora survey	Mammalian fauna survey	Avifauna survey	PPA recovery	PPA monitoring	Control of invasive species	Burn control	Educational campaigns
<i>Serra da Farofa Complex</i>	X	X	X	X	X			X	X	X
<i>Paredão 1</i>	X		X	X	X	X		X	X	X
<i>Ponte Alta do Norte</i>	X		X	X	X	X		X	X	X
<i>Santa Rita-I</i>	X		X	X	X	X		X	X	X
<i>Capão da Lagoa</i>	X		X	X	X	X	X	X	X	X
<i>Palmital do Areão</i>	X		X	X	X	X	X	X	X	X
<i>Corote</i>	X		X	X	X	X	X	X	X	X

Source: Klabin S, A., 2021.

*Starry sky at CINAT – Nature Interpretation Center – Serra da Farofa Complex, SC.  
Photo: Sumatra Inteligência Ambiental.*





## **CINAT – Nature Interpretation Center**

The Nature Interpretation Center – CINAT is a sustainable work, inaugurated at the Serra da Farofa Complex RPPNE in 2019. Environmental research has been carried out since 2008 in the Conservation Unit, such as theses, dissertations and published scientific articles. With the structure of CINAT, researchers have access to dormitories for up to 40 researchers/students, a cafeteria, bathrooms and auditorium.

## **Ecosystem Services at RPPN – Serra da Farofa Complex**

In November 2021, Klabin obtained FSC® Certifications in Ecosystem Services for Biodiversity Conservation (ES1), Carbon Sequestration and Storage (ES2) and River Basin Services (ES3), at the Nascentes Farm, located at the Serra da Farofa Complex RPPN. Klabin became the first company in the country to win the three seals simultaneously.

The certification of the three Ecosystem Services

(Biodiversity, Carbon and Water) is aligned with the KODS - Klabin's Sustainable Development Goals and reaffirms the various benefits provided by the environment to the human population, directly influencing survival, quality of life, health and well-being:

- Diagnose, monitor and maintain the region's biodiversity;
- Maintain the forest and protect the areas against fire, theft, hunting and illegal fishing;
- Monitor the carbon stock of native forests;
- Protect and maintain the quality and availability of water resources;
- Environmental Education;
- Deepen knowledge about biodiversity, water resources and carbon sequestration and storage by continuously encouraging scientific studies in the areas.

The recognition of existing ecosystem services at Klabin reinforces the importance of good forest management for environmental conservation, reflecting the efforts made in the company on this journey towards sustainable development.

## **Ecosystem Service Representation Carbon Sequestration and Storage**

*Forest of Faz. das Nascentes - Serra da Farofa Complex RPPN  
Photo: Sumatra Inteligência Ambiental*



## Representation of Ecosystem Service in River Basins



*Source of the Caveiras River, Serra da Farofa Complex RRPN. Photo: Sumatra Inteligência Ambiental*

## Ecosystem Service Representation for Biodiversity Conservation



*Puma concolor (Cougar), top of the food chain, in the Serra da Farofa Complex RRPN. Photo: Sumatra Inteligência Ambiental*



# **LIMITING AND POTENTIAL FACTORS**

**I. Cultural Practices:** Forest productivity depends on the cultural practices adopted, such as soil preparation, spacing and forest competition control.

**II. Abiotic and biotic factors:** Forest plantations can suffer from environmental conditions such as: fires, frosts, winds, hail, water deficit or pest infestations and diseases, among others.

**III. Climate Factors and Technological Development:** Due to favorable weather conditions and advanced technological development, the wood produced in Brazil in planted forests has relatively short cycles and high productivity, which allow the country to remain active in the international forest products market.

**IV. Technological Development and Commercial Growth:** Combined with advanced technological development, the wood produced in Brazil in planted forests has favorable climatic and soil conditions, relatively short cycles and high productivity, which allow the country to remain active in the international forest products market.

In general, assessing the regional scenario, it can be said that the justification for species selection and the economic viability of management are due to the following factors: favorable climatic and soil conditions and market perspective for commercial planted forests.

# ENVIRONMENTAL SAFEGUARDS

Klabin has some environmental safeguards, aiming to minimize the negative impacts of its forest operations. Among them, the following stand out:

- Heritage Security;
- Monitoring fauna and flora in the company's areas;
- Monitoring and controlling pests and diseases;
- Monitoring to minimize environmental impacts on operations;
- Control of pine in Permanent Preservation Areas;
- Socio-environmental actions in the regions where it has forest operations;
- Development of environmental research in partnerships with universities.














A stylized green leaf graphic with multiple veins, positioned in the upper left corner of the page.

