



# ibóá

# 2024

Annual Report



brazilian tree industry

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# Ibóá 2024

Annual Report



brazilian tree industry



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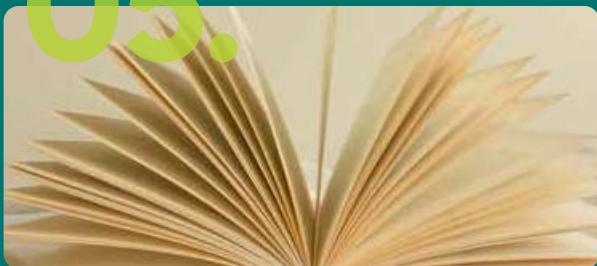
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# OPENING MESSAGE



## A social, environmental and economic power in Brazil

*Antonio Joaquim de Oliveira and Paulo Hartung*

We are living at a critical time in the history of humanity, with climate change, intensive technological and geopolitical transformations, conflicts and unexpected developments in the game of power. Science has already proven that emissions caused by humans, mainly greenhouse gases, are a main cause of the climate crisis. Humankind needs to take urgent action to change the way we produce, consume, and manage resources, in order to reduce impacts and adapt.

As part of these efforts, the planted tree industry, which is based on a large-scale model of the bioeconomy, acts as part of an integrative, systemic, and circular way of thinking, from the

tree to after the product is used, generating a range of benefits for the climate.

This agribusiness has established itself as a highly important sector in Brazil and an international reference. For years, Ibá's Annual Report has presented these activities and the benefits this industry offers in the environmental, social, and economic arenas. This sector opens a new factory every year and a half, running counter to the early and accelerated deindustrialization seen in the rest of the country. With this, it consistently expands the number of direct and indirect