



# Sustainability Report

Highlights of the Company's  
performance in 2021.

# Index

**5**

Message from the Board

**9**

Klabin

**19**

Report

**22**

KSDGs

**24**

Corporate governance

**36**

Renewable future

**49**

Sustainable economy

**67**

Prosperity for people

**79**

Technology and innovation

**88**

Glossary

# ESG 2021 Highlights



**23 plants**, 22 in Brazil and one in Argentina.

**25,000+** direct and indirect employees.

**1.6 million** tons of market pulp production capacity per year.

**2.6 million** tons of annual paper production capacity.

**The biggest** paper recycler in Brazil.



**284,000** hectares of cultivated pine and eucalyptus forests, the equivalent of 284,000 soccer fields.

**265,000** hectares of conserved native forests, which represents 42% of the total.

**1st Brazilian company** to obtain FSC® – Forest Stewardship Council® (FSC-C0172336 e FSC-C006109) certification for kraft lignin from pine and black liquor, byproducts of the process, ensuring the sustainability of the entire chain.

**The only Latin American** company invited to join the Business Leaders group at the 26th UN Climate Change Conference in Glasgow, Scotland.



The best economic performance in Klabin's history

**BRL 16.481 billion**

Net revenues (38% higher than 2020).

**BRL 6.865 billion**

Adjusted Ebitda, excluded non-recurring effects (46% higher than 2020).

**3.8 million tons**

was the sales volume, up 6% compared to 2020.

Klabin  
ForYou

**More than  
100%**

in sales of packaging for e-commerce in 2020 and 2021.

**81%**

growth in the number of accesses to the platform, reaching more than 620,000 people.

Sustainable  
bonds

**US\$ 500  
million**

issued in the Sustainability Linked Bond (SLB), with targets linked to water consumption, reuse and recycling of waste, and biodiversity.

## Reconhecimentos:

Level 2 governance of the São Paulo Stock Exchange (B3)

2nd year in the Dow Jones Sustainability Index (DJSI)

9th year in the B3's Corporate Sustainability Index (ISE)

Triple A in CDP (Disclosure Insight Action)

WorldStar Global Packaging Awards

Bonds & Loans Latin America & Caribbean Awards 2021

Supplier Engagement Leaderboard (CDP)

Sustainable Procurement Leadership Awards (EcoVadis)



Compromissos:



## Climate changes

**Unprecedented FSC®** (FSC-C023492) **certifications** for three ecosystem services – biodiversity conservation, carbon sequestration and storage, and watershed services.

The adoption of **low carbon** technologies allowed the Company to achieve a 67% reduction in CO<sub>2</sub>e emissions per ton of product between 2003 and 2021.

## Emissions management

**4.9 million tons of CO<sub>2</sub>e** was the Klabin's positive carbon balance in 2021.

**155 kg CO<sub>2</sub>e** per ton produced was the intensity of emissions in 2021, a reduction of 4% compared to 2020.

**44% reduction** in the intensity of scope 2 emissions due to issuance of renewable energy certificates (I-RECs - International Renewable Energy Certificates) by the Puma Unit.

## Energy use

**89.5%** of the Company's energy matrix comes from renewable fuels.

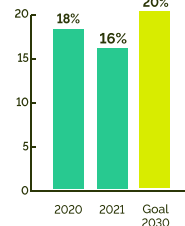
**820,490 MWh** were delivered to the Brazilian Electric System by the Puma Unit in 2021.

**90 MWh/h** is the estimated power that will be made available with the third turbogenerator.

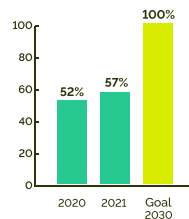
## Water use

**Hydrosolidarity management:** the pioneering initiative seeks to verify the best practices in forest management to extinguish or minimize impacts on microbasins.

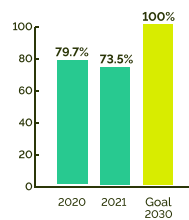
Percentage of reduction in specific consumption of industrial water



Percentage of forest harvest operations under own management with hydrosolidarity management



Percentage of locations where they work with initiatives to increase water security



## Biodiversity

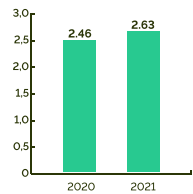
**42%** of its forest area allocated to the conservation and maintenance of biodiversity.

**BRL 1.5 million** was invested in initiatives and projects related to the restoration of native forests and biodiversity conservation in 2021.

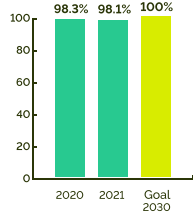
## Waste management

The Company maintained the same level of waste reuse, even with the increase in waste generation due to the start of production at the Puma II Unit.

Solid waste generated (in millions of tons)



Solid waste repurposed



## Employees and community

**LTI for all:** the Long-Term Incentive (LTI), intended for management positions, was extended to all employees.

**80.3% and 81.7%** were the acceptance rates of Klabin in local communities, respectively in Paraná and Santa Catarina. The KODS goal is to achieve at least 80% positive perception.

**More than BRL 30 million** earmarked to support the fight against Covid-19 to more than 30 municipalities in ten states where the Company is present, between March 2020 and December 2021.

## Suppliers

**About 40%** of all the wood used in the production process is acquired from third-party forests, partners in initiatives such as Plant with Klabin program or independent producers.

**83** partnerships have been signed with producers in Paraná, since the Plant with Klabin program began, in 2020.

**Execution of the 3rd cycle** of the Supplier Social and Corporate Responsibility Program, with the support of EcoVadis.

## Practices

**Tag-along rights:** Klabin's bylaws guarantee the holders of preferred shares the right to receive 100% of the share amount paid to the controlling shareholder in the event of a sale of the Company.

**Equal economic rights:** holders of common shares, preferred shares and Units (respecting the ratio of 5 to 1) receive the same amount of dividends.

**New Financial Debt and Dividend Policies** provide more transparency to Klabin's financial and risk management.

## Integrity

**100%** of own employees received anti-corruption practices communication.

**32.43%** were trained on the subject in 2021.

**608** cases involving violations of Klabin's Code of Conduct registered on the Complaints Channel were investigated, 31% confirmed. In all cases, the Company proceeded with the sanctions indicated in the document.

## Structure

**The ESG Dashboard,** launched in 2021, brings together Klabin's commitments, goals and main performance indicators, promoted a gain in transparency and governance of the topic.

**The Audit and Related Parties Committee,** created in 2021, advises the Board of Directors in the evaluation of the control mechanisms for exposure to risks.

**The Sustainability Committee** was also created, improving the governance of the topic.

**Klabin's Board of Directors** meets at least every two months to discuss business strategies and evaluate results.

Klabin became a **TCFD Supporter**, formalizing its public support for the recommendations of the Task Force on Climate-Related Financial Disclosure. Supporting the TCFD and improving the adoption of its recommendations represents an increase in information transparency.



# Message from the Board

After some uncertainties early in the year, still in the midst of the Covid-19 pandemic, when expectations related to the mass vaccination against and the global economic recovery were on a horizon of uncertainty, we remained on an upward trajectory. The fact is that we reached the end of 2021 certain that we are an even more solid company, a global benchmark in sustainability, which continues in full and continuous growth.

We recorded strong demand for our products in the domestic and foreign markets and the best operational and financial results in our history. Adjusted EBITDA, excluding non-recurring effects, which measures operating cash generation, totaled BRL 6,865 billion in 2021, 46% higher than that recorded in the same period in 2020, which represents the Company's 12th consecutive year of growth. Results like these are the result of an integrated, diversified and flexible business model, combined with operational efficiency.

The global logistics challenges, the energy crisis in China, rising inflation in several countries, and the concern with the national water crisis are examples of adversities faced by Klabin last year and resilience, once again, was a preponderant factor for the realization of our projects. We had the successful start-up of Paper Machine 27, in August, in the first stage of the Puma II Project. We have also moved forward in offering innovative solutions, with diversified, recyclable, and biodegradable products from renewable sources and in tune with the consumption demands of our customers and of society, for which we have a genuine vocation. The start of Eukaliner® production on MP27, the world's first kraftliner made exclusively from eucalyptus fiber, illustrates Klabin's ability to reinvent itself, reinforcing its portfolio of sustainable products. The novelty is the result of studies conducted by our teams at the Technology Center, which is also responsible for the development of barriers that add even more functionality to our paper and paper packaging.

2021 was also a year of future-oriented decisions. The production of paper board by MP28, the second paper machine of the Puma II Project, with start-up scheduled for the second quarter of 2023, will serve a growing market worldwide and for which there is no forecast of supply expansion in the short term. In line with our expansion projects, we started operating a container rail terminal in Paraná, which represented an important gain in the logistics area. We have doubled our container flow capacity from the Puma and Monte Alegre units to the Port of Paranaguá.

A clear result of a history of commitment to sustainable development and its pioneering role in practices and initiatives that benefit the planet, Klabin was invited to participate in COP26 as representative of the leadership of private companies in Latin America. In partnership with the UN Global Compact Brazil Network, to which the Company has been a signatory since 2003, we launched the ImPacto NetZero campaign, born out of the urgency of collective mobilization to climate change mitigation.

We registered another important milestone in the period, which was Klabin's inclusion in CDP's Triple A List with the Water Management, Forestry and Climate Change programs. This Initiative, which analyzes and recognizes the efforts of companies worldwide to manage the environmental impacts of their activities, showed that we are moving in the right direction. This achievement places us among the companies recognized as leaders in the transition process into a new sustainable economy. Klabin has been included in the Dow Jones Sustainability Index for the second year in a row, in the World – the most robust and important of all – and Emerging Markets categories. Even with a record number of companies competing in this edition, we made up the group of 10% of companies with the best scores in the Global category. We also stood out for the best score in the industry (Containers & Packaging category), and we progressed in the environmental, social, and corporate governance indicators.

It was a celebrated outcome in a year that began with the fundraising, in January, of USD 500 million in Sustainability Linked Bonds (SLB) issued in the international market, with a ten-year term and the lowest interest rate – 3.2% per year – ever achieved by a Brazilian risk rating company identical to ours. The SLB is tied to the achievement of sustainability goals which, in Klabin's case, are planned to be achieved by 2025 and are related to the reduction of water consumption, the reuse of waste, and the reintroduction of endangered native animal species. For this operation, Klabin won the Bonds & Loans Latin America & Caribbean award in the "ESG Deal of the Year" category, which highlights innovative and sustainable operations.

Our governance model was strengthened in the period, with the performance of the three advisory committees to the Board of Directors created in December 2020: the Sustainability Committee and the People Committee, the Audit and Related Parties Committee. We launched the **ESG Panel** in the first half of 2021, a platform that brings together our indicators in a single place, allowing us to monitor the evolution of our performance and compliance with the Klabin 2030 agenda (the KSDGs), inspired by the UN Sustainable Development Goals. In March 2022, we added the Sustainable Finance page to the platform, with the reporting of financial instruments linked to sustainability – green Bond, sustainability Linked Bond and revolving credit facility. More than just accountability, we present an overview of our ESG integration into the Company's long-term strategy. In 2021, Klabin's investor base exceeded 200,000 individuals. Motivated by this growth, we have further increased our efforts to provide increasingly clear content on financial results, in a practical and accessible way. Weekly, we supply information to the Klabin Invest platform, through videos and podcasts, and we provide a completely revamped Investor Relations website (<https://ri.klabin.com.br/en/>).

Reinforcing our commitment to citizenship in the communities with a focus on local development, in 2021, we highlighted the support to 15 municipalities in Paraná and Santa Catarina in the construction of the Multi-Year Plan and the launch of the Social Progress Index (SPI) for 12 municipalities in Paraná. The SPI has been used worldwide to measure and compare social progress, helping to direct investments, both in the public and private sectors. By the end of 2022, 12 municipalities in Santa Catarina will also be included in the index.

Among the concerns of a company focused on a sustainable future is the well-being of the people who build it day after day. An internal consultation showed that our employees really perceive the Company's evolution in initiatives aimed at diversity and, especially, gender equity. The same survey revealed that work safety is perceived as a priority value at Klabin. This is a significant recognition, as safety is one of the pillars of the growth we want. For this reason and in order to continue with our cultural evolution plan, we have reinforced our security measures and this year implemented a Corporate Life Protection Policy.

In this sense, I could not fail to mention that we were dismayed, in March 2022, in the period between the closing of 2021 and the production of this report, with the bus accident that victimized employees of a third-party company on the way to the General Maintenance Shutdown at the Monte Alegre plant, in Paraná. In it, 11 people lost their lives and 20 were injured. We continue to work tirelessly so that processes and activities are increasingly safer at Klabin.

I would like to thank the Board of Directors and our shareholders for believing in our capacity to overcome; and also the customers, who challenge us to innovate and work even better. I thank our employees, who are responsible for our results, the communities, that welcome us and with whom we develop relationships of partnership and encouragement, and, finally, all those who make up our business environment. The trust you place in us is what allows us to invest, grow, and create value for society.

I could not close this Message without paying tribute to Dr. Armando Klabin, who died on September 22, 2021, then Chairman of the Company's Board of Directors. Dr. Armando dedicated himself untiringly to the quest to transform Klabin into a world renowned company. His dedication will remain in our daily lives, and we will honor his legacy through our work in building a renewable future that can also inspire future generations.

**Cristiano Teixeira**

Klabin's Chief Executive Officer





# Klabin

## Klabin's choices for a renewable tomorrow

Building a fully renewable future is a project that depends on everyone's engagement. Large companies, however, are responsible for leading this process. For no other reason, Klabin promotes the integration of the entire production chain to transform raw materials into multiple-use products without causing damage to the environment. This translates into a set of solutions that are in line not only with the consumption demands of customers and society but also with the sustainability of the planet.

### Profile

The Company's four business units (Forestry, Pulp, Paper and Packaging) range from the production and marketing of wood and pulp to the manufacture of paper and efficient packaging for a wide variety of market segments. Today, Klabin is the only company in the country to simultaneously supply hardwood pulp (eucalyptus), softwood pulp (pines) and fluff pulp (pine), in order to meet the demands of different branches of industry. Its packaging, in turn, in addition to being safe, is light, biodegradable, recyclable and comes from renewable sources.

A developed, modern world integrated with nature implies respect for all people. Since this is a non-negotiable value, Klabin encourages a healthy and fair work environment, where there is perfect integration among diverse teams, with equal opportunities, incentive for personal development and recognition of results.

## Differentials



### PIONEER IN CERTIFICATION

Klabin is the first Brazilian company to obtain FSC® – Forest Stewardship Council® (FSC-C0172336 e FSC-C006109) certification for kraft lignin from pine and black liquor, byproducts of the pulp and paper manufacturing process, which are used for several purposes, ensuring the sustainability of the entire chain. The Company's pine forests are also certified by the FSC®, which attests to its commitment to environmental conservation.



### 2ND YEAR ON THE DOW JONES LIST

For the second year running, Klabin is part of the Dow Jones Sustainability Index (DJSI), 2021/2022 edition, in two categories: World Index and Emerging Markets Index. This reinforces its place among the most sustainable companies in the world.



### LEADERSHIP IN ENVIRONMENTAL PRACTICES

In 2021, Klabin was the only Latin American company invited to join the Business Leaders group at the 26th UN Climate Change Conference in Glasgow, Scotland. Since Eco-92, held in Rio de Janeiro, the company has been actively participating in environmental conferences and is already recognized worldwide for its good practices in this area.



### CLIMATE CHANGE

Klabin launched, in partnership with the UN Global Compact's Brazil Network, the ImPacto NetZero movement, born from the urgency of collective mobilization to mitigate climate change.



### APPROVED SCIENCE-BASED TARGETS

Klabin was the first pulp and paper company in Latin America to have its targets for reducing greenhouse gas (GHG) emissions approved by the Science Based Targets initiative (SBTi). The initiative offers companies guidance, methods, and tools to support the adoption of science-based GHG reduction targets.



### BUSINESS SUSTAINABILITY INDEX

Klabin is part of the B3's Corporate Sustainability Index (ISE) for the ninth consecutive year. The new portfolio composition, which comprises 34 companies, became effective on January 3, 2022 and will remain valid until the end of the year (December 30, 2022).

For more information, see GRI indicators 102-1, 102-2, 102-5, 102-10, 102-12, in the **ESG Panel**.

## Units and operations



### FORESTRY

All the wood used in the pulp and paper production process comes from cultivated forests. In addition, the Forestry Unit sells wood in logs, which supply the furniture and civil construction markets. Mosaic planting, which combines planted forests with native forests, is the Company's registered trademark. The technique helps protect natural resources, improves the forests' production potential and collaborates in biodiversity conservation. There are 284,000 hectares of cultivated forests and more than 265,000 hectares of conserved native forests in the states of Paraná, Santa Catarina, and São Paulo.



### PULP

Klabin is the only Brazilian company to produce and supply the market with three types of pulp – hardwood (from eucalyptus), softwood (extracted from pine) and fluff (specially produced from pine softwood) – in a single industrial unit. The plant, designed for this purpose, generates multiple solutions to meet the different market demands. Klabin's pulp comes from cultivated forests with socially and ecologically appropriate management, recognized by international certifications, which assess the entire process up to the manufacture of the final product.



### PAPER

Klabin is the largest manufacturer and exporter of packaging paper and paper packaging in Brazil. The paper and card are produced with own softwood and hardwood pulp, meeting global quality and sustainability standards. In 2021, the Company began selling Eukaliner®, the world's first kraftliner paper made from eucalyptus fibers alone. The Company's annual paper production capacity, which currently sits at 2.6 million tons, will reach the mark of 3.1 million tons in 2023 after the Puma II expansion project is complete.



### PACKAGING

Klabin leads the packaging segment in Brazil due to its ability to provide solutions for all types of business, including e-commerce. The company's proposal is to be "much more than just packaging," offering the customer functional, lightweight, economical, and biodegradable products, all from renewable sources. The Packaging Unit is also responsible for the production of recycled paper, processing more than 450,000 tons a year, which makes Klabin the biggest paper recycler in Brazil.

## Key figures

Klabin adds years of history, transformations and achievements.

**23**

plants, 22 in Brazil and one in Argentina.

**25,000+**

direct and indirect employees.

**4.9 million**

tons of positive CO<sub>2</sub> in the carbon emissions balance.

**2.6 million**

tons of annual paper production capacity.

**1.6 million**

tons of market pulp production capacity per year.

**450,000**

tons of recycled paper.

**625,000**

hectares of total forest area.

**284,000**

hectares of cultivated pine and eucalyptus forests, the equivalent of 284,000 soccer fields.

**265,000**

hectares of conserved native forests (42% of the total forest areas under management).

## Recognition and awards

### WorldStar Global Packaging Awards

Klabin won the award in the Sustainability category due to the success of the dispersible bag, a type of packaging that can be mixed into its own contents without the need for disposal. Developed by the Klabin Technology Center and the Packaging area, the novelty was recognized for its sustainability attributes, along with its quality, functionality and sales appeal.

Produced with dispersible paper, the biodegradable packaging is suitable for packaging cement, because it can be integrated into the mixture when preparing the concrete. In addition to reducing waste disposal at the construction site, the dispersible bag is resistant and has excellent performance in bagging and palletizing.