# **FOREST MANAGEMENT** *INDICATORS*



# 1. TECHNICAL AND ECONOMIC DATA

TECHNICAL AND ECONOMIC MONITORING							
Monitoring	Indicator	Results					
		2019	2020	2021	2021 Target	Customer Service	2022 Target
Products harvested (tons)	Pine wood Production for cellulose	1.692.667	1.618.590	1.651.735	1.578.000		1.498.000
	Pine wood Production for trade	387.890	356.690	422.983	390.000		420.000
	Eucalyptus wood Production for cellulose	248.450	281.100	265.694	282.000		282.000
	Biomass production for energy	93.392	175.280	160.130	186.000		162.000
Forest Growth Rates - AAI - Average Annual Increase (m3/ha/year)	Eucalyptus (cutting age 7 years)	As a result of the Forest Management and the Genetic Improvement Program carried out, the AAI of forests has an average growth expectation of 1.5% per year for Pine and Eucalyptus					
	Pine (cutting age 16 years)						
Forest Management Efficiency (in tons)	Pine wood delivery to the Factory	1.612.554	1.651.486	1.622.272	1.576.990		1.405.775
	Eucalyptus wood delivery to the factory	253.801	293.128	281.771	289.660		278.215
	Sale of Pine logs to Third Parties	387.890	356.690	422.983	390.000		420.000
	Biomass delivery to the factory	93.475	175.280	110.039	186.000		162.000

Chemical Monitoring	Herbicide consumption in the silviculture area - L/ha	1,58	1,05	2,06	Maximum 3.5 L/ha		Maximum 3.5 L/ha
	Herbicide consumption in the silviculture area - Kg/ha	0,41	0,30	0,42	Maximum 0.50 Kg/ha		Maximum 0.50 Kg/ha
	Formicide consumption in the silviculture area - kg/ha	2,60	2,30	2,25	Maximum 2.5 Kg/ha		Maximum 2.5 Kg/ha

Data from January to December of each year.

Key:



TARGET REACHED



TARGET NOT REACHED

## 2. ENVIRONMENTAL DATA

MONITORAMENTO AMBIENTAL							
Monitoring	Indicator	Results					
		2019	2020	2021	2021 Target	Customer Service	2022 Target
Biodiversity	No. of fauna species	427	525	528	-	😊	-
	No. of flora species	959	872#	880	-	😊	-
	No. of occurrences of species with recognized conservation status	530**	623**	629**	-	😊	-
	Expansion of the number of species identified in fauna monitoring in HCVA	409***	425***	427***	>1	😊	>1
Environmental Education	No. of Teachers involved	1.453	1.535	1.656	1.600	😊	1.700
	No. of Students involved	187.938*	205.617*	223.640*	207.000	😊	230.000
	Annual Caiubi Program editions	2	1	1	1	😊	1
	Annual Environmental Protection Program editions	1	2	1	1	😊	1
Forest Protection	No. Wildfires	29	48	34	< 30	😞	< 40



\* Cumulative 2005-2020 data from the Caiubi Program (number of students involved)

\*\*The sum considers the species of fauna and flora included in the lists of IUCN (2021), MMA (2014), ICMBio (2018), CONSEMA - SC (no. 2/2011 and no. 51/2014) and for RS, FZB (2014) with some category of threat identified in the Biodiversity Monitoring Program since 2003.

\*\*\* Accumulated data from all fauna monitoring in HCVA areas with annual inclusion of species seen for the first time in the areas

# Updates/corrections of scientific nomenclature reduced the general numbers

Key:






TARGET REACHED



TARGET NOT REACHED

## 3.SOCIAL DATA

SOCIAL MONITORING							
Monitoring	Indicator	Results					
		2019	2020	2021	2021 Target	Customer Service	2022 Target
Jobs Generated	No. of Collaborators (In-house)	488	500	593	-		-
	No. of Collaborators (Third Parties)	467	455	475	-		-
Collaborator Health and Safety	No. of Occupational Accidents (Third Parties + In-house)	13	5	8	0		0

Collaborator Training	Training Hours (In-house)	15.188	9.184	18.511	13.000	😊	13.000
	% Participation in the Forest Growth Program	68%	78%	79,5%	75%	😊	75%
Interaction with the Community	No. of Visitors to the Araucária Trail	296	0**	0**	0**	😊	100 visitors
	No. of Participants in lectures on KLABIN	796	1078	1337	500	😊	600
	No. of certified hectares of wood suppliers	21.243,06*	23.864,13*	29.207,49*	2.000	😊	4.000
	No. of ongoing surveys in the year with biodiversity conservation	-	13	16	3 surveys/year	😊	6 surveys/year

\*Data accumulated since 2017 when the program started

\*\* Visits canceled due to the pandemic

Key:



TARGET REACHED



TARGET NOT REACHED

• 2022 •

# PUBLIC SUMMARY

Forestry Management Plan | Santa Catarina



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