### 2021 Bonds & Loans Latin America & Caribbean Awards

Featured in the ESG Deal of the Year category of the Bonds & Loans Latin America & Caribbean Awards, promoted by the Bonds & Loans Awards, an awarding entity created by the GFC Media Group (GFC) conglomerate. The recognition came for the USD 500 million Sustainability Linked Bond (SLB) issued in January 2021, with a ten-year maturity. Klabin's SLB was the bond with the greatest distinction in Sustainability/ESG compared to other companies in Latin American and the Caribbean, mainly for linking three important environmental goals in a single bond: reduction in water consumption; waste reuse and recycling; and biodiversity conservation.

### Leadership in sustainable procurement

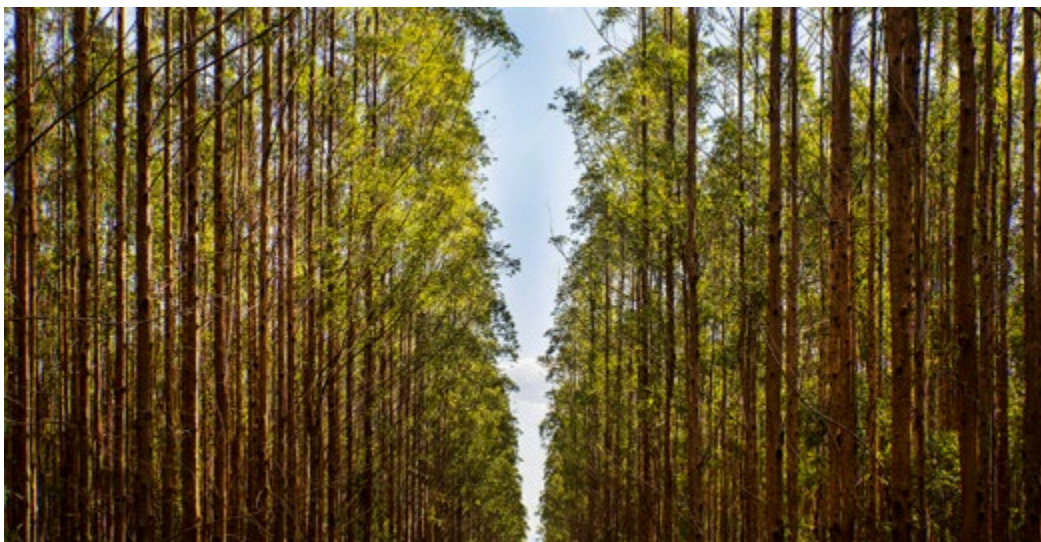
In 2022, Klabin was one of the winners in Ecovadis' Sustainable Procurement Leadership Awards, in the Increased Portfolio Performance category, with the best score for recovery and advancement in the scoring of its supplier portfolio.

### Supplier Engagement Leaderboard

In early 2022, Klabin was also recognized by CDP on the Supplier Engagement Leaderboard. This recognition confirms the Company's efforts to encourage the entire production chain to act together to control climate change. The study assesses performance in supplier engagement using companies' own responses to questions regarding governance, science-based decarbonization targets, Scope 3 emission reductions, and supply chain engagement, aimed at raising the level of climate action. Among the companies that participated in the survey worldwide, only 8% were recognized.

## Forestry base

The Forestry Unit consists of 284,000 hectares of cultivated pine and eucalyptus forests in the states of Paraná, Santa Catarina and São Paulo, which supply Klabin's industrial facilities. The Company is proud to conserve 265,000 hectares of native forests in these regions.



*Klabin conserves 265 thousand hectares of native forests in the states of Paraná, Santa Catarina and São Paulo. Photo: Klabin*

### Unprecedented certifications

Respect for the environment is directly linked to the essence of Klabin's business, which is a forest-based company. All of the Company's forests are verified under the principles and criteria of the FSC® – Forest Stewardship Council®, which takes into consideration practices that respect natural resources, locations and the well-being of communities.

That is why the company values achievements such as that of 2021, when it obtained the certification for the following **ecosystem services**: biodiversity conservation (ES1), carbon sequestration and storage (ES2), and watershed services (ES3). The certification audit, conducted by the Institute for Agricultural and Forest Management and Certification (Imaflora), was conducted at Fazenda das Nascentes, in the Serra da Farofa Complex **RPPN**, in Santa Catarina. With this recognition, Klabin became the first Brazilian company to achieve the three seals simultaneously.

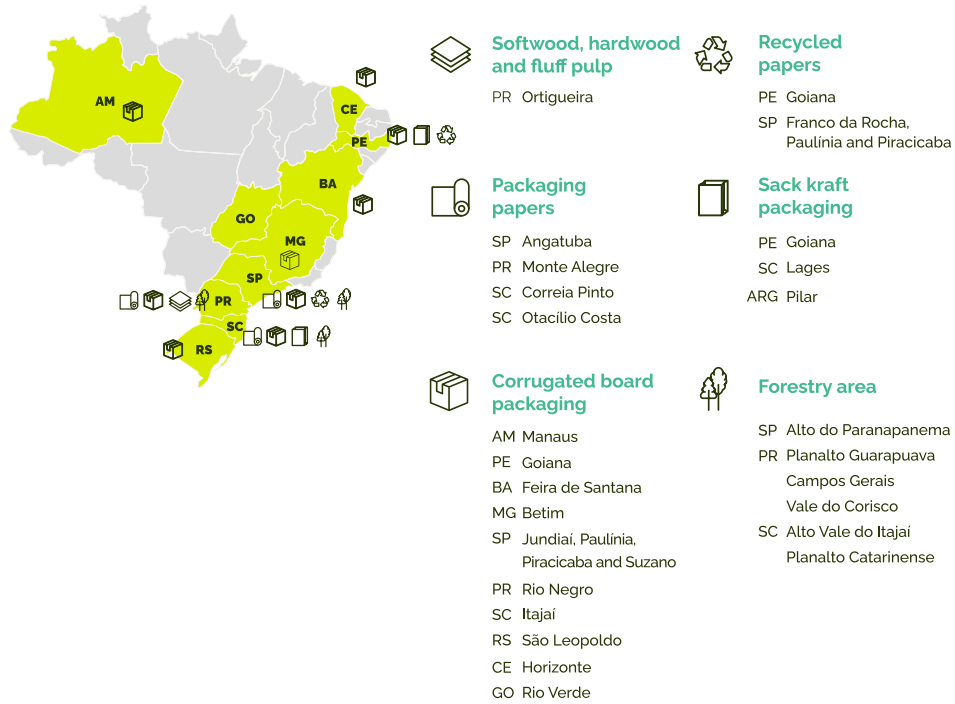
In order to obtain these certifications, the Company committed to diagnosing, monitoring and maintaining the region's biodiversity, as well as to protecting the areas against fires, hunting and illegal fishing, maintaining the quality and availability of water resources, and continually deepening our knowledge of the ecosystem.

Klabin was also a pioneer in the country in obtaining FSC® – Forest Stewardship Council® (FSC-C0172336 e FSC-C006109) certification for the pine kraft lignin and for the black liquor, previously only useless byproducts of the pulp manufacturing process. The company received certification following the adoption of new practices, which led to the total reuse of these substances.

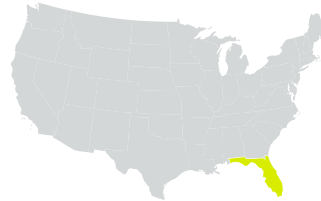
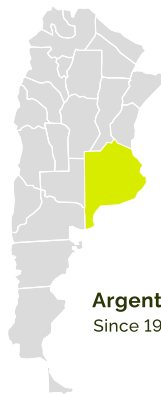
Also in 2021, Klabin received Imaflora certification to attest to the feasibility of producing certified honey in its native forests, within the scope of the Company's certification. Thanks to the Apiculture and Meliponiculture program, developed in partnership with the Planalto Serrano Catarinense Beekeepers Association (AAPSC), producers received the Imaflora chain of custody certification for the forest management of honey production.

# Location

Klabin has 23 manufacturing units distributed across ten states in Brazil and one in Argentina. The administrative headquarters is located in the capital city of São Paulo.



## Klabin in the world



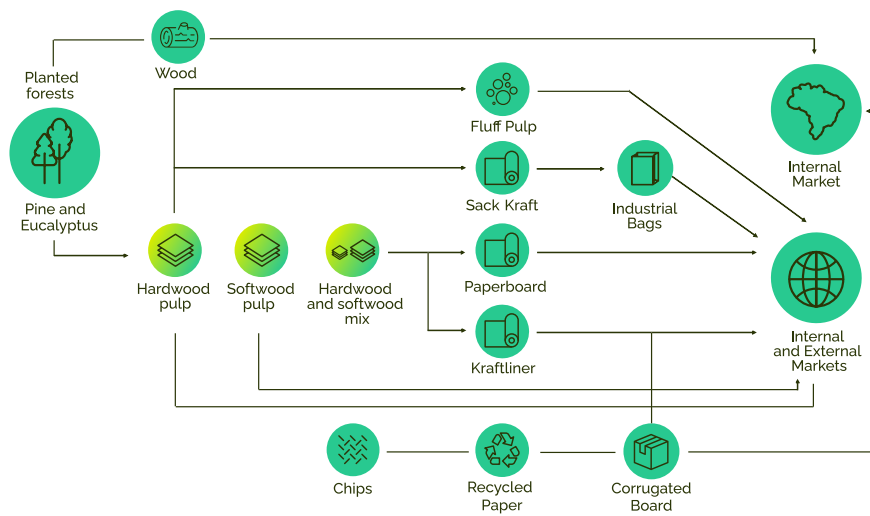
See GRI indicators 102-2, 102-3, 102-4, 102-6, 102-7, and 102-12 in the **ESG Panel**.



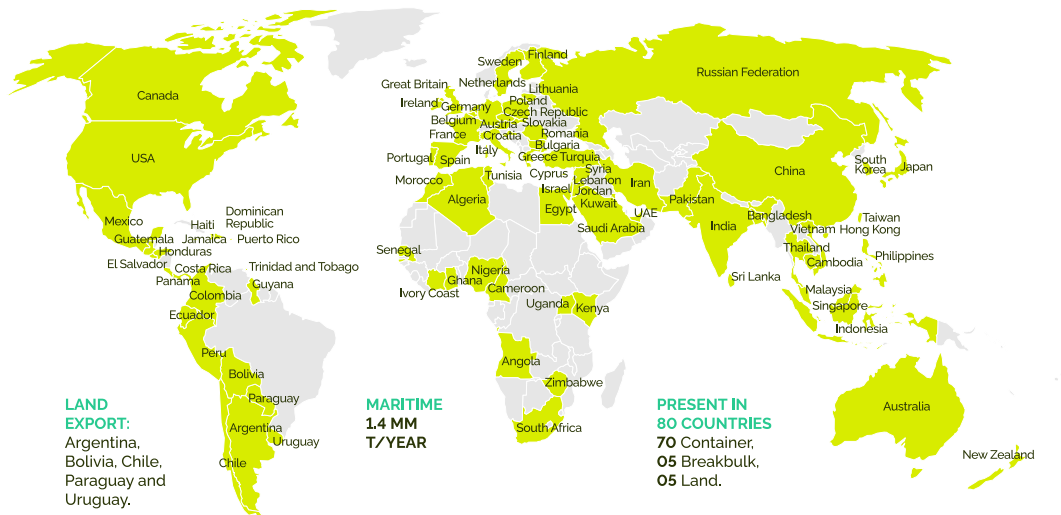
# Production destinations

Klabin's products are mainly focused on industries in the segments of processed, frozen, and fresh foods (milk, refrigerated meats, and produce, among others), health and personal hygiene (toilet paper, tissues, diapers, and toothpaste, among others), hygiene and cleaning products (laundry soap and bath soap, for example), beverages (soft drinks, beer, and yogurt, etc.), civil construction, and electronics. In addition to serving the Brazilian market, where it leads the segments in which it operates, the Company exports to 80 countries.

## From the forest to the market



## Countries to which Klabin exports



## Logistics gains

The Company began construction work for its terminal on the Port of Paranaguá wharf. Located in a privileged area, the terminal will provide even more agility to the pulp and paper operation, representing an important upgrade to the state's port infrastructure.

The planned investment is BRL 130 million, earmarked for the acquisition of equipment and operating systems, as well as the construction of two kilometers of railway extensions and a 21,860 m<sup>2</sup> warehouse.



*The terminal is among the largest in the world in terms of capacity for a single company. Photo: Klabin's Archive*

### **Railway terminal**

Klabin started operating the container railway terminal located at the Puma Unit in Ortigueira (PR). The structure is among the world's largest in transportation capacity for a single company, whose operation is capable of loading 125,000 tons of pulp and paper in containers monthly.

The terminal diversifies the logistics infrastructure in Brazil, introducing the use of other modals, in addition to roads, into the cargo movement operation, which makes the process simpler. It also increases highway safety, reduces the Company's logistics costs in Paraná by 25%, and avoids the monthly transit of two to three thousand trucks on the roads. As such, it contributes to meeting the Klabin Sustainable Development Goals (KSDGs) related to controlling climate change.



# Report

# What's important to know about this report

## How the content is organized

---

The 23rd edition of Klabin's Sustainability Report presents the highlights of the Company's performance in 2021 towards the Klabin Sustainable Development Goals (KSDGs) and its Aspiration.

This text presents the challenges and the how the company acts to address them, as well as its achievements, which reinforce its solidity, its commitment to building a sustainable future, and its journey towards growth.

The results listed here, as well as the main initiatives and practices adopted by the Company, refer to the period from January 1 to December 31, 2021. Eventually, however, information was recorded relating to early 2022, considered relevant for representing achievements already made or progress in important stages of ongoing processes. The topics addressed were raised by means of a survey with Klabin's main stakeholders.

The indicators linked to the management of these topics are concentrated in the ESG Panel, which also contains data from previous years and the Company's current position in relation to the targets set for the coming years.

The content of this report was organized based on the Klabin 2030 Agenda, named KSDGs (Klabin Sustainable Development Goals), which relates the Company's strategy in its sustainable development journey to the UN's Sustainable Development Goals (SDGs). It summarizes the material topics and environmental, social and governance (ESG) practices in the 23 KSDG topics, grouped into five axes:

**Corporate governance;**

---

**Renewable future;**

---

**Sustainable economy;**

---

**Prosperity for people;**


---

**Technology and innovation.**


---

A section dedicated to Klabin's presentation, the Message from Management, and a glossary of technical terms used in this edition complement the material.


The content of this report was guided by both the KSDGs and the following references:

-  GRI Standards (essential option);

---

-  UN's Sustainable Development Goals (SDGs);

---

-  Global Compact Principles.

---

To clarify doubts or to obtain additional information about Klabin, access the [Contact Us](#) tab.

See GRI indicators 102-40, 102-45, 102-48, 102-50, 102-51, 102-52, 102-54, and 102-56 in the [ESG Panel](#).



# KSDGs

## Evolution of the 2030 Agenda

In 2021, the Company maintained its trajectory focused on compliance with the KSDGs (Klabin's Sustainable Development Goals), which are aligned with the global agenda of the UN (United Nations Organization). The KSDGs are a set of short- (2021), medium- (2025) and long-term (2030) commitments that guide the Company's 2030 Agenda for sustainable development.

The relevant and priority issues to be addressed in this agenda, derived from Klabin's growth plan, have their performance periodically disclosed in the ESG Panel (<https://esg.klabin.com.br/en/>), launched in 2021.

### CLIMATE CHANGE

Goal: Net capture of 45 million tons of CO<sub>2</sub>eq from the atmosphere between 2020 and 2030. 2021 result: 4.9 million tons of CO<sub>2</sub>eq

### CLIMATE CHANGE

Goal: reduce scope 1 and 2 GHG emissions by 25% per ton of pulp, paperboard and packaging by 2025, and 49% per ton of pulp, paperboard and packaging by 2035. 2021 result: 7.5%.

### INFORMATION SECURITY

Goal: 100% of direct and indirect employees included in the digital language by 2030. 2021 result: 50% of direct employees and 35% of indirect employees trained.

### LOCAL DEVELOPMENT AND IMPACT ON COMMUNITIES

Goal: Klabin's minimum acceptance rate in local communities at 80% by 2030. 2021 result: 80.3% in Paraná and 81.7% in Santa Catarina.

### WASTE MANAGEMENT

Goal: zero destination of industrial waste to landfills by 2030. 2021 result: 98.1% of industrial waste reused.

### WATER USE

Goal: 20% reduction in specific industrial water consumption by 2030. 2021 result: 16% reduction.

### BIODIVERSITY

Goal: provide 1 million native tree seedlings to recover degraded areas by 2030. 2021 result: 115,800.

### DIVERSITY

Goal: reach 30% of women in leadership positions by 2030. 2021 result: 21.4%.

### SUPPLIER SOCIAL AND ENVIRONMENTAL PERFORMANCE

Goal: 100% of critical suppliers included in the Sustainable Supply Chain Management Program. 2021 result: 56%.



# Corporate governance



## Improved corporate governance

Constant evolution is the trademark of Klabin's corporate governance, which offers the necessary support to its management towards sustainable growth. The launch of the **ESG Panel** in 2021, a platform that brings together Klabin's commitments, goals and main performance indicators, promoted a gain in transparency in the presentation of results and in rendering accounts about the Company's activities.

Klabin's governance system is constantly evaluated by the Board of Directors, aiming to its improvement. The Company has a Corporate Governance Department which, among its attributions, is to establish procedures for the operation of the company's corporate bodies, as well as organize the agendas of matters to be dealt with in the Company's governing bodies.

The new channel dialogues with this Sustainability Report in the dissemination of the Company's initiatives, management, performance and challenges in the environmental, social and governance (ESG) spheres. In tune with the demands of the market, as well as investors, shareholders, and other stakeholders, the year 2021 was distinguished by governance improvement initiatives.

## Advances in management accompany company growth

Developing successors is a continuous focus at Klabin. Currently, 89% of the Executive Board is composed of professionals who made their careers at the Company and were internally mapped as potential successors through the Performance Cycle.

To sustain the Company's growth routes, an adjustment to the organizational structure was made, with the consolidation of the second Executive Board level, containing ten new positions divided among the areas. These professionals report to the Executive Board. In addition to bringing gains for management, the measure recognizes the employees and broadens the perspective of career development in the company. Its composition is as follows.

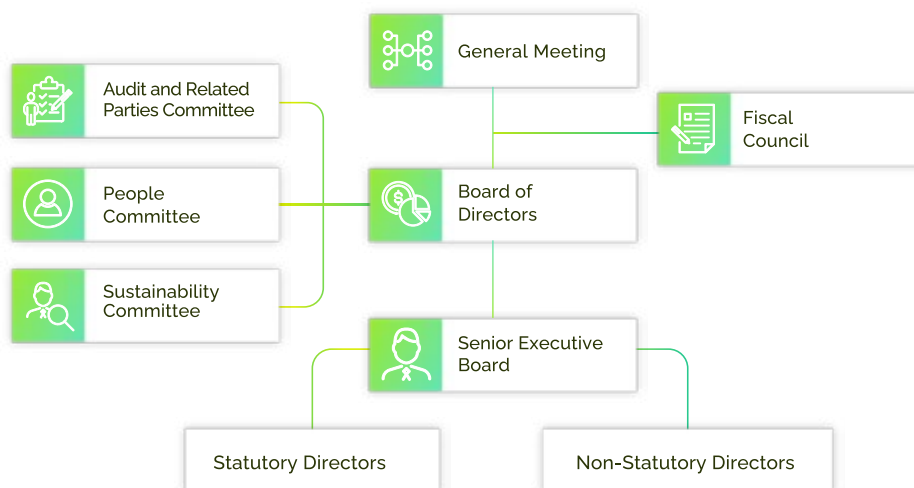
## Participation in voluntary initiatives

The most recent initiative is the ImPacto NetZero movement, which, launched in partnership with the UN Global Compact Brazil Network, represents a major step towards the realization of Klabin's purpose of contributing to building a renewable future. The Company is engaged with the Global Compact in the Sustainable Development Goals and with Disclosure, Insight, Action (CDP), among other initiatives.

See GRI indicator 102-12 in the **ESG Panel**.

## Governance structure

Klabin's main governance bodies are the General Shareholders' Meeting, the Board of Directors, the Executive Board, the Advisory Committees to the Board of Directors and the Fiscal Council. Its performance in synergy is aimed at the achievement of the Company's economic, social, and environmental results.



## Councils and Committees

### Annual term of office until the next Annual General Meeting is held

#### **Board of Directors – full members (2022)**

Paulo Sérgio Coutinho Galvão Filho (presidente), Wolff Klabin, Alberto Klabin, Daniel Miguel Klabin, Vera Lafer, Francisco Lafer Pati, Horácio Lafer Piva, Roberto Klabin Martins Xavier, Celso Lafer\*, Roberto Luiz Leme Klabin\*, Sérgio Francisco Monteiro de Carvalho Guimarães\*, Camilo Marcantonio Junior\*, Mauro Rodrigues da Cunha\*, Isabela Saboya\*.

\*Independent members, elected at a General Meeting held on March 23, 2022, for a one-year term.

#### **Fiscal Council – full members (2022)**

#### **Annual term of office until the next Annual General Meeting is held**

João Adamo Júnior, João Alfredo Dias Lins, Raul Ricardo Paciello, Maurício Aquino Halewicz\*, Louise Barsi\*\*.

\* Elected by the common minority shareholders.

\*\*Elected by preferred minority shareholders.

## Advisory Committees to the Board of Directors (2022)

### Annual term of office until the next Annual General Meeting is held

#### **Audit and Related Parties Committee**

Amanda Klabin Tkacz, Pedro Guilherme Zan, Camilo Marcantonio Junior.

#### **People Committee**

Horácio Lafer Piva, Francisco Amaury Olsen, Marcelo Bertini de Rezende Barbosa.

#### **Sustainability Committee**

Wolff Klabin, Roberto Luiz Leme Klabin, Reinoldo Poernbacher.

## Executive Board (2022)

Klabin's Executive Board is made up of a statutory Executive Board and a non-statutory Executive Board, who report to the General Director.

### **Statutory Executive Board (2022)**

Cristiano Teixeira – Chief Executive Officer

Marcos Paulo Conde Ivo – Chief Financial and Investor Relations Officer

Francisco César Razzolini – Industrial Technology, Innovation, Sustainability and Projects Director

Flávio Deganutti – Director of the Paper Business

### **Non-statutory Executive Board (2022)**

Alexandre Nicolini – Director of the Pulp Business

Ana Cristina Barcellos Rodrigues – People & Corporate Services Director

Douglas Dalmasi – Packaging Business Director

Fábio Medeiros – Legal, Integrity, Risk Management and Internal Controls

José Totti – Forestry Director

Sandro Avila – Operational Planning, Logistics and Procurement Director

The [Investor Relations website](#) contains information (curriculum vitae) of the members of the Board of Directors and Executive Board.

See GRI indicators 102-18, 102-19, 102-20, 102-22, 102-23, 102-24, 102-26, 102-27 and 102-28 on the [ESG Panel](#).

## Committees have elected representatives and approved bylaws

After the creation of three advisory committees to the Board of Directors in December 2020 – the Audit and Related Parties Committee, the People Committee, and the Sustainability Committee – the year 2021 saw the election of their members, the approval of the internal regulations that govern their operation and the start of work meetings.

Each of these committees have three members elected by the Company's Board of Directors for a one-year term, which coincides with the term of office of the members of the Board of Directors itself, reelection being permitted.

Its representatives meet every two months to evaluate results and discuss strategies and, on an extraordinary basis, to debate and recommend relevant topics that require rapid consideration by the Board of Directors.

## Governance practices

### LEVEL 2 GOVERNANCE OF THE SÃO PAULO STOCK EXCHANGE (B3)

Klabin integrates the segment that lists shares of companies that adopt differentiated governance practices. With the migration to level 2, the Company's bylaws express that, in the event of a change to the Novo Mercado, there is no premium payment to the controlling group.

### DOW JONES SUSTAINABILITY INDEX

Klabin is the only Brazilian company in the pulp and paper market to be included in the Dow Jones Sustainability Index (DJSI) in the World Index and Emerging Markets Index portfolios.

### TAG-ALONG RIGHTS

Klabin's bylaws guarantee the holders of preferred shares the right to receive 100% of the share amount paid to the controlling shareholder in the event of a sale of the company.

### EQUAL ECONOMIC RIGHTS

Holders of common shares, preferred shares, and Units (respecting the ratio of 5 to 1) receive the same amount of dividends.

### FINANCIAL STATEMENTS – IFRS

The Company's financial statements are consolidated in accordance with the International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board (IASB).

### ADHERENCE TO THE ABRASCA CODE

In 2011, Klabin adhered to the Abrasca Code of Self-Regulation and Good Practices for Publicly Held Companies, which establishes principles, rules and recommendations for the purpose of contributing to improvements in corporate governance practices.

### BIMONTHLY MEETINGS

Klabin's Board of Directors meets at least every two months to discuss business strategies and evaluate results. Whenever necessary, the Board meets extraordinarily to discuss relevant topics and approve urgent actions.

### GENERAL SHAREHOLDERS' MEETING AND IR

It is Klabin's highest decision-making body as a publicly-traded company listed on B3. The Investor Relations area, in turn, is the main communication channel with shareholders and potential shareholders.

### B3'S ISE

Klabin is part of the B3's Corporate Sustainability Index (ISE) for the ninth consecutive year. The new portfolio composition comprises 34 companies and will be effective from January 3, 2022 until December 30, 2022.

## Board of Directors' assessment

Another advance in governance practices is the project to implement periodic evaluation of the Board of Directors. In 2021, the Board of Directors carried out a self-assessment process, in addition to an external assessment, conducted by an independent consulting firm. These assessments included checks on the structure in which the Board is inserted, the dynamics of meetings and the interaction between directors, strategy, due diligence, human capital, monitoring of the Financial Statements, risks and compliance. According to the Brazilian Institute of Corporate Governance (IBGC), only 20% of companies in Brazil have a formal evaluation process for their Board of Directors.

## Shareholder's Handbook

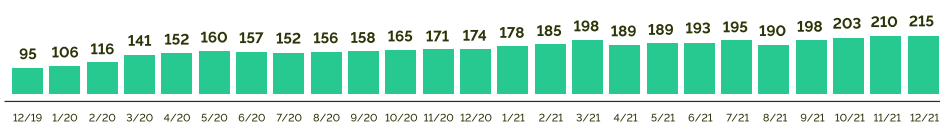
Klabin, with the intention of reinforcing transparency in its relationship with shareholders, promoting more clarity in the accountability of its results and operations, prepared the **Shareholder's Manual**. The purpose of the document is to facilitate access to the content of the agendas for the Annual General Shareholders' Meeting and Extraordinary General Shareholders' Meeting in 2022 and, additionally, to present relevant information about the Company, contributing to decision-making.

See GRI indicators 102-40, 102-42, 102-43, and 102-44 in the **ESG Panel**.

## Closer to the investor

In the last few years, the number of individuals investing in B3, the São Paulo Stock Exchange, has grown considerably, having reached the mark of 5 million in January 2022. This profile change was also reflected at Klabin: from a portfolio with over 19,000 individual investors in the shareholder base in December 2019, the company reached 215,000 in December 2021.

### Number of individual investors (thousand)



Biomass boiler at the Puma Unit. Photo: Klabin.

## Investor Relations website

Following this movement, with the purpose of being increasingly closer and more connected to them, Klabin reformulated the **Investor Relations** website in June 2021, which now has a bold design and intuitive navigation, making it easier to consult key information of interest specific to this audience, such as the company's corporate structure, studies, codes, policies, financial reports, and dividends, as well as rating and analyst coverage.

## Klabin Invest

In this scenario of an increasing number of individuals who became investors, the company holds an important indicator: one in 17 investors in the country has Klabin in their portfolio.

Klabin Invest was created in December 2020 and consolidated throughout 2021. The purpose of the channel is to connect and inform Klabin investors and financial market enthusiasts. The portal brings together publications in videos and podcasts on topics related to the Company's area of operation and, mainly, focused on the pillars of investment, sustainability, and innovation, treated didactically, with accessible language.

To learn more, consult the Klabin Invest platforms on **Youtube** and **Spotify**.

## Klabin Invest in numbers

**500+**

publications and 61 million+ impacts\* on the audience.

**26 million+**

people accessed\*\* the publications.

**47,000+**

interactions with content, between "likes", comments and shares.

\*Impact: sum of the number of times the brand was seen and a publication was seen on all social networks analyzed (Instagram, Facebook, LinkedIn, YouTube and Spotify).

\*\* Sum of the number of people who viewed any Klabin Invest post on each social network analyzed, and there may be overlap (Instagram, Facebook, LinkedIn, YouTube and Spotify).

## Long-Term Incentive (LTI)

The program, which was already offered to those in management positions, was extended to all employees, strengthening the commitment and convergence between the interests of the professionals and the company's long-term strategy. More information in the **Prosperity for the People** chapter.

# Risk management

Risk management is increasingly present on the agenda of the Executive Board, the Board of Directors, the Audit and Related Parties Committee, shareholders, and Klabin's main stakeholders. The Company's value proposition on the matter, listed among the goals of the Klabin 2030 Agenda, is to maintain responsible performance and operations, which implies the commitment of the entire team, at all levels, to act in a responsive manner in decision-making processes.

Klabin's risk management is based on the following principles:

- Protect value: must be associated with sustainable growth;

---

- Integrated processes: must permeate the entire Company, allowing the identification and monitoring of risks in all relevant business processes;

---

- Continuous monitoring: the risks to which the Company is exposed must be managed continuously and updated periodically, according to their relevance;

---

- Transparency and reliability of information: the risk management process must follow the Company's ethical principles and the information provided must be reliable and in compliance with applicable legislation;

---

- Uniform culture: the Board of Directors and the Executive Board must exercise their leadership to disseminate the risk management culture at all hierarchical levels, establishing procedures in a coordinated and integrated manner.

---

## Crisis Management

Crises can be classified as any event or negative perception that could harm the Company. In this sense, crisis management has as its main objective the return of normality as soon as possible, in order to reduce the damage through previously planned and described steps. Among the tools used as a form of crisis management, the following stand out:

- Crisis Management Policy: It gathers guidelines for classifying and evaluating the types of crisis events, and the flow of internal/external communication, according to the severity level of the event.

---

- Business Continuity Plan: Klabin's commitment on this front is to have a Business Continuity Plan (BCP) for each of its units, which maps out potential risks, the Company's preparedness to handle them, and the speed to recover operations facing eventual materialization of any of these risks. Contingency simulations were initiated in several units and the implementation of these BCPs is already planned for the short and medium term.

---

## Business Continuity Plan

Another milestone in the advancement of corporate governance in 2021 was the review and approval of Klabin's Risk Management Policy, by the Board of Directors, considering the recent process of creating advisory committees to the Board and the validation of the risk prioritization process. The governing principle of the document is to align the Company's strategic objectives and structure to best market practices.

## Highlights

### RISK MANAGEMENT AND INTERNAL CONTROLS

Klabin has a department dedicated to Risks and Internal Controls, which works in line with Internal Audit and the Information Security and Integrity areas, being responsible for risk management, the General Data Protection Law, process mapping and management of corporate policies and procedures.

### RISK COMMISSION

The Company has a Risk Commission, made up of members of the Executive Board responsible for evaluating and managing risk, jointly with Risk and Internal Controls Management.

### AUDIT AND RELATED PARTIES COMMITTEE

The Audit and Related Parties Committee advises the Board of Directors, evaluating the risk exposure control mechanisms.

## Risk classification

According to internal methodology, Klabin's risks are classified into five categories:

### Strategic

Risks that affect the strategic objectives and can be strongly influenced by external factors, although they are also subject to internal factors.

### Financial

Events that could significantly alter the Company's cash flow, as well as its financial statements and access to capital.

### Operational

Risks related to the Company's infrastructure (processes, people and technology), which affect the operational efficiency and the use of resources.



### Compliance, regulatory and legal

Risks related to possible failures in compliance with legislation, considering laws applicable to the operating sector and legislation in general.

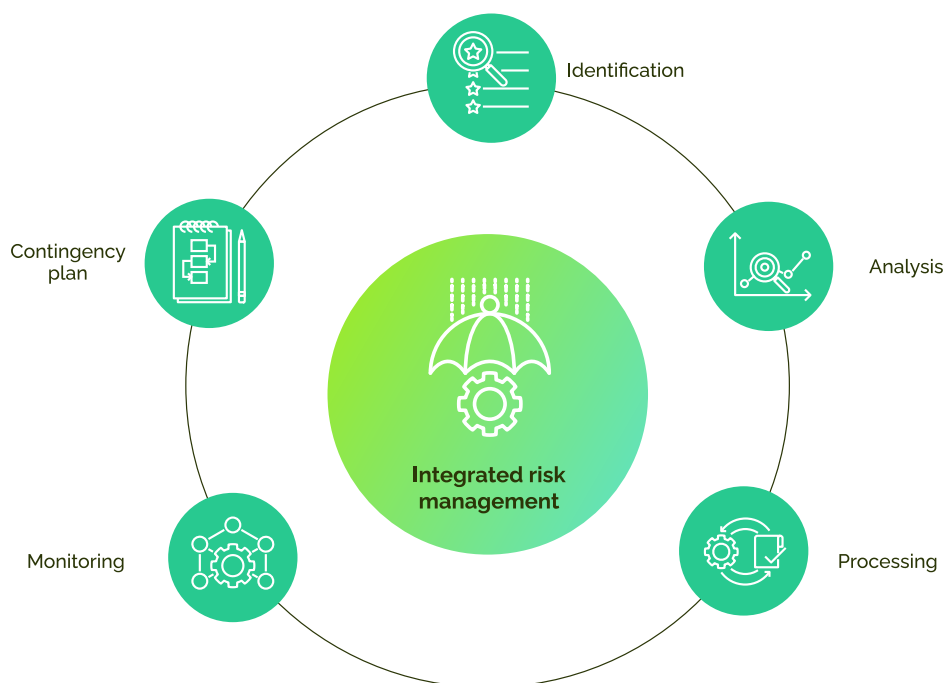
### Social and Environmental

Risks arising from acts or events that may result in negative effects on the environment and society, with impacts on the lives of native peoples and communities and protection of human health, cultural property, and biodiversity.

## Avaliação dos riscos

A avaliação dos riscos é feita conforme seu nível de criticidade, definido com base em dois aspectos: impacto e vulnerabilidade. Os níveis de cada risco são estabelecidos segundo critérios objetivos, padronizados e validados internamente. As formas de lidar com as situações de risco poderão ser as seguintes: reduzir, transferir e/ou compartilhar, reter ou aceitar ou explorar.

Para assegurar que os riscos inerentes às atividades da Companhia sejam identificados, avaliados, tratados, monitorados e comunicados, tanto no âmbito estratégico quanto no operacional, a gestão de riscos segue as etapas descritas a seguir:



See **Klabin's Risk Management Policy** for data on the company's governance and other information related to the topic.

See GRI indicators 102-11, 102-15, 102-19, 102-20, and 102-30 in the **ESG Panel**.

# Integrity program

The Integrity Program is Klabin's main platform for managing ethical issues. Aligned with Klabin's 2030 Agenda, it brings together a series of procedures to prevent, detect and remediate conduct that may expose the Company and employees to situations contrary to the Company's principles and values.

In addition, it institutes initiatives in accordance with global best practices related to the subject, established in consistent pillars of action that support the development of activities such as the Code of Conduct, the Anti-Corruption Manual, training, communication plan to strengthen the Integrity culture, risk matrix, reputational assessment of third parties, integrity channel and ombudsman and Integrity Commission.

As a result of the advances and maturation of its pillars, the program continued its improvement process in 2021, with emphasis on the Klabin Integrity and Ombudsman Channel, which has been an essential tool for identifying situations of violation of the Company's values and principles, as well as for the application of corrective and preventive measures.

Also as a result of the maturing of its Integrity Program, Klabin obtained external recognition for its initiatives, for example, with the Ethics Week, an annual event aimed at promoting, reflecting and disseminating ethical issues in the Company.

A portal dedicated to integrity issues was created on the My Klabin intranet, in which the employee can access information about the program. Integrity topics were also taken to the Company's unit in Argentina, in a specific event as part of actions to reinforce the culture of integrity throughout the Company.


## Code of Conduct

The Code of Conduct was revised to include diversity, the Brazilian General Data Protection Law (LGPD), the Klabin Attitude (company culture) and the KSDGs (Klabin's Sustainable Development Goals) among the topics addressed, in addition to the requirements of anti-corruption and antitrust legislation.

Klabin thus attests to its commitment to building ethical relationships in indoor and outdoor environments, contributing to make the business environment more transparent, fair and sustainable. This evolution is consolidated in the strengthening of the Company's image and reputation, in addition to producing positive repercussions on the business strategy.

The efforts made in this direction were recognized, having directly influenced the score obtained in the Dow Jones Index (93 on a scale of 100 in the Business Ethics category), which earned Klabin the position of best company in its segment in the Ethics and Integrity category.

- 100% of own employees received anti-corruption communication.
- 32.43% were trained on the subject in 2021.
- 608 cases involving violations of Klabin's Code of Conduct registered on the Complaints Channel were investigated, 190 confirmed.



Fighting sexual harassment was a major topic at Klabin throughout the year. The Don't Be Silent campaign won regional and national awards from the **Brazilian Association of Business Communication (Aberje)** in 2021. The initiative showed how cases of **sexual harassment** happen and the effects that this type of embarrassment can trigger on the lives of those who are affected by it. Women and LGBTQIA+ people have historically been the main victims of such situations, which is why their occasional grievances are at the center of the Company's concerns, which is committed to curbing any and all inappropriate behavior.

Klabin believes that the initial step to improve relations among employees is to raise awareness of the problem. To that end, webinars, training sessions, and other mobilizing actions were promoted. The dissemination of the Integrity and Ombudsman Channel, managed by an independent third-party company, through which employees can make any type of complaint, with guaranteed anonymity, was also reinforced.

### Future prospects



The Company remains committed to the highest ethical and Integrity standards, by monitoring and improving its Integrity Program.

See GRI indicators 102-16, 102-17, 205-1, 205-2, and 205-3 in the **ESG Panel**.

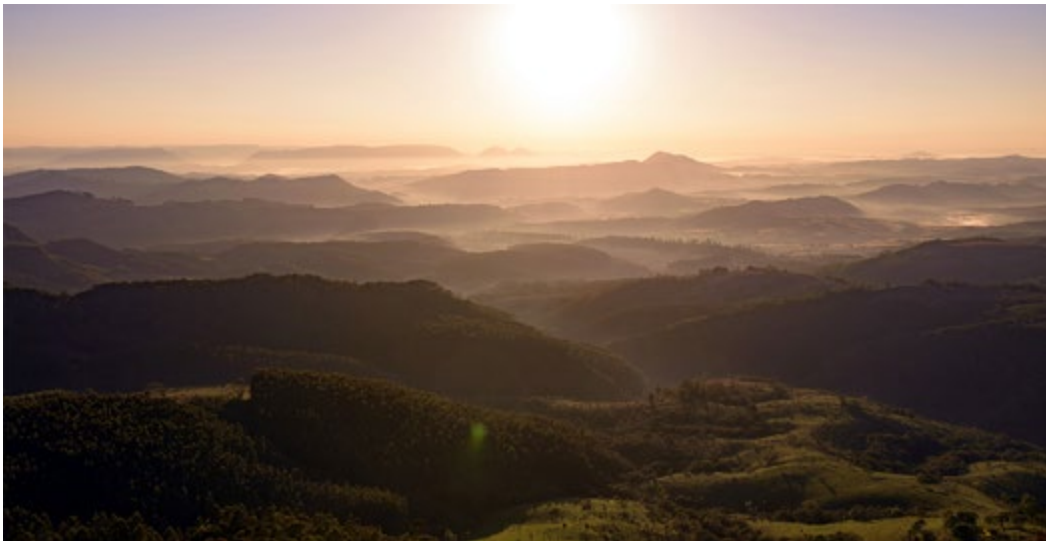


# Renewable future

## Responsible practices for renewable future

Klabin is committed to actively participating in the construction of a renewable future. This implies exercising a set of responsible practices in the use of natural resources, ensuring the protection of the environment and conservation of forests, which are the basis of the Company's business model. For this reason, acting in compliance with the laws and regulations and controlling the indicators by means of established parameters, many of them stricter than those provided for in the legislation, have been constant practices.

The Company seeks to make sustainable use of water resources, be self-sufficient in power generation, and reduce atmospheric emissions to maintain a negative carbon balance in operations, in addition to reducing the generation of solid waste and reusing what was generated. The forests, both planted and conserved, are important environmental assets, providers of ecosystem services such as water, carbon, biodiversity and the soil itself.



*Actively participating in the construction of a renewable future implies ensuring the protection of the environment and the conservation of forests. Photo: Klabin's Archive*

## Climate change agenda

Achieving net capture of 45 million tons of CO<sub>2</sub> from the atmosphere between 2020 and 2030 is one of the KSDGs related to climate change.

The Company's efforts are governed by the Guidelines for Climate Change Management – Mitigation and Adaptation. The main drivers for the management of the topic include the Business Ambition for 1.5° C, a UN global campaign, and the commitment to reduce emissions considering scientific discoveries and neutralization of emissions by 2050.

Klabin was one of the first Brazilian companies to have science-based decarbonization targets approved by the Science Based Targets Initiative (SBTi). On this front, the Company committed to reducing scope 1 and 2 **greenhouse gas (GHG)** emissions per ton of pulp, paper, and packaging by 25% by 2025, and by 49% by 2035, with 2019 as the base year.

The adoption of renewable, recyclable and biodegradable materials for product manufacturing is key to the development of a low-carbon **circular economy**, in which society's demands are met in line with planetary challenges and limits.



4.9 million tons of CO<sub>2</sub> eq is Klabin's positive carbon balance in 2021.



Planted forests are renewable natural resources that absorb greenhouse gases from the environment.



An average of 84 trees per minute are planted at Klabin.

## Commitments to the public agenda

Klabin shares its experiences about the benefits of including sustainability among its business strategies. This helps to engage more companies in this cause, which belongs to the entire planet, contributing to the sustainable future that everyone so desires. The adhesion to external initiatives reinforces this positioning.

## Initiatives we subscribe



### TCFD

Task Force on Climate-Related Financial Disclosures. The initiative provides recommendations for addressing the financial impacts of climate change, increasing transparency about climate-related risks and opportunities for informed financial decision-making. Klabin has been a TCFD Supporter since 2020, which represents public support for Financial Stability Board (FSB) recommendations on climate risk and opportunity management. As such, the Company increases transparency and improves communication about its management.



### SBTi

In May 2021, Klabin's decarbonization targets were approved by the Science Based Targets Initiative (SBTi), which establishes methodologies to help companies design emissions reduction targets based on climate science and sustainable economic development.



### ImPacto NetZero Movement

The result of a partnership between Klabin and the UN Global Compact Brazil Network, which arose from the urgency to create a collective mobilization around mitigation of climate change. It aims to invite companies to evaluate the adoption of science-based greenhouse gas emission reduction targets and to drive society to engage in the cause of planetary sustainability. To that end, it encourages the private sector to join the Science Based Targets initiative (SBTi).



### CDP

Klabin achieved a Triple A rating in 2021 for the first time from CDP (Disclosure, Insight, Action), being the first company in Latin America to accomplish such a feat and one of 14 companies to achieve this position in the world. The company joined CDP in 2010 and, in 2021, obtained the highest score granted by the institution in the three programs – Climate Change, Water and Forests. CDP, an international non-profit organization, analyzes and recognizes the efforts of companies to manage the environmental impacts of their activities



### Business Ambition for 1,5°C

UN campaign that gathers about 200 companies worldwide in an effort to limit the rise in global temperature to no more than 1.5°C until 2030. In Brazil, Klabin is one of the 11 members of the initiative.



### We Mean Business

In 2021, Klabin joined the global coalition that unites the business sector around controlling the effects of global warming. Several companies from around the world participate in the initiative, which proposes the establishment of a low-carbon economy.



*Diagnosing, monitoring and maintaining the region's biodiversity is one of the commitments made by Klabin. Photo: Zig Koch.*

### **Certifications attest commitment**

In 2021, Klabin received the FSC® (FSC-C023492) certification that attest to the conservation or restoration of ecosystem services – biodiversity conservation, carbon sequestration and storage, and watershed services – after an audit conducted by the Institute for Agricultural and Forest Management and Certification (Imaflora) at Fazenda das Nascentes, located in the Serra da Farofa Complex RPPN in Santa Catarina.

Thus, the Company became the first in the country to achieve these three seals simultaneously. To obtain the certifications, the following commitments were made: diagnose, monitor and maintain the region's biodiversity; protect the areas from illegal hunting and fishing; maintain the carbon sequestration and storage of the native areas; protect them from fire, deforestation and degradation; maintain the quality and availability of water resources and continuously increase knowledge about the topics involving the conservation or restoration of the ecosystem services.

### **Participation in COP-26**

Since Eco-92 in Rio de Janeiro, Klabin has been actively participating in environmental conferences, in which it has been a benchmark for its good practices in the conservation of native forests and springs, and for its forest management model.

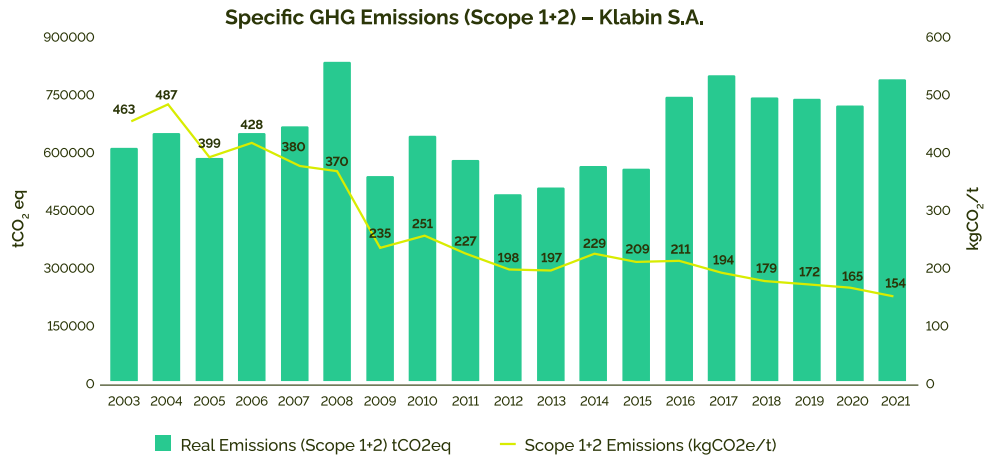
The historical commitment to the topic and the various initiatives joined in recent years have caused Klabin to stand out and be invited to join the Business Leaders Group of the 26th UN Conference of the Parties, COP-26. The group was responsible for spreading the debate about climate change and engaging the private sector in the discussion about ways to mitigate it, in addition to dealing with the agendas of COP-26, held in Glasgow, Scotland.

Represented by its directors, Klabin took part in discussions with the main global leaders, deepening the reflection on the topic and, even before the event, participated in an agenda to mobilize other players and accelerate the private sector's commitment to a carbon-neutral economy.

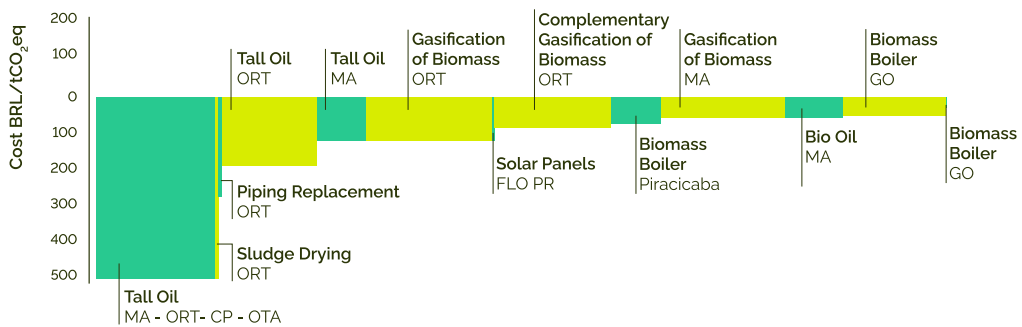


## Investments in low-carbon technologies

Klabin has a history of investing in low-carbon technologies. This allowed for a reduction of 67% to be attained between 2003 and 2021 in the emissions of CO<sub>2</sub> equivalent per ton of product in its operations.



Using the Marginal Abatement Cost Curve (MACC) tool, it is possible to safely and accurately assess the effectiveness of the technologies used and the necessary investment, thus reaching the calculation of indicators related to CO<sub>2</sub> emissions.



### Low-carbon technologies

Examples of low-carbon technologies already implemented are the gasification of biomass and the production of tall oil, both adopted at the Puma Unit in Ortigueira (PR), and a biomass boiler installed in the Piracicaba Unit (SP).

Biomass gasification plant in operation at the Puma Unit

## Emissions management


Since 2003, an annual greenhouse gas (GHG) inventory has been performed, verified by a third party. The data is available for transparent, fast and simple consultation in the Public Emissions Registry, a platform for disclosing corporate emissions inventories for organizations participating in the **Brazilian GHG Protocol Program**.

Klabin's inventory includes Scope 1, 2 and 3 GHG emissions. In scope 3, the Company already accounts for emissions from the categories of purchased goods and services (category 1), fuel and energy-related activities not included in scopes 1 and 2 (category 3), transportation and distribution paid for by Klabin (category 4), generated waste (category 5), business trips (category 6), and employee commute (category 7). The Company's goal for the coming years is to expand the accounting of emissions from the processing of products sold (category 10) and end-of-life treatment of products sold (category 12) and to continue to expand the accounting of emissions from goods and services provided, aiming to measure at least 90% of the total spent by the Company with its business partners. An internal Klabin team, supported by an external consulting firm, has been developing GHG emissions accounting strategies that encompass the company's entire value chain.


The Company has a comprehensive matrix of climate-related opportunities and risks, which contains the internal records on impacts experienced due to climate events and observations from the Climate Conference (COP) and the Intergovernmental Panel on Climate Change (IPCC).

Consultants and researchers specializing in **Ecophysiology** and **Climatology**, whose work is focused on the continuous analysis of climate change behavior that may influence forestry planning, perform an important role on this front.


In the ESG Panel, see GRI indicators 201-2, 305-1, 305-2, 305-3 and 305-4 and the 2030 Agenda goals for the **Climate change** material topic.

-  In 2021, Klabin emitted 155 kg CO<sub>2</sub>eq per ton produced, a reduction of 4% compared to 2020 and the equivalent of 10.3% of the target agreed with the SBTi, having 2019 as base year.


---

-  Total emissions (direct and indirect) reached 1.3 billion tons of CO<sub>2</sub>eq, 7% above 2020, mainly due to the units acquired from IP and the start-up of Puma II.


---

-  Even so, considering the 17% increase in production in the period, the energy intensity decreased by 8%.

---

-  This result is mainly due to the 44% reduction in the intensity of scope 2 emissions as a result of the issuance of renewable energy certificates (I-RECs) from the surplus power generated by the Puma Unit.

---

-  4.9 billion tons of CO<sub>2</sub>eq was the net capture from the atmosphere in the period.

---

Klabin's carbon balance is positive, which means the Company captures more carbon dioxide from the atmosphere than it emits in its operations.

## Carbon market

Klabin is aware of the possible opportunities of the carbon market, which, in addition to reinforcing care with the environment, represents economic benefits as well. The development of several carbon credit projects is currently being studied, including a potential arising from forest expansion over degraded areas, such as pastures. For this, the Company follows the **United Nations Framework Convention on Climate Change (UNFCCC)** methodology, which enables the generation of carbon credit from reforestation and forest restoration.

## Increasingly renewable matrix

Klabin has been working to increase its energy production capacity from biomass and black liquor, progressively increasing its renewable energy matrix.

Today, 89,5% of the Company's energy matrix comes from renewable fuels, and the goal is to reach 92% by 2030, in addition to attaining 100% purchase of certified energy from renewable sources.

In search of solutions for increasingly sustainable production, the Company's researchers study the implementation of low-carbon technologies, such as tall oil, generated from soap (byproduct of the paper making process), and bio-oil obtained from residues of wood, branches and leaves (post-harvest). Both can significantly contribute to the company achieving its goals related to the control of pollutant emissions and the use of clean energy.

Klabin also uses other renewable fuels, obtained within its production processes, such as methanol, turpentine, tar from tall oil and hydrogen. The latter is obtained directly from a satellite chemical production unit in the Puma Unit, in volumes of about 2,000 tons/year, which equates to the replacement of 4,000 tons of fuel oil.

An example of a project already implemented is the case of the biomass gasification plant at the Puma Unit, which has the potential to reduce more than 65,000 tons of CO<sub>2</sub>eq from the reduction of 20,000 tons of fuel oil. This project came online in March 2022, marking the beginning of a new cycle to achieve science-based targets.



*Protecting biodiversity is also part of our business. Photo: Klabin's Archive*

## Self-sufficiency at the Puma Unit

The Puma Unit, in Paraná, uses biomass for energy generation and sells the surplus. An Internal Energy Conservation Committee seeks opportunities to reduce energy, steam and compressed air consumption at the plant, in addition to eliminating waste.

In 2021, a third turbogenerator in the unit came online, integrated with two others already in operation. Together, they now produce enough power to supply the plant's electricity demand for two pulp machines, one kraftliner machine and, in the future, one paperboard machine (MP28), including a high-yield pulp mill. Energy is also used by partners in the production of Oxygen and Sodium Chlorate, used in bleaching plants. The generation surplus is transmitted to the National Interconnected System, which operationalizes the country's production and distribution of electricity.

With this new turbogenerator in operation, Klabin is contributing even more to the production of clean and sustainable electricity, which is fundamental especially when the reservoir levels of the hydroelectric plants are low, which has been occurring.

In the Puma II project, the highest level of technology available is applied to ensure the continuity of self-sufficiency in energy, which is done through the processes of optimization, automation and total use of biomass and byproducts. The installation of a gasification plant allows wood to be transformed into synthesis gas for use as the main fuel in one of the lime ovens in place of fuel oil.

**820.490  
MWh\***

were delivered to the Brazilian Electric System by the Puma Unit in 2021.

**90 MWh/h**

is the estimated power that will be made available with the third turbogenerator.

**250,000**

homes can be supplied with this amount of surplus energy.

\*1,074,564 MWh if the settlement of the Electric Energy Commercialization Chamber (CCEE) is considered.

See GRI indicator 302-4 and others related to the material topic Energy use in the [ESG Panel](#).

# Water use management

Water is one of the most important inputs in Klabin's production processes, especially for pulp and paper. The Company seeks to manage its use with a focus on economy (consumption reduction) and reuse, in addition to compliance with environmental laws and regulations.

In addition to the KSDGs related to the topic (described below), the Company's commitment was reinforced in 2021 with the issuance of the Sustainability Linked Bond (SLB), for which the selected goals included water consumption equal to or below 3,68 m3 per ton of production until 2025, equivalent to a 16.7% reduction from the level verified in 2018 (more information about the SLB in Economic performance)

## KSDGs goals until 2030

- Reduce specific industrial water consumption by 20%, with 2018 as the base year;
- Conduct 100% of forest operations under own management with hydrosolidarity management;
- Have initiatives to increase territorial water security in 100% of the locations where the company operates.

### PARTICIPATION IN COMMITTEES

Klabin representatives actively participate in discussions on water use in forums\* of various regions.

### WRI AQUEDUCT

The tool is used by Klabin to measure the ratio of total annual water withdrawal to the available annual renewable supply. Rates higher than 20% represent areas of water stress.

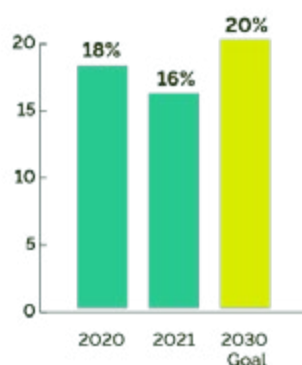
### HYDROSOLIDARITY IN WATER MANAGEMENT

The pioneering initiative by Klabin seeks to verify the best practices in forest management to extinguish or minimize impacts on microbasins.

\*Tibagi River Basin Committee (PR), Canoas-Pelotas River Basin Committee (SC), Piracicaba, Capivari and Jundiá River Basin Committee (SP) and the Goiana River Basin Committee (PE).

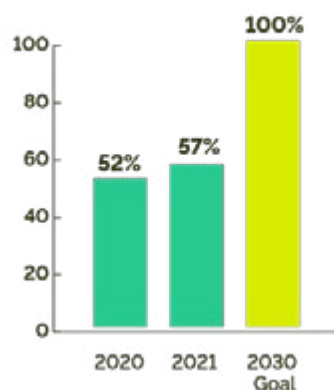
In 2021, Klabin withdrew, on average, 22.1 m3 of water per ton of product, but effectively consumed only 3.73 m3 of water per ton of product. This is because part of the volume used remains in the final product and part of it evaporates during the industrial process. The important thing is that, of the total water used, more than 83% is returned to the receiving bodies.

Percentage of reduction in specific consumption of industrial water



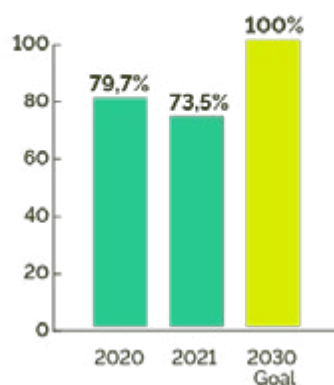
The drop in the percentage of specific consumption reduction (per ton produced) mainly occurred due to the acquisition and integration of the five International Paper units. Still, even with the start-up of MP27, the Puma Unit, our largest unit, was able to improve this indicator, reaching an 15% reduction of specific consumption at the unit, through water efficiency in the process and initiatives for water and effluent reuse.

**Percentage of locations with initiatives to increase water security**



The WRI Aqueduct tool evaluates water stress in all the Company's units, guiding its action priorities in the most vulnerable territories. Actions adopted in 2021 that contributed to the result include the installation of new Effluent Treatment Stations in the Manaus and Betim units, the participation in Regional Development Forums in Angatuba and Goiana, taking the topic for discussion, and environmental education actions in Klabin's Caiubi Program.

**Percentage of forest harvest operations under own management with hydrosolidarity management**



The increase in wood purchases and the decrease in harvesting in own areas were the main reasons for the percentage drop in 2021, an oscillation considered normal from an operational point of view. Klabin is working to include other forest units, taking into account its expansion, in order to reach the KSDG of 100% of the areas analyzed under the hydrosolidarity management flow. Among the initiatives performed in 2021 are the consolidation of the watershed mapping methodology and the elaboration of the hydrological constraints map for new scenarios, which may influence the assumptions in other locations.

## Impacts related to the disposal of effluents

Klabin bases the effluent disposal standards in its operations on federal legislation and that of each city and state where its plants are located and the conditions of each body of water used in these plants. In addition, the results are compared to the **IFC/IPCC** indicators, which are a reference in the implementation of performance standards in social and environmental sustainability.

In order to determine the effluent discharge limits, the responsible environmental agency requests studies on water dispersion and self-depuration of the water body, accounting for the preservation of its quality and volume.

## Effluent disposal

The manufacturing plants follow the limits established by legislation currently in effect at each operating location for effluent reference and monitoring. Parameters such as **Biochemical Oxygen Demand** (BOD<sub>5</sub>) and BOD<sub>5</sub> removal efficiency are priorities. In the pulp and paper mills, the concentrations of **Chemical Oxygen Demand** (COD) and phosphorus in effluents are also of great importance. The indices are often compared to global benchmarks established by the IFC/IPCC.

One hundred percent of the effluents are treated at the Effluent Treatment Plants (ETPs) before returning to the water bodies. Treatment is monitored both internally and by a third party, in compliance with all legal requirements. The units periodically undergo internal and external audits to assess the Management System, including the water and effluent system. In several of Klabin's units, water-related targets impact the Profit-Sharing Program (PPR).

Tertiary treatment at the Puma Unit ensures disposal standards easily absorbable by the water body.

In 2021, the start-up of MP 27 at the Puma Unit and the five new units acquired from International Paper caused a 6% increase in the volume of water discharged by the Company compared to 2020.

See GRI indicators 303-1, 303-3, 303-5 and others related to the material topic **Water use** in the ESG Panel.

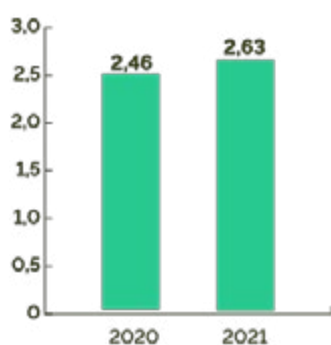
## Waste management

Waste management is one of Klabin's priorities under the KSDG to zero the disposal of industrial waste in landfills by 2030. The commitment was reinforced in 2021 with the issuance of the Sustainability Linked Bond (SLB), which aims for the minimum rate of 97.5% reuse/recycling of solid waste by 2025 (See more about the SLB in [Economic performance](#)).

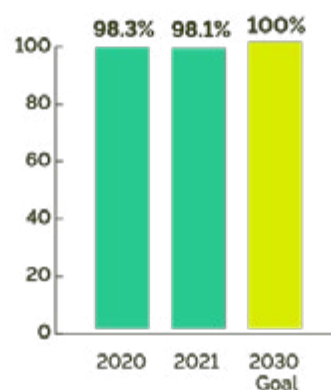
To this end, the Company maintains a series of initiatives focused on solving the problem, ranging from environmental awareness projects to support for members of the production chain, such as recycling professionals.

Klabin's Sustainability Policy encompasses pollution prevention through the reduction of the impact of solid waste generation, the search for the most efficient technologies and solutions, guidance by the SDGs, and compliance with legislation and standards applicable to the product, environment, health and safety. Environmental management is also driven by the guidelines established by [ISO 14001](#), an international standard in which a large part of the Company's units is certified.

**Waste generated (in millions of tons)**



**Reused solid waste**



In 2021, the start-up of the Puma Unit expansion resulted in an increase in waste generation. The company managed, however, to maintain the waste reuse level of 2020, with a slight reduction (of 0.2%), which occurred mainly due to the expansion of the operation. The acquisition of five units, which added a total of 16,008 tons of unused waste, mostly from the scrubbing of chips for the recycling process, affected the result.

See GRI indicators 301-1, 306-2 and others related to the [Waste management](#) material topic in the ESG Panel.





# Sustainable economy

## The best economic performance in Klabin's history

In a year marked by uncertainties, cost increases, and volatility in global markets, Klabin overcame the challenges and achieved the best operational and financial results in its 123-year history.

Adjusted EBITDA has grown for 12 consecutive years, which proves that our commercial flexibility, operational efficiency, and agility to meet the demands of the domestic and foreign markets, combined with a diversified product portfolio, constitute a privileged business model.

In 2021, the Company experienced high demand for its products, especially in the packaging paper market. In addition to being widely used in essential items, such as cleaning products or toiletries and food items, they are essential in e-commerce.

Sales volume was 3.8 million tons, representing a 6% increase over 2020, mainly reflecting the incremental volume from International Paper's corrugated board packaging plants and the first paper machine from the Puma II Project, Paper Machine 27, better known as MP27.

Although 2021 was marked by high costs, affected by rising inflation and the upswing in commodities, the company was able to adapt prices and take advantage of the positive influx of the depreciated exchange rate on revenues. Under these conditions, it was possible to not only maintain but also increase the EBITDA margin, which, excluding non-recurring effects, rose from 39% in 2020 to 42% in 2021.

**BRL 16.481  
billion**

Net revenues (38% higher than 2020)

**BRL 6.865  
billion**

Adjusted EBITDA excluded non-recurring effects (46% higher than 2020)

**3.8 million**

tons was the sales volume, up 6% compared to 2020

See GRI indicators 102-7, 201-1 and others related to the **Economic performance** material topic in the ESG Panel.

## Results by business unit



### FORESTRY

In 2021, Klabin moved approximately 14 million tons of pine and eucalyptus logs and chips, as well as biomass for energy generation, supplying the internal demand for pulp and paper manufacturing, and providing raw material for sawmills and rolling mills. Despite the destination of wood for higher internal consumption in the operations, the sales volume in 2021 was 2.6 million tons, an increase of 73% compared to the previous year, when 1.5 million tons were sold. The net revenue was BRL 275 million.

More than 27,900 hectares of pine and eucalyptus were planted in the year, on company-owned, leased, co-owned, and partnership lands in municipalities in the areas covered by the Puma and Monte Alegre (PR), Otacilio Costa (SC), and Angatuba (SP) units.



### PULP

The year 2021 began with a strong recovery movement. This resumption occurred across all markets, but with different behaviors throughout the year, allowing for consecutive price increases during the first six months of the year. As far as the operation is concerned, the Pulp Business Unit produced 1.66 million tons, 7% above the previous year's volume, and once again above the unit's nominal capacity.

In the year, the increase in pulp sales volume was 1% compared to the same period in 2020, reaching 1.55 million tons of bleached pulp, with 1.12 million tons of hardwood pulp and 431,000 tons of softwood pulp/fluff. The net revenue of the pulp segment closed 2021 at BRL 5,8 billion, an increase of 49% compared to the previous year.



## PAPER

Em 2021, as mudanças já em curso e aceleradas pela pandemia, como a busca de produtos In 2021, the changes already underway and accelerated by the pandemic, such as the search for more sustainable products by customers and consumers, the substitution of plastic packaging for paper packaging, and the greater representation of e-commerce in sales became more evident, reflected in the intense demand for paper and the strong recovery in prices throughout the year.

One of the highlights of the year was the start-up of the MP27 operation, with a production capacity of 450,000 tons per year. The machine is part of the Company's expansion project, known as Puma II, and initiated the production of Eukaliner®, the world's first kraftliner paper made entirely from eucalyptus fibers.

In the year, production was 99,000 tons, with a higher concentration in the last quarter. Part of this production was directed for conversion at the Company's packaging units and part was directed for sales to customers in the external market, in accordance with previously established contracts.

A paperboard machine, MP28, will also be installed in the Puma II Project. Its construction had reached 14% completion by the end of 2021. With production capacity of 460,000 tons per year, MP28 is scheduled to come online in the second quarter of 2023, continuing Klabin's expansion.

In the kraftliner market, demand remained intense and Klabin's sales volume over the course of the year came to 407,000 tons, 6% less than the volume in 2020. The reduction is explained by the higher level of internal conversion of paper into packaging with the incorporation of the International Paper (IP) packaging assets in Brazil. As such, the net revenue was BRL 1.63 billion in 2021, a growth of 36%, reflecting the better price conditions and the depreciation of the Brazilian real against the U.S. dollar.



## PACKAGING

Klabin's strategic positioning in the packaging market, especially linked to essential goods, was reinforced by its increased share of the Brazilian market after the acquisition of IP's assets in Brazil.

Thus, Klabin's converting plants operated at full capacity for most of 2021 in order to meet the intense market demand. In this context, the corrugated board sales volume reached 948,000 tons, up 31% over 2020 and 5.7% when disregarding the additional volume from IP.

Net revenue, in turn, was BRL 4.66 billion, a 73% increase over the previous year, with a net increase of BRL 994 million from the new units.

The industrial bag business continues to operate at full capacity, given the growing scenario of high packaging demand for civil construction and other uses, both in the domestic market and internationally. In the annual comparison, net revenue expanded 17%, mainly due to the sales mix and price transfers intended to offset inflation and cost increases.

## Klabin's e-commerce strategy

Attentive to the growth of e-commerce in recent years, Klabin has maintained, since 2019, a platform that structures its service front for this market, driven by changes in consumption behavior caused by the pandemic.

Through **Klabin For You**, the Company offers innovative and sustainable solutions in corrugated board and sack kraft packaging to meet a wide variety of needs, from the end consumer to large companies, in addition to small businesses and micro-businesses. For the last two, customized paper-based solutions are also available, with a simplified purchasing process and in low quantities. This sales channel offers packaging for different purposes and accessories for packaging and stationery items or even creative solutions, such as a pet house, all made from Klabin's cardboard and paper.

Klabin saw an increase of more than 100% in sales of packaging for e-commerce during the pandemic. In 2021, there was an 81% growth in the number of accesses to the platform, reaching more than 620,000 people. In the period, the company maintained its focus on diversifying its portfolio on the website to offer more solutions in paper packaging and a more comprehensive customer journey, which resulted in an 80% increase in the number of products available, totaling more than 750 items.

### #eureciclo seal



In July 2021, the packages sold on Klabin ForYou began to feature a new sustainability attribute: the "eureciclo" seal, which attests to the engagement in recycling by means of reverse logistics certification of the items, adding even more value to the Company's e-commerce strategy.

In practice, the seal certifies the reverse logistics of post-consumption packaging by means of a platform that tracks the invoices issued by cooperatives and recycling operators that are partners in the initiative. The adoption of the seal also contributes to the National Solid Waste Policy, which has the goal of recycling at least 22% of the packaging sold by the companies. The seal is a guarantee that the brands that carry it allocate resources, in an environmental compensation system, for the development of the recycling chain.

## Sustainable bonds

Klabin's commitment to sustainable development recently earned the company an invitation to join the United Nations Global Compact's **CFO Task Force** for the Sustainable Development Goals (SDGs).

Partner companies in the initiative commit to the four CFO Principles on Integrated SDG Investments and Finance, integrating corporate finance; investments and strategy for the SDGs; in addition to measuring and reporting their impact.

As part of this sustainable finance strategy, in January 2021, the company issued bonds linked to sustainability goals, called Sustainability Linked Bonds (SLBs).

The transaction, in the amount of USD 500 million, has a ten-year maturity and the lowest interest rate (3.2% per year) achieved by a Brazilian company with the same credit risk rating as Klabin.

The Company has a history of issuing green bonds since 2017, when it issued the first, maturing in ten years, and the second in 2019, both in the amount of US\$500 million each. In 2020, Klabin reopened the green bonds, for an additional funding of US\$ 200 million, maturing in 2049. Detailed information on these bonds is available on the **Sustainable Finance** page in the ESG Panel.

In addition to issuing the bonds, the Revolving Credit Facility (RCF) was recently contracted, a revolving credit line of USD 500 million, maturing in October 2026 and with costs linked to the sustainability goal. As a result, the Company committed to achieving three ESG targets by 2025:

- Water consumption equal to or below 3.68 m<sup>3</sup> per ton of production;

---

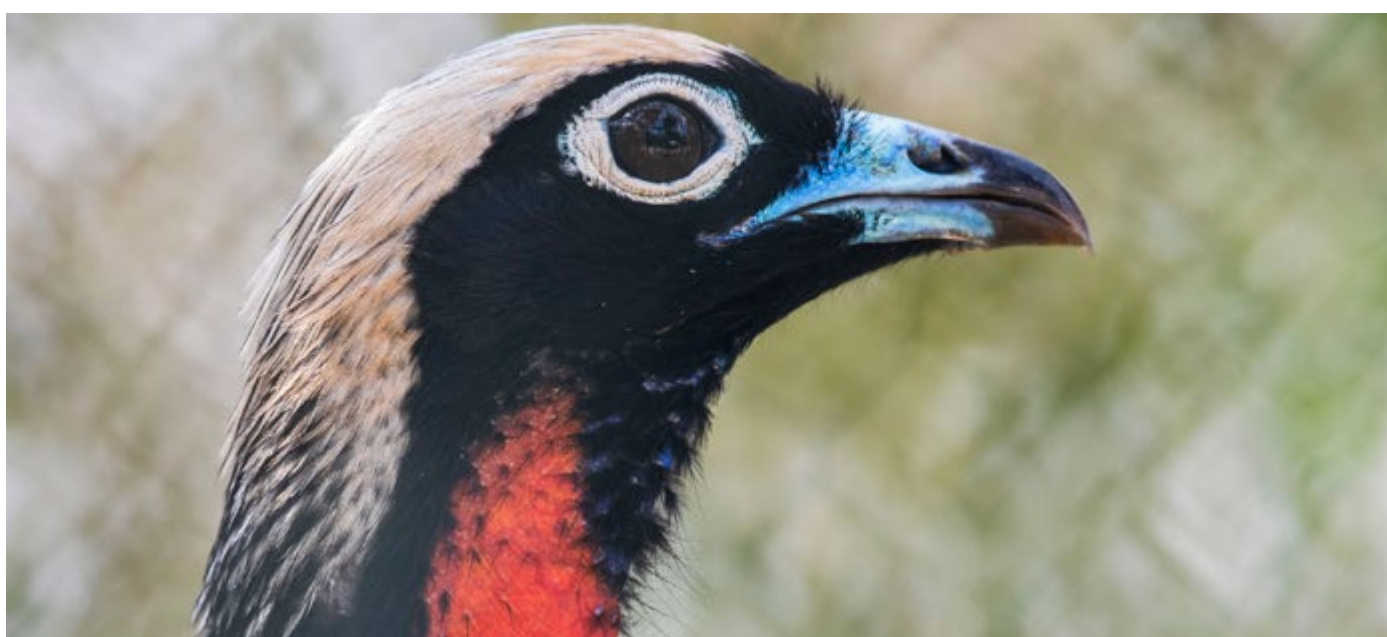
- Minimum 97.5% reuse/recycling of solid waste;

---

- Reintroduction to the ecosystem of two species of endangered native animals, such as the guan (see the case of the guan below). Klabin was the first company to issue SLBs linked to a biodiversity goal.

---

Find more information on [Sustainable Finances](#) on the newly launched ESG Panel page.



*Jacutinga, considered extinct in the regions where it was originally found, is a great seed disperser.*

### **Reintroduction of locally extinct endangered species**

In the SLB target related to biodiversity, the work being carried out in Klabin's Ecological Park, in Paraná, on reintroducing the guan (*Aburria jacutinga*) into nature, after reproduction in captivity, stands out. The bird, considered extinct both in the interior of the state and in southern Bahia, Espírito Santo, and Rio de Janeiro, regions of Brazil where it was originally found, is a great disperser of seeds, contributing to forest restoration. After the renovation of the environmental enclosures in the park was completed in 2020 and all permits and licenses were obtained in 2021, the first group of birds, containing ten individuals, was released to the wild in March 2022. In parallel, two individuals born in the park were monitored as part of the breeding program for endangered species. These birds will also be reintroduced after the process of acclimatization and adaptation to the environment.

## Investments

In 2021, Klabin announced investments of BRL 342 million to be allocated to special projects and expansions by the end of 2022. The packaging segment, one of the main drivers of the company's results in recent years, will receive most of the investment, a total of BRL 251 million that will be used in initiatives focused on expanding the paper converting capacity into packaging.

The investments are expected to include the acquisition of new printers, one of which is digital, and conversion equipment, which will be installed in the units located in the states of Pernambuco, Bahia, Minas Gerais, São Paulo, and Santa Catarina. The new equipment, which should come online in mid-2022, are pioneers in the market. With high-definition printing capabilities, they meet the specific needs of growing sectors such as fruit, cosmetics, beverage, food, home appliances, and electronics, as well as e-commerce, which require sophisticated printing.



### Progress at Puma II

These investments are in addition to the company's largest growth project, the Puma II Project, which, in August 2021, inaugurated an important stage with the start-up of Paper Machine 27. With a capacity to produce 450,000 tons per year, MP27 supplies the market with paper marketed under the Eukaliner® brand, the world's first kraftliner paper made entirely from eucalyptus fibers.

The second machine (MP28), which is expected to come online in the second quarter of 2023, will produce paper board. It has an annual production capacity of 460,000 tons.

Paper Machine 27 started operating in August 2021.

## Debt management

The increase in EBITDA over the previous year and the solid cash generation during the year contributed to the Company's deleveraging, even during the Puma II investment cycle. At the end, in the fourth quarter of 2021, there was a reduction in the net debt/EBITDA ratio, measured in U.S. dollars, in order to better reflect Klabin's debt profile, to 2.9 times; at the end of the same period in 2020, the company had leverage of 4 times.

## Commitment to local development

The value that Klabin delivers to society is represented in the Company's commitment to local development and to managing the influence of its operations in the communities where it has plants. The company acts to positively influence community dynamics – in the environmental, social, and economic spheres – while respecting the quality, way of life, and local relationships. In this sense, it seeks to boost the communities' planning and participative public management capabilities towards local development.

These are Klabin's proposals for the material topic Local development and impact on communities, to which it is committed through the KSDGs and with targets such as indices of acceptance by the communities and coverage in the municipalities of projects to encourage participative public management.

The impacts of industrial and forestry operations are managed before they even materialize. Their early identification aims to avoid or mitigate the negative effects and enhance the positive ones.

The social responsibility and community relations initiatives detailed in this section encompass education and training projects for the job market, family agriculture, solid waste management, and incentives for qualification in public management planning.

### Community acceptance

One of the KSDGs is to achieve at least 80% positive perception in all the municipalities where the Company's units are located. This monitoring is done by means of a survey applied annually, whose 80% indicator is obtained by the average of eight dimensions: commitment, economic development, employment and income generation, perception of impacts, image, environmental preservation, social and business stimulus.

The survey's scope was expanded in 2021 beyond the company's largest operations in Paraná and Santa Catarina and now includes Paranaguá and Rio Negro (PR), Goiana (PE), and Angatuba (SP).

In Parana and Santa Catarina, the acceptance indices exceeded the target; in the new units surveyed, the results have not yet reached this level but are close to the desired 80%, demonstrating Klabin's positive reputation in the communities: 78.2% in Rio Negro; 78.4% in Paranaguá; 77.36% in Goiana and 74.3% in Angatuba.

**80,3% and  
81,7%**

were the acceptance rates of the survey captured in Paraná and Santa Catarina, respectively.

**New  
municipalities**

Paranaguá and Rio Negro, in Paraná, Goiana (PE) and Angatuba (SP) were included in the survey.

**Goals**

for the variable compensation of the Executive Board will also be linked to Klabin's acceptance index in the communities (as of 2022).



## Mitigation and engagement measures

One of the main issues raised by the communities, as a result of the Company's operations, is the dust generated by truck traffic in forest areas. The issue is monitored by the index of complaints per kilometer traveled, which has registered a reduction in recent years: 1.3 in 2021 versus 1.7 in 2020; in 2018, the indicator was 4.2.

This is an even more significant improvement when considering the expansion of the number of municipalities influenced by forestry activities as a result of the Company's growth: in 2018, there were 14 municipalities, representing 61.14 kilometers traveled within communities; in 2021, there were 39 municipalities and a total of 118 kilometers.

The results show that mitigation measures, such as wetting the roads, engaging with truck drivers who use the roads, and applying technologies for double surface treatment (TSD) of the soil, which leaves the road surface looking like an asphalt road, have been effective.

## Solid foundation for expansion

The implementation of major projects is preceded by an assessment of the socioeconomic situation of the region, with mapping of positive and negative impacts. As such, data is obtained for the adoption of social, economic, and environmental projects.

In Parana, where Klabin concentrates significant operations, such as a maritime terminal in the Port of Paranaguá, the Puma and the Puma II expansion project, the efforts undertaken on this front create a solid base of knowledge about the territory and active social programs. Based on this, the socioeconomic programs can be expanded and adapted to the reality of the municipalities.



*In 2021, Klabin continued to support municipalities in infrastructure and medical equipment, among other actions.*

## More than BRL 30 million in support of the fight against Covid-19

In 2021, Klabin continued to mobilize resources to help municipalities face the pandemic. The investments on this front covered infrastructure support, medical equipment, inputs for sanitization, and hiring health professionals to support the municipalities, among other actions. Between March 2020 and December 2021, the resources totaled BRL 30.99 million and were earmarked to help more than 30 municipalities, in ten states where Klabin is present. In the Campos Gerais region, in Paraná, the Company has maintained its participation as a representative of private entities in the Intersectorial Committee for Combating Covid-19, which brings together municipal and regional health departments, representatives of the municipal health council, and public and private hospitals.

See GRI indicators 203-2, 413-1, 413-2 and others related to the **Local development and community impact** material topic in the ESG Panel.

## Social investment platform

The social programs implemented or supported by Klabin are in line with its social investment platform, focused on four pillars of action: local development, citizenship, environmental education and culture. The following are highlights of the main initiatives on each front. See all programs [here](#).

### Local development

To boost the communities' capacities for planning and participative public management, Klabin invested in assisting the planning capacities of the cities, by providing specialized consulting services to support the preparation of the Multi-Year Plans (PPAs) for the priority municipalities, which are as follows: Telémaco Borba, Ortigueira, Imbaú, Curiúva, Reserva, Sapopema, Tibagi, Rio Negro and Paranaguá, in Paraná, and Lages, Otacílio Costa and Correia Pinto, in Santa Catarina. The Company considers the areas to be a priority, accounting for 100% of the goal established in the KSDGs. The municipalities in Paraná employed the Social Progress Index launched in 2021 for the planning, whose construction was supported by Klabin. The main advances of these initiatives and of the Matas Sociais [Social Forests] and Apiculture and Meliponiculture programs are shown below.

#### Family Farming Cooperative Center

In 2021, Klabin supported the creation of the Family Farming Cooperative Center of the Center-North of Paraná, formed by five partner cooperatives of the Matas Sociais program and almost 900 members from 34 municipalities in the state.

Headquartered in Telémaco Borba, the center was created with the purpose of joining forces for the production and commercialization of food, in search of new markets, competitive prices, exchange of experiences, and service optimization. Management is shared among the cooperatives, which make decisions to expand the presence of local producers in the market.



*Representatives of cooperatives*

## Klabin Semeando Educação [Klabin Sowing Education]

Created to contribute to improving the results of official indexes, such as the Basic Education Development Index (IDEB) and SDG 4 – Quality Education, Klabin's Semeando Educação program works with the continuous training of basic education teachers in Portuguese and mathematics and also supports the strengthening of school management, benefiting the municipal public network.

By 2021, the initiative had already extended the scope of its activities to 14 municipalities in Paraná, Santa Catarina, and Pernambuco, covering more than 200 municipal public schools, 1,218 education professionals (327 managers and 891 teachers), and about 22,000 students in the municipal education network. There is a growth prospect for other locations in 2022.



### Graduates with guaranteed internship

In December 2021, 34 graduates from the Forest Machinery Operations and Heavy Machinery Maintenance courses at the State Center of Professional and Agricultural Education of Ortigueira received their diplomas. The institution – the only technical school for mechanics and forestry machine operations in Latin America – is the result of a Klabin project developed in partnership with the State Government of Paraná and the City of Ortigueira, with the objective of becoming a benchmark in training professionals in these areas. All graduates were admitted to Klabin's Internship Program.

# Klabin and the Environment

This social investment front brings together environmental education programs, such as Klabin Caiubi, which had its 20-year anniversary in 2021, and initiatives to promote the circular economy, such as the Solid Waste Program and the 100% Circular Territory.

## Klabin Caiubi

Created in 2001 for the purpose of empowering teachers to disseminate environmental preservation concepts, the program includes the states of Paraná, Santa Catarina and Bahia. Marking its 20-year anniversary, Caiubi gained its own website in 2021 (<https://caiubi.klabin.com.br>), with information about its activities, schedule and results.

Driven by the Company's climate change agenda, Klabin's Caiubi for the Climate program was launched in 2021, initially focused on schools in the Parana municipalities of Telêmaco Borba, Imbaú and Ortigueira, with the purpose of guiding and encouraging institutions to measure greenhouse gas (GHG) emissions. To that end, presentations and visits to schools were promoted and the Climate Learning Journey began in 2022, with training to prepare a GHG emissions inventory.

## Solid Waste Program

The initiative, which has existed since 2012 and is conducted in partnership with the Caminhos do Tibagi Intermunicipal Consortium in six municipalities in Paraná, had its scope expanded in 2021 when it added the ViraSer Program, of the Gaia Social consultancy. Focused on recycling professionals, the new program aims to provide leadership development and production efficiency to cooperatives and associations, in addition to promoting environmental education and fairer commercialization, stimulating sales and increasing the workers' income.

- 165 recycling professionals benefited from the ViraSer Program.
- 63% was the increase in monthly income of the professionals with the initiative during the year 2021.
- Higher productivity tied to better health and safety conditions in the activities.
- More than BRL 3 million was the gross revenue of the five cooperatives covered by the program in 2021.
- 2,387 tons of recyclable materials were recovered in 2021, an increase of 54% compared to the volume recorded in 2020.



## 100% circular territory

In partnership with the innovation network Hub Incriveis and with the Heineken Group, Klabin began a project to transform the municipality of Telemaco Borba into the first 100% circular territory in Brazil. In this management model, most of the paper, glass, aluminum, metal, and plastic packaging is transformed, reused, and recycled instead of being sent to landfills. In addition to benefiting the environment, the initiative creates job opportunities and strengthens the local economy.

During the first phase of the project, in 2021, a detailed diagnosis was conducted, which showed that the municipality recycles only 12% packaging per year. Based on this scenario, the main problems and challenges of waste management in the territory were mapped, and paths and opportunities to maximize this potential were indicated. Due to the progress of the mayor's office's actions and Klabin's Solid Waste Program, strengthened in 2021 with the ViraSer Program, the municipality was chosen as a pilot for the project.

In February 2022, a Public Call was opened in order to attract companies, startups, NGOs, cooperation networks, municipal consortiums, and educational and research institutions to propose solutions that enable packaging circularity.

## Wood suppliers

The year 2021 was marked by Klabin's very expressive growth, which made it necessary to increase investment in partnerships with rural producers in order to guarantee the supply of wood to accompany production expansion. Rural producers have been the Company's partners in its expansion trajectory.

Currently, about 40% of all the wood used in the production process is acquired from third-party forests, partners in initiatives such as Plant with Klabin program or independent producers, encouraged by programs for qualification and guarantee of origin.

The maintenance of these partnerships reinforces the company's commitment to favor the use of certified wood, originating from sustainable processes, in addition to contributing to expanding the producers' income and strengthening the forest-based economy in the region.

### Guaranteed origin

Klabin maintains, together with its partners, the Forest Certification Program for Small and Medium-sized Rural Producers. The certificate is an affirmation that the timber producer operates with social and environmental responsibility and follows global forestry management standards.

The certification also adds value to the wood marketed by these producers, with benefits extending throughout the entire production chain. Klabin finances the process along with rural producers in Paraná and Santa Catarina, which have specialized consultants.

To guarantee the origin of the wood purchased from independent suppliers, who are not part of the Plant with Klabin Program (Forestry Partners), the Company maintains a product monitoring program. The Controlled Wood Program produces property assessments based on a specific methodology related to FSC® (FSC-C020628, FSC-C022516 e FSC-C023492) chain of custody certification, including aspects of economic management, environmental compliance and social impacts. This process is subject to annual maintenance audits conducted by Imaflora.

More than 112,000 hectares of total area of partner suppliers integrate the Certification Program in Paraná and more than 29,000 in Santa Catarina.

## Plant with Klabin

To ensure the quality and origin of the wood and, at the same time, to generate income for small independent producers, the company has maintained Plant with Klabin since 2020. The program was introduced in Paraná and extended to Santa Catarina in 2021. Small and medium-sized producers are invited to participate in the Company's expansion process through the cultivation of pine and eucalyptus. To that end, they are offered three types of contracting: exchange of inputs and services; exchange of seedlings; and price guarantee. In all of them, the producer receives free technical assistance and guaranteed purchase of the product. Since the program began in 2020, 83 partnerships have been signed with producers in the region.



Plant with Klabin: in Paraná since 2020 and now extended to Santa Catarina.

See indicators related to the Wood availability material topic in the [ESG Panel](#).

## Suppliers of products and services

Ensuring the sustainable life cycle of products also requires care in the choice of partners. In addition to guaranteeing the origin of the wood used in its own production, Klabin is committed to maintaining the sustainability of its entire supply chain. Therefore, the ESG evaluation criteria and indicators extend to suppliers of products and services as well. In 2020, 7,310 active suppliers, spread throughout Brazil, made up Klabin's supply chain.

The company maintains the Supplier Social and Corporate Responsibility Program, which, with the support of EcoVadis, is already in its third cycle. Klabin is recognized in the Platinum category, the institution's highest ESG rating, with the EcoVadis Sustainability Rating seal.

With a worldwide reputation in sustainable business classification, EcoVadis works on improving supply chain performance. Klabin was one of the first companies in Brazil to work with the institution, for the purpose of helping partners to evolve in processes related to the best sustainability practices. The EcoVadis evaluation follows strict criteria for measuring environmental preservation, respect for labor laws and human rights, ethical behavior, and sustainable procurement practices. Klabin seeks to support its suppliers in action plans.

As a supplier, Klabin is proud to have been recognized by EcoVadis, since the institution has developed the most precise methodology for evaluating sustainable practices in the value chain, the most valued today in the international market. This fact strengthens its responsibility in managing relevant ESG criteria. See more in [Recognition and Awards](#).

See indicators 102-9, 204-1, 308-2, 407-1, 408-1, 409-1, 414-2 and others related to [Social and environmental performance of suppliers](#) in the ESG Panel.

# Biodiversity

The conservation of the environment and biodiversity is part of Klabin's history and also its way of thinking about the future. The company believes that its operations, from the cultivation of wood in the forests, the raw material for production, to the conception and destination of the final product, only have a reason to exist if carried out in a sustainable way. Klabin is a differentiated and responsibly managed forest-based company, whose commitment to preserving the ecosystem where its plants are inserted and the areas of protection was assumed in the Klabin 2030 Agenda.

Also as part of this premise, bonds were issued in January 2021 linked to sustainability goals, the SLBs. The operation is associated with goals for reducing water consumption, waste disposal, and biodiversity, to be achieved by 2025 (see more in [Economic performance](#)).

## Responsible forest management

All the wood used in Klabin's production process comes from cultivated forests. The company is a pioneer in the adoption of mosaic forestry management, which mixes planted forests with conserved native forests. The technique allows the formation of ecological corridors that help the protection and circulation of animals, contributing to the preservation of fauna and flora, and to the conservation of water resources.



In 2021 alone, Klabin invested BRL 1.5 million in initiatives and projects related to the restoration of native forests and biodiversity conservation.



Klabin maintains 42% of its forest area allocated to the conservation and maintenance of biodiversity.



## Biodiversity Continuous Monitoring Program

The initiative seeks to verify the effects of forest management on the quantity, distribution, and behavior of the species and to adopt measures for the prevention and mitigation of damages to biodiversity, acting for its conservation. The program is held in Paraná, Santa Catarina and São Paulo.

In 2021, Klabin began to take part in the working groups of the National Action Plans (PAN) for the Conservation of Endangered Species, together with the Chico Mendes Institute for Biodiversity Conservation (ICMbio). The PAN is a management tool, built in a participatory manner, intended to plan and prioritize actions for the conservation of biodiversity and its natural environments.



851 fauna species have been identified in Klabin's forest areas



704 of these species have conservation status, 28 of which are threatened with extinction.



524 of which have conservation status and of these, 38 are threatened with extinction.

\*December 2021 data

## Harpia Project

Technology and innovation have been Klabin's great allies in the biodiversity monitoring actions. The Harpia Project began in 2021, a journey of experimentation in monitoring fauna using artificial intelligence. By means of monitoring cameras, the fauna species can be identified by images, and the birds can even be identified by their songs. With the use of a new technology, DNA traces that the organisms leave in the environment are also being monitored, showing whether they are or were present there. Thus, it is possible to create a map of species and their location, thus promoting conservation actions focused on those threatened with extinction.

## Certification guarantee

Klabin's entire forest management process undergoes audits in the forest units. The company has been certified by the FSC (FSC-C020628, FSC-C022516 e FSC-C023492). since 1998. An environmental management system was instituted to fulfill the principles and criteria of the certification, which foresees annual internal and external audits conducted by Imaflora. See more in Unprecedented certifications.

## Conservation units

Klabin has 265,000 hectares of conserved areas. Of this area, almost 9,000 hectares are divided into two Natural Heritage Private Reserves (RPPNs): one in Paraná and another in Santa Catarina, both dedicated exclusively to scientific studies, environmental protection, and preservation of water resources, in remaining areas of the Atlantic Forest.



*More than 90% of the park area is made up of conserved native forest.*

### **Klabin Ecological Park**

Since 1979, Klabin has maintained an ecological park at Fazenda Monte Alegre, in Paraná. Located in an area measuring 9,852 hectares, 91.6% of which is made up of areas of conserved native forest, it houses approximately 180 animals of 50 different species, 13 of which are threatened with extinction at the state level. Animals kept under human care are housed in enclosures that replicate their habitat. The park also has hospitalization areas, a veterinary clinic, a kitchen for preparing food for the animals, an administrative office, accommodations for the researchers and an ecological trail, in addition to a Nature Interpretation Center. Activities conducted at the Klabin Ecological Park include breeding programs for endangered species, rescue, rehabilitation and release actions for wild animals, caring for animals that cannot return to the wild, scientific research and environmental education activities.

### **Road ecology**

The biodiversity targets of the 2030 Agenda assumed with society include the reduction of the percentage of fauna being run over, mainly in the regions of Klabin's forestry operations, starting in areas close to Fazenda Monte Alegre, in Paraná.

The first step is the definition, location and mileage of the road network to be monitored. Other initiatives are the developing partnership with the "Flags and Highways" project and participation in the III Ibero-American Congress on Biodiversity and Road Infrastructure to learn about scientific research in the area.

At the end of 2021, Klabin started the Road Ecology Program with the purpose of promoting awareness and education actions on highways. A study was also conducted to better understand the occurrences and construction began on an app for the Company's employees to monitor animals in situations of risk of being run over.

See GRI indicators 304-1, 304-2, 304-3, 304-4, 307-1 and others related to **Biodiversity** in the ESG Panel.



Prosperity for  
people

## Cultural evolution

In another challenging year, 2021 put the resilience of all the company's employees to the test. Maintaining the pace of the growth cycle that Klabin has been forging in recent years, while simultaneously generating consistent results, such as those presented in 2021, was only possible because the Company is supported by a solid organizational culture. Several moves have been made in this field and several initiatives were developed throughout the year. All this helped confirm that the efforts related to Klabin's culture are being applied in the right direction.

The **Culture Thermometer** is one of these initiatives: more than 2,000 employees were heard in the survey, in individual consultations and focus groups, to understand which aspects progressed and which presented opportunities for improvement. Based on the perceptions captured, some culture drivers and organizational competencies were reviewed and the following prevailed, which will be prioritized in the next cycle: collaboration, autonomy, good conversations, agility, safety, meritocracy/recognition, and diversity.



Online survey with 2,000+ employees.



Points of emphasis worked in 22 focus groups in the units.



80% of people perceive the Company's cultural evolution.



Safety and diversity were perceived as the attributes that most evolved.

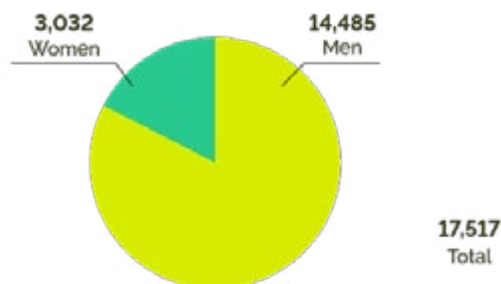


Meritocracy is one of the culture attributes with opportunity for improvement.



Review of the organizational culture drivers.

## Employee profile in 2021



## Employee experience

Focused on constantly improving the work experience of each employee, a survey was applied at the end of 2020, which pointed out opportunities for improvement, generating more than 30 actions implemented in 2021 in several processes: integration, internal recruitment, health and welfare, career and development, recognition and meritocracy. In 2021, a survey was conducted, with a result of 81 points of overall favorability.

## Parental leave

As a supporter of the Empresa Cidadã Program since 2019, Klabin offers parental leave to all genders, including cases of same-sex relationships and adoption. In 2021, 563 men and 92 women took advantage of the benefit at the Company. Return-to-work rates after the end of leave were 100% among men and 97.8% among women; the retention rates, which represent the retention in the company for at least 12 months after returning to work, were 93.61% and 94.57%, respectively, among men and women. These indicators are important references for people management at Klabin.

## Human capital development

One of the organizational culture drivers is the Klabin Business School (ENK), which aims to develop accessible, relevant and innovative learning experiences for employees, favoring self-development and excellence in performance, in order to boost the business strategy.

Training is built to meet business needs, guide career development, and support knowledge management in the company. The ENK Portal, a distance learning platform, features courses, videos, articles, seminars, posts, knowledge tracks, and polls, with content produced by experts and renowned institutions. Specific programs are designed or adapted for Klabin's operational and commercial teams.



*We are committed to employee engagement and continuous development. Photo: Klabin's Archive*

ENK Portal totaled 9,000 employees trained in 2021.

**Over 16,000**

users on the ENK Portal, in all units

**Over 113,000**

hours of navigation and over 200  
courses launched in 2021

**About  
120,000**

courses and videos completed in 2021

### Leadership Journey

In 2021, the Leadership Journey – an ENK track focused on preparing leaders for the Company's current and future challenges – was strengthened with the inclusion of new discussion agendas. The work included topics related to business, people management, safety, and emotional health. The Business Strategy topic was developed using Rumos Digital, which aims to enable the understanding of Klabin's integrated business model, the market vision, and perspectives for the future. The approach chosen was a business game with simulations through artificial intelligence.

In addition to the Managers Convention, which has been held since 2017, the first online edition of the Coordinators and Specialists Convention was held, with the goal of fostering integration and alignment to Klabin's strategy and positioning for the future, making them influential in their teams to achieve the business objectives.

The 1st Career Week was also launched during the period, an action with the objective of clarifying the roles and responsibilities of the leader, the employee, and the organization, in addition to reinforcing the role of the employees in managing their own careers and encouraging self-development so that they are always prepared for new challenges. Six actions were offered, led by renowned speakers from the market and internal multipliers, with the participation of about 2,500 employees and a 94% satisfaction rate.

○ More than 2,400 hours were dedicated to the Leadership Journey training.

○ 490 managers were trained.

○ About 2,500 employees participated in the 1st Career Week.

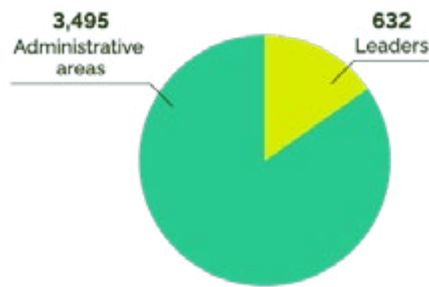
## Performance cycle

In December 2021, Performance Review process for the 2021/2022 cycle began, which already reflects the revised organizational culture and competence drivers.

During the cycle, the Company's successors are mapped out during an annual Performance Review process focused on continuous development and aimed at the occupants of administrative and leadership positions. The procedure encompasses the following stages: self-assessment, management review, calibration committees, feedback, and Individual Development Plan (IDP).

An evaluation of functional competencies was also inserted for the commercial area team. In addition to feeding the organization's pipeline, this process reinforces the protagonism of each employee in their career and encourages continuous learning.

## 4,127 employees reviewed in 2021



## Succession

The succession process for Board positions in 2021 is worth mentioning. Currently, 89% of the board of directors consists of internal recruits and, of the ten positions opened last year for directors, 75% were filled by managers who participated in the Klabin's Development Acceleration Program. Launched in 2019, the program has 22 participants mapped as potential successors to the Executive Board, as a result of the Performance Cycle.

## Florescer Program

The Florescer Program was launched in 2021, which aims to accelerate the development of successors for coordination positions. It focuses on specialists, supervisors, engineers, and analysts in Production, Maintenance, Quality, and related areas, with emphasis on three fronts: business, technical (with project application), and behavioral. The program has mentoring from internal managers.

Two classes were held, with a total of 40 participants, more than 50% of which were women, with a satisfaction rate of more than 93%. Eight continuous improvement projects were implemented, in line with the Superar Program methodology, being conducted by professionals from different units and businesses. In addition, five program participants were promoted to the coordinating position.

○ In 2021, 240 promotions and 120 hirings were made between specialists and occupants of management and supervisory positions.

---

○ 67% was the internal utilization rate for these vacancies.

---

## Long-Term Incentive (LTI)

---

Klabin's Compensation Policy, periodically updated, provides the guidelines on the subject, such as alignment with the Company's strategy and recognition of high-performance professionals, stimulating the culture of meritocracy.

In 2022, the Long Term Variable Compensation program, also known as the Long-Term Incentive (LTI), was extended to all employees. It covers the beneficiary's right to convert part of their LTI into the acquisition of Klabin Units; in exchange, the Company matches the investment, effectively doubling its value. After three years, the employee receives the shares and chooses whether to keep them or trade them on the Stock Exchange.

With an intense communication campaign to generate knowledge on the topic and training focused on financial education, the program, which is a reference in the market, obtained 30% adhesion, representing an excellent result.

See GRI indicators 102-8, 102-35, 102-36, 102-38, 102-41, 201-3, 202-1, 202-2, 401-1 and 401-3 and others related to **Engagement of professionals** in the ESG Panel.

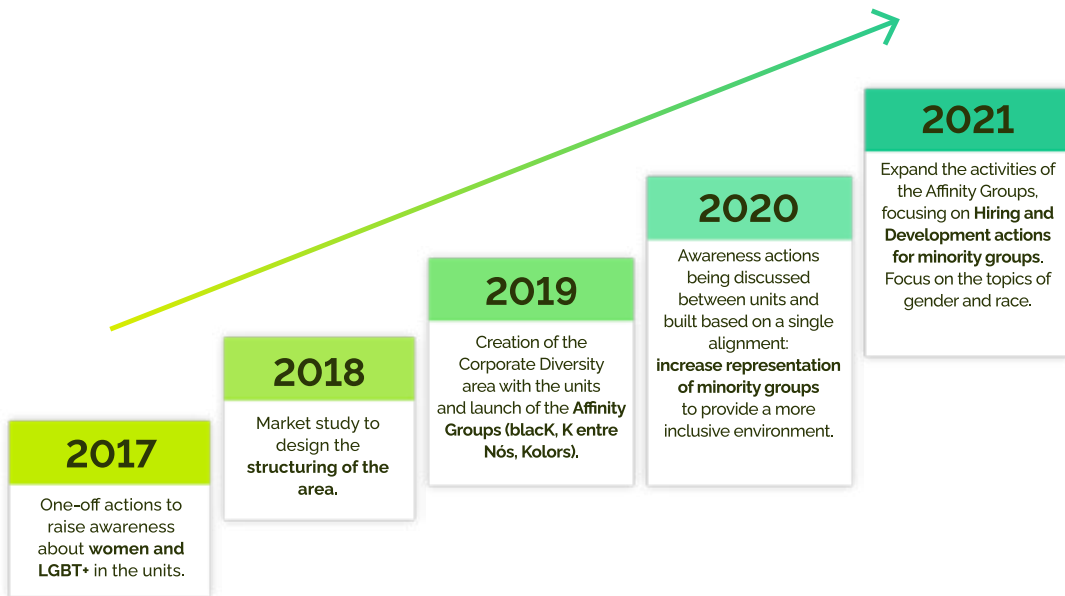
## Diversity and inclusion

Klabin believes that differences are what lead to growth, stimulate innovation, foster team engagement and provide diversified points of view, which is essential for decision making. That is why the company is promoting an environment increasingly focused on respect, equity, diversity, and inclusion, where everyone feels comfortable to exercise their individuality.

Diversity has been a priority topic in the Company since 2017, when actions were created to raise awareness, focused mainly on gender equity and respect for LGBTQIA+ people in the company. Diversity and inclusion were positively evaluated among the employees who participated in the Culture Thermometer survey (learn more in **Cultural Evolution**). Although the company recognizes that progress is still needed on these issues, the result shows that the initiatives and programs that have been developed are already strongly influencing the internal public.



## Evolution of diversity at Klabin



## Governance structure on diversity

Offering opportunities for all, in an increasingly inclusive work environment, is one of the commitments expressed in the Diversity and Employment Promotion and Talent Attraction Policy, with the alignment of purpose and the creation of a governance structure for the topic.

### Corporate Area

Responsible for building corporate programs and aligning strategy throughout the Company.

### Diversity Committee

Comprised of representatives from all units, responsible for the development and support of local actions.

### Affinity Groups

K entre Nós (actions aimed at gender equity), Black (race and ethnicity issues), Kolors (LGBTQIA+ theme), MultiKlabin (discussion on the intergenerational relationship) and Memoh Klabin (gender, with a proposal to reflect on the effects of masculinity). A group was also created with representatives from different areas to address the issue of People with Disabilities (PwDs). In 2021, the percentage of PwDs in the Company's staff was 2.66%.

### People Commission

Made up of senior leadership, with quarterly meetings, responsible for discussions and recommendations on the subject.

### Reputation and Brand Commission

Responsible for institutional positioning guidelines on the subject.



### Highlight

Achieving greater gender equity in the Company, with more women in leadership positions, is one of the goals set out in the KSDGs. In 2021, the percentage of women on the workforce was 17%, up three percentage points from 2020, and the participation of women in leadership rose from 17% in 2020 to 21% in 2021. These indexes show progress, but the company is aware that it still has a long way to go to reach the desired number, which is 30% female leaders at Klabin by 2030.

### Initiatives

In 2021, 75% of the directors had their variable compensation tied to performance in diversity indicators. In addition to them, 46 members of management (in specialist, coordinator, and manager positions, representing 7% of the total) linked their compensation to Klabin's diversity goals.

Klabin has taken on two new external commitments and joined the LGBTI+ Rights and Companies Forum, with a commitment to respect and promote LGBTQIA+ human rights in the Brazilian business environment and in society. It is also part of the **Movement for Racial Equality (MOVER)**, a coalition among companies that seeks to be an effective tool to fight racism, with the challenge of reaching 2030 with 10,000 new leadership positions, chosen among people who belong to diversity groups.

The Company encourages its employees to fill out the race self-declaration, so that it can get to know its staff profile better, understand the differences, and evaluate and adapt the policies and benefits currently in place.

Integra Klabin is an internship program aimed at low-income university students. In 2021, 41 young people who participated in it were hired.

Another outstanding initiative is Diversity Week, which is held annually and contributes to the internal debate on the matter, involving employees in reflections on the exercise of respect and tolerance. Throughout the year, other opportunities to involve and engage our employees are taken advantage of. Thus, dates such as International Women's Day, Black Awareness Day and International LGBTQIA+ Pride Day are moments of reinforcement to encourage equity and respect for differences.

Topics addressed in communication initiatives included moral harassment, whose motto was the phrase "Don't be silent!". In this context, training and conversation circles were held in all units and a new flow for handling complaints was implemented.

See the indicators related to **Diversity** in the ESG Dashboard.

## Health in times of the pandemic

Once again, flexibility, agility, and collaboration were put to use in another year challenged by the Covid-19 pandemic. Health protocols were maintained, but concern about employees increased and was not restricted to care regarding the spread of the coronavirus.

In this scenario, the Company's emphasis on the employees' mental health and on the balance between personal and professional life was important, aspects that have been focused on since the beginning of the pandemic in the Living Well Program, through various actions developed in the Physical Health, Mental Health, and Social Health pillars. Leadership skills were broadened so they can quickly be put into practice while caring for their own mental health and that of their teams. Access to the free online psychotherapy platform was extended from employees to their dependents and several conversation circles were also held, in which listening spaces were opened and several topics were discussed, including financial health. Klabin made all its support channels available to employees.

The Health, Care and Well-Being Week was held in an online format, in all units, with workshops and webinars given by guests and focused on self-care, disease prevention, and financial health. The event included more than 1,700 participants.



*We value good practices and daily reinforce our commitment to the health and safety of employees. Photo: Klabin's Archive*

## Workplace safety

Safety is one of the necessary foundations for Klabin's sustainable growth and was one of the aspects recognized in the internal Culture Thermometer survey (see **Cultural evolution**) as a Company value. The company's Occupational Health and Safety Management System (SGSSO) is guided by ISO 45000 in all manufacturing units and in the forestry unit. Its guidelines and procedures are focused on loss prevention and on continuous improvement of processes to preserve people's lives, health, and physical integrity. This system, supported by the diffusion of the health and safety culture, relies on the partnership of the leadership as an essential factor to disseminate three fundamentals: visible commitment, line responsibility, and operational discipline.

In 2021, the work for strengthening and consolidating the SGSSO continued, with actions aimed at continuous improvement guided by the PDCA methodology (Plan, Do, Check, Act) in the standards, models, and guidelines that are more consistent and adherent to the business.

Klabin concentrated its focus on the Critical Activity Requirement (RAC) of power blockage, because it understands that this is one of the main issues related to the history of potentially serious and fatal occurrences. Also in 2021, the project and subsequent start-up of Paper Machine 27 (MP27) at the Puma Unit represented a major challenge for maintaining a safe and protected work environment for a significant contingent of own and contracted employees. In addition, since Klabin is in the expansion phase of the forestry business, there was full operation of the packaging units acquired in October 2020, which reflected in an increase of manhours of risk exposure.

### Indicators

---

Even when faced with so many challenges, the Company achieved an Overall Frequency Rate (TFG) of 8.23, a 23% reduction from the previous year, this number refers to a reduction of 21 accidents between the years 2020 and 2021, even with an increase of 12 million hours of exposure to risk for the same period. This rate is calculated taking into account the number of accidents per million man-hours of exposure to risk, in a given period. A sustainable reduction in the TFG signals the consistency of the company's work in consolidating its Management System, resulting in increasingly safer operations with a focus on the identification and risk management of critical activities, employee training, technological investments, continuous improvement of safety tools, and resolution of reported deviations.

Another indicator, however, is still cause for concern to the company. Even with tireless work on safety culture and investments in initiatives and tools, there were two fatalities in the company's operations in 2021. Klabin deeply regrets this fact. It places the Company in a state of alert, mobilizing the attention of the entire operations area to issues such as Process Safety and Energy Blocking, which will continue to be the focus of the company's work in the coming years. The Company also pursues its purpose of providing safer work environments for employees, with the least possible impact on people's lives. The theme is treated as a target in KSDGs of the Klabin 2030 Agenda.

On Work Safety, also see: **Message from the Board**.

## Pillars of Occupational Health and Safety Management

### Facilities

Ensure equipment safety and reliability. Improve and maintain the work environment offered to professionals.

### Risk

Continuously improve how safety is handled in the company's routine. Keep a critical eye on accident prevention and mitigation procedures by creating and reviewing policies, guidelines and requirements.

### People

Value good practices and encourage employees to care for one another. Train them on rules and procedures, in addition to bringing leaders closer to the routine.

## 2021 Highlights

### I BLOCK ACCIDENTS:

The Energy Blocking topic was addressed in a communication campaign which, focused on various audiences, extended throughout the year and achieved the goal of promoting awareness, significantly improving the quality of conversations among the operational teams, and mobilizing the hiring of business targets.

### RELATO DE SEGURANÇA [SAFETY REPORT]:

The tool is a WebApp available to own and contracted employees, aiming to promote protagonism in safety, allowing the employees themselves to intervene in unsafe situations or recognize safe behaviors. In 2021, more than 91,000 records were resolved, which means more participation in risk identification.

### SEGURANÇA EM FOCO [FOCUS ON SAFETY]:

This tool was reformulated and deployed and is now available in the application gallery of the My Klabin portal. It supports the leadership in the observation exercise and in the conversations for understanding the reality of the front line. It addresses several topics, constituting an important channel for the recognition of safe practices in operations.

### EPI FÁCIL [EASY PPE]

The application, which has been deployed in all units, consists of a WebApp that ensures more autonomy for the user and efficiency in the control, cost management of the flow of personal protective equipment (PPE) delivery and record cards (meeting legal requirements) for 100% of own employees and temporary workers. In 2021, a pilot project began for PPE delivery machines (Vending Machine) at the Angatuba and Monte Alegre units, aiming to further facilitate the interface with employees.

### SAFETY IN LOGISTICS OPERATIONS

The unified Safety Committee was structured in logistics operations, with interaction and direct participation of our contractors. Progress was also recorded in the Sustainable KM Recognition program, with awards for drivers who presented the best safety performance.

### BE A SAFETY LEADER

The 2nd cycle of the safety module within the Being a Leader Program was promoted in an online format, targeting supervisors and operational leaders. The program is currently being updated for the beginning of the next cycle.

## Hazard and Risk Management

In 2021, the migration from Operational Risk Analysis (ORA) to Hazard and Risk Management in Occupational Safety and Health was continued. With the full implementation of Hazard and Risk management, which is guided by ISO 45001:2018, the expectation is to improve health and safety-related governance in the Company, minimize losses, and make the response to change more effective, protecting employees in proportion to the growth of the company, among other benefits.

## Contract management program

Improvements to the Performance Assessment Program for contracted companies were continued, with the objective of attuning third-party companies to Klabin's safety practices in an active and preventive way. The results can already be seen in the significant reduction in frequency and severity rates among contractors.

## What still challenges Klabin

The evolution of the safety culture at Klabin is one of the aspects still considered challenging. In 2021, the safety culture procedure was prepared and disseminated throughout the Company, aimed at guiding the diagnosis, calibration, and action plans for safety culture evolution. After this review, based on the standardized criteria of the Hearts and Minds (H&M) methodology, the Company understands that its safety culture is on an evolutionary journey.

Plans for 2022 include performing a culture diagnosis on the units acquired in 2020 and follow-up on the action plans focused on the safety culture drivers in the business units.

## Next steps

**Process Safety:** from a diagnosis to survey opportunities for improvement in its structure, Klabin promoted benchmarking with the main Brazilian and multinational companies that employ best practices in Process Safety and invested in an exclusive area within the Corporate Safety Management that will operate as of 2022.

**Life Protection Policy:** because it understands that safety is everyone's responsibility, Klabin, following its cultural evolution plan, has begun discussions to enable the implementation of a Corporate Life Protection Policy, the objective of which will be to nurture a just culture that cares for both the well-being of employees and for the business strategy at the same time, transforming failures into learning that can drive safer processes and activities for all, reinforcing intolerance of unsafe behavior.

See indicators 102-7, 403-1, 403-2, 403-3, 403-7, 403-8, 403-9 and 403-10 and others related to the **Occupational health and safety** topic in the ESG Panel.



# Technology and innovation

# Research Development and Innovation

Klabin's Research and Development + Innovation (R&D+I) front works on perfecting practices and processes focused on improving the performance of its forests and production processes; on developing multiple-use forest-based products that are renewable, recyclable, and biodegradable; and on managing interference throughout the production chain.

With about 0.5% of its revenues allocated to investments in R&D+I, the company maintains in Telêmaco Borba (PR), the Technology Center and the Forestry Research Center, structures that operate in **five research routes**: development of the forest base, pulp development, paper lines, new forestry-based technologies, and reduction of environmental impacts.

As support for the Company's growth cycle, the New Business Directorate was created in 2021, which receives support from the R&D+I area for the anticipation of trends and technologies. More information in **Corporate Governance**.

## Forest development

Forests are the basis of Klabin's products today and in the future. Hence the company's expansion strategy is directly linked both to research and development projects for the improvement of its main raw material and to forest productivity. The Company is active in forest expansion processes, which are evaluated from the R&D standpoint to reach the productive potential of the acquired areas.

In 2021, advances were made with projects aimed at the genetic improvement of pine and eucalyptus and in clone development. In addition, new weather and climate monitoring stations were installed in areas where the company operates in Paraná, and the installation of stations in Santa Catarina is planned for 2022. The company's monitoring level has increased significantly.



### GENETIC IMPROVEMENT

A total of 230,000 eucalyptus seedlings and 35,000 pine seedlings were allocated to genetic improvement and cloning projects.



### CLONE PATENT

Protection for another clone (patent) was obtained from the Ministry of Agriculture, totaling 14 protected clones for exclusive use by Klabin in recent years.



### INCREASED PRODUCTIVITY

In 2021, five new clones were recommended for operational plantations, which have 21% higher productivity compared to the existing forest base.



### MONITORING

Four more weather stations were installed, totaling 36 stations for climate monitoring and weather forecasting in Paraná.

See indicators related to the **Forest yield** material topic in the ESG Panel.



## Biological pest control

Aware of the influence of climate change on forests, Klabin developed a pilot project in 2021 to monitor pests in 50,000 hectares of forests, which may result in savings of BRL 2.5 million in pest control activities. Company experts identified, in a pioneering way, two types of insects that are natural enemies of pests, representing an important biological control agent for the forest-based industry as a whole. These insects are in the preserved native forests and Klabin's mosaic forest management model allows the interaction of insects that are natural enemies of pests, increasing control.

## Automatic truck cleaning

In order to increase the productivity and safety of the drivers who work at the Parana Forestry Unit, Klabin, in partnership with the company Aeroville, developed a bark blower for cleaning the body of the wood transportation trucks. Inspired by a system for train cars in Finland, the equipment, installed at the Puma Unit's wood yards, works with two electric motors, which are activated by sensors that detect the arrival of the vehicle, thus producing a strong blast of air. The system reduces the body cleaning time by up to 70%, since it eliminates the manual process. It also guarantees more safety for the driver, who, by not having to climb on the body, avoids exposure to the risk of falling or coming into contact with venomous animals.

## Multiple uses of wood

Studies for multiple uses of wood have led Klabin to find a new application, under development, for microfibrillated cellulose (MFC), which may eventually replace non-renewable irrigation additives (for example, those derived from petroleum). MFC helps to retain water near the seedling, with slower release, increasing its wet time. It also has the capacity to replace 100% of the traditional irrigation additives, which are widely used during periods of drought. The solution thus performs the same function as synthetic additives that alter water viscosity.

Other research proposes the use of the co-products generated in the recovery cycle of the kraft process. The dregs (inorganic residues from the chemical recovery stage in the pulp production process) are now incorporated into the production of bricks, in a joint action with partners in Paraná. The initiative contributed to efforts to reduce to zero waste sent to landfills and to advances towards a circular economy.

Four new types of lignin were developed at the Technology Center, and are now part of Klabin's kraft lignin portfolio: dry and wet eucalyptus kraft lignin, dry and wet eucalyptus/pine kraft lignin mix, in addition to the already consolidated dry/wet pine lignin.

In 2021, there was also evolution in research on the use of wood extracts and forest residues, forming "green fuels" – crude **tall oil** and **bio-oil** – in order to take advantage of 100% of the forest potential.

See indicators related to the **Multiple uses of wood** material topic in the ESG Panel.

## Advances in barrier development

The search for natural and biodegradable barriers – to water, grease, steam and oxygen, for example – represents one of the main research fronts at Klabin and adds even more functionality to paper and paper packaging. Paper presents characteristics such as mechanical strength and surface quality, and the development of functional barriers expands the use of a sustainable material, in line with the growing demands of the market and society.

In 2021, several tests were conducted at the Monte Alegre Unit on the application of a barrier on paperboard, reinforcing opportunities to expand the company's portfolio, based on the microfibrillated cellulose (MFC) pilot-plant. Industrial tests were also performed for the development of new papers and boards, with properties different from those currently offered in the market.

## Highlights on new products

### Eukaliner®

Produced on the new Paper Machine 27, the Eukaliner® is the world's first kraftliner made exclusively from eucalyptus fiber, strengthening Klabin's renewable product portfolio. It provides better structure and more resistance to corrugated cardboard packaging, with less energy use in the corrugators, in addition to allowing for higher printing quality and the possibility of weight reduction. The use of eucalyptus fiber in Kraftliner requires smaller planted areas to sustain its production, when compared to the traditional hardwood product.

### Ecolayer

As part of the Company's commitment to waste reduction, Ecolayer was launched, a sackraft packaging with barrier application, which eliminates the use of plastic film and contributes to the circular economy, in addition to reducing environmental impacts. The product initially serves the civil construction and agricultural fertilizer segments.

### Klafold GB® – Grease Barrier

It is a paperboard with an application capable of providing a barrier to water, vapor, and grease. The innovation allows the production of more sustainable packaging by eliminating the use of additional materials or the application of complementary coatings to the paperboard. It also facilitates the recovery of the fibers in the recycling process.

## Customer focus

Understanding the needs of customers and following the growing demand for sustainable packaging, which provide practicality and waste reduction, is a practice that directs Klabin's performance towards the development of products and new markets. That is why, over the years, innovations are focused on the **circular economy**, **low-carbon technologies** and process improvement.

In 2021, the Company consolidated the processes and methodology of the new business and new products area. Based on immersion studies about customers' problems regarding the ideal packaging for their products, short, medium, and long-term challenges were established and solutions were developed that were in tune with their needs and capable of differentiating them in the market.

The delivery involves not only the prototype, but the product concept as well, always applicable to the market, and everything behind the packaging (CO<sub>2</sub> balance, biodegradability, among other attributes). After the prototype, industrial tests are performed and the packaging's acceptance in the market is evaluated – focusing on Klabin's customer's customer.



### Packaging Technology Center

Reinforcing its partnership with customers through product co-creation processes, the Company invested in the creation of the Packaging Technology Center, an experience center located at the Jundiaí Tijuco Preto Unit (SP). The location, open to all areas of Klabin, has a co-creation room, a videoconference room, equipment for developing prototypes, and a product showroom. The inauguration is scheduled for the second half of 2022.

### Packaging is cool

Under the title "Packaging is cool", a movement that seeks to develop sustainable packaging, Klabin promoted a program that involved several of its areas and customers in order to develop innovative solutions based on paper, a renewable, biodegradable, and recyclable material, in yet another co-creation process. In 2021, there were 16 editions of "Packaging is cool", all virtual.

## Packaging originated from co-creation



*Waterproofing additive packaging adds sustainability attributes*

The new packaging for Vedacit, a waterproofing additive for concrete and mortar, developed throughout 2021 and launched in January 2022, substantially reduces the amount of plastic material and adds sustainability attributes, such as the reduction of CO2 emissions, waste generation, and energy consumption in production. Made of corrugated board, it is strong enough to be stacked; the support of handles makes it easy to carry.

Other product originated from co-creation is the recyclable and biodegradable packaging developed in corrugated board exclusively for Tibii, an animal nutrition company, gained Braille printing. The technology, a pioneer for this type of printing, was developed by Klabin, with validation by the Brazilian Association for Assistance to the Visually Impaired (Laramara).

More information in [Recognition and Awards](#).

## Innovation management

Through innovation, Klabin maintains contact with a global network of ecosystems and partners, made up of startups, organizations, universities, associations, among others, in order to strengthen its initiatives on this front. The Company has been following guidelines that govern innovation in a transversal way since 2018, that is, the topic is part of the daily activities of all areas, as an organic process.

In 2021, based on the identification of maturity, engagement, and progress made in three years, the strategy on this front was revised. Meetings were held with the entire Executive Board, benchmarking and workshops with directors of the business units, which resulted in the construction of an innovation pipeline for each unit, with prioritization of projects, definition of responsibilities, indicators, and executives' goals linked to the projects.

### Klabin Superar

The Klabin Superar seal, co-created in a process that involved continuous improvement teams from several areas of the company, is an example of transformation through innovation. The seal awards and shares the best practices of the Klabin Superar program, which translates the "Klabin way of working" in the pursuit of excellent results. It was built considering certification processes established in the market, with the addition of elements relevant to Klabin in ESG aspects.

### Focus on new business

In the process of reviewing the strategy on this front, Klabin redefined the innovation pillars, which went from five to three: the pillars of People & Sustainability and Operational Excellence were kept, and New Solutions was added. The new pillar reinforces the offer of solutions in sustainable, renewable, and biodegradable products that inspire the end consumer, paving the way to new markets, such as the use of microfibrillated cellulose (MFC) as a thickener and emulsifier in the preparation of alcohol gels. The creation of the New Business Directorate, at the end of 2021, with a focus on bioproducts, is evidence of the evolution of innovation at Klabin.

All of Klabin's innovation programs are on the [Inova Klabin](#) website.

**more than  
2,000**

startups mapped since 2018

**more than  
300**

pitch days held until 2021

**more than  
2,500**

participants in Inova Klabin online in  
2021

## R&D partners in Brazil and abroad

- Aria do Brasil

---

- Associação Brasileira Técnica de Celulose e Papel (ABTCP)

---

- Central American and Mexico Coniferous Resources Cooperative

---

- Comitê de Produtores – Tappi Nano

---

- Cooperativa Central America and Mexico Coniferous Resources (Camcore), Carolina do Norte (EUA)

---

- Embrapa Florestas

---

- Escola Superior de Agricultura Luiz de Queiroz (Esalq)

---

- Forest Productivity Cooperative (FPC)

---

- Instituto de Pesquisas e Estudos Florestais (IPEF)

---

- Melodea

---

- North Carolina State University (NCSU)

---

- Oregon State University

---

- Pine Chemicals International

---

- Research Institutes of Sweden (RISE)

---

- Serviço Nacional de Aprendizagem Industrial (Senai)

---

- Sociedade de Investigações Florestais (SIF)

---

- Unicamp

---

- Universidade de Karlstad (Suécia)

---

- Universidade de Leuven (Bélgica)

---

- Universidade de Toronto

---

- Universidade do Estado de Santa Catarina

---

- Universidade Estadual de Ponta Grossa

---

- Universidade Federal de Campina Grande

---

-  Universidade Federal de Lavras

---

  -  Universidade Federal de Santa Maria

---

  -  Universidade Federal de Uberlândia

---

  -  Universidade Federal de Viçosa

---

  -  Universidade Federal do Espírito Santo

---

  -  Universidade Federal do Paraná

---

  -  Universidade Federal do Rio de Janeiro

---

  -  VTT Technical Research Centre of Finland
- 

## Information security and technology

Technological updating, which is one of the major challenges in Klabin's growth trajectory, became even more challenging to meet an increasingly sustainable process chain and also the adaptations required with the Covid-19 pandemic, which required technology solutions, according to the needs of the business.

For cybersecurity, Klabin's value proposal is to ensure technological capabilities strengthened and suited to protect individuals and institutions with which it relates, considering the new challenges arising from the development of artificial intelligence. The topic integrates the risk vision, and all initiatives are guided by the IEC:62446, ISO27001, NIST, and CIS standards, responsible for identifying, assessing, and reporting legal and regulatory, IT and cyber security risks for information assets. The Company has a management responsible for cyber security, which also supports the business objectives and promotes constant training of employees on security posture and good practices.

### General Data Protection Act (LGPD)

---

Klabin met the requirements of the General Data Protection Act by setting up a multidisciplinary agenda, reviewing processes, and creating new controls and internal awareness campaigns.

See the indicators related to the **Information security** material topic in the ESG Panel.



# Glossary



**Biomass:** all organic matter of plant or animal origin used for the purpose of producing energy. a black liquid obtained through the pyrolysis process, in which biomass is subjected to high temperatures in an isolated environment with little or no oxygen. It is mainly used as a fuel for heating and the generation of electrical energy.

**Bio-oil:** a black liquid obtained through the pyrolysis process, in which biomass is subjected to high temperatures in an isolated environment with little or no oxygen. It is mainly used as a fuel for heating and the generation of electrical energy.

**BOD<sub>5</sub>:** acronym for biochemical oxygen demand. This is a standard test, performed at a constant temperature and during a five-day incubation period, to measure the oxygen consumption in water. It is measured by the difference of the amount of dissolved oxygen (DO) found before and after the incubation period.

**Brazilian Association of Business Communication (Aberje):** the main national reference center in the production and dissemination of knowledge and business communication practices.

**Brazilian GHG Protocol Program:** created in 2008, it is responsible for adapting the GHG Protocol method to the Brazilian context and for developing calculation tools for greenhouse gas emission estimates.

**CDP:** international non-profit organization that analyzes and recognizes the efforts of companies worldwide to manage the environmental impacts of their activities.

**CFO Task Force:** group of chief financial officers from 60 companies that are part of the UN Global Compact movement. The group committed to investing, over the next five years, more than USD 500 billion in the SDGs (Sustainable Development Goals) to promote a collective work of greater integration of these SDGs both within their own organizations and outside of them, seeking to attract new partners to the initiative.

**Circular economy:** concept that associates economic development with a better use of natural resources, which are no longer only exploited and/or discarded, but reused in a new cycle. Thus, everything that is extracted from nature is reintegrated into the ecosystem without generating liabilities.

**Climatology:** the scientific study of climate, scientifically defined as weather conditions calculated over a period of time.

**COD:** acronym for chemical oxygen demand. This is an indispensable parameter for studies on sanitary sewage and industrial effluents. It assesses the amount of dissolved oxygen (DO) consumed in an acid medium that leads to the degradation of organic matter.

**CO<sub>2</sub>eq:** carbon dioxide equivalent is the expression for converting all greenhouse gases as if they were CO<sub>2</sub>. It is the result of multiplying the tons of GHG emissions by their global warming potential. Crude

**Tall Oil (CTO)/ Tall oil:** crude tall oil or simply tall oil is a raw vegetable oil (crude) – unrefined – produced after the acidulation of the black liquor soap (pine extractive) present in the chemical recovery process of the pulp and paper industries. Because it is a renewable forest-based oil, this ingredient can replace other petroleum bases, making its applications more sustainable.

**COP-26:** the Conference of the Parties or COP is within the scope of an international treaty established by the United Nations (UN) Framework Convention on Climate Change (UNFCCC). It is the ultimate decision-making authority governing efforts to control greenhouse gas emissions. COP-26 was held November 1-12, 2021 in Glasgow, Scotland.

**Dow Jones Index Score:** companies participating in the Dow Jones Sustainability Index selection answer an extensive questionnaire, which is sector-specific. The questions, based on pre-established criteria, have different weights, thus resulting in an overall score for the company, which is a determining factor in its inclusion in the DJSI.

**Dow Jones Sustainability Index (DJSI):** a global indicator of financial performance. It was launched in 1999 as the first indicator of the financial performance of leading companies in sustainability at a global level.

**Ecophysiology:** the branch of comparative physiology that studies the physiological diversity in relation to the environment and its impact on the ecology of organisms.

**Ecosystem services:** the services that nature provides to mankind and that are indispensable for its survival, associated with the quality of life and well-being of society.

**Financial Stability Board:** an international body that monitors the global financial system and makes recommendations about it. It was established after the G20 summit in London, in April 2009, as a successor to the Financial Stability Forum.

**GHG:** acronym for greenhouse gases. These gases are those that absorb part of the sun's rays and redistribute them in the form of radiation in the atmosphere, heating the planet in a phenomenon called the greenhouse effect. Carbon Dioxide (CO<sub>2</sub>); methane (CH<sub>4</sub>); hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) used in aerosols and refrigerators are examples.

**Hydrosolidarity management:** set of practices that enables proper guidance on the use of land and other natural resources in order to produce environmental goods and services, without affecting the soil and water.

**IFC/IPCC:** acronym for the Intergovernmental Panel on Climate Change. Created by the United Nations Environment Program (UN Environment) and the World Meteorological Organization (WMO), it aims to provide policy makers with regular scientific assessments of climate change, its implications and possible future risks, as well as propose adaptation alternatives and damage mitigation policies.

**International Accounting Standards Board (IASB):** the international non-profit organization that publishes and updates the International Financial Reporting Standards – IFRS. International Financial Reporting Standards (IFRS): the International Financial Reporting Standards, commonly referred to as IFRS, are accounting standards issued by the IFRS Foundation and the International Accounting Standards Board.

**ISO 14001:** standard that specifies the requirements of Environmental Management Systems and allows organizations to develop a structure to protect the environment and quickly respond to changes in environmental conditions. It takes into account environmental aspects influenced by the organization and others that can be controlled by it.

**Low-carbon technologies:** consist of processes, equipment, systems, and resources that aim to reduce the emission of greenhouse gases, such as carbon dioxide (CO<sub>2</sub>).

**Sexual harassment:** a single act or repeated action in which a person, who may be a woman or a man, is embarrassed by a hierarchical superior, or by another person who has some type of ascendancy inherent to the exercise of the position, with the intention of obtaining sexual advantage or favor.

**Racial Equity Movement (MOVER):** movement formed by 47 Brazilian companies that intend to work on the structures that perpetuate inequality in the country, breaking patterns and providing equally possible achievements for all.

**RPPN:** acronym for Natural Heritage Private Reserve. It is a private domain conservation unit (UC) category, whose objective is to conserve biological diversity. The creation of a UC does not affect the ownership of the property. In addition to contributing to the expansion of protected areas in the country, private reserves help to protect the biodiversity in Brazilian biomes.

**Tag along:** a mechanism for protecting a company's minority shareholders, which guarantees them the right to leave a company if the company's control is acquired by an investor that was not previously part of the company.

**The United Nations Framework Convention on Climate Change:** an international treaty resulting from the United Nations Conference on Environment and Development (UNCED), informally known as the Earth Summit.

**Unit:** also known as a Stock Certificate, is a package of shares traded on the Stock Exchange, which brings together both preferred and common shares.

**UN's Global Compact:** initiative promoted by the United Nations (UN) to engage companies and organizations in the adoption of ten universal principles in the fields of Human Rights, Labor, Environment and Anticorruption Practices, to develop actions aimed at addressing society's challenges.

**Water body:** generic designation for any water source; watercourse, river stretch, artificial or natural reservoir, lake, pond or underground aquifer.



## Other links

[Previous reports](#)

[Contact](#)

[klabin.com.br](http://klabin.com.br)

[Download center](#)

[GRI Summary](#)

[ESG Panel](#)

## Discover our social networks



[@bioklabin](#)  
[@klabin.sa](#)  
[@klabinforyou](#)



[Klabin.SA](#)  
[Klabin For You](#)



[Klabin.SA](#)



[Klabin.SA](#)



[Klabin.SA](#)  
[Klabin Invest](#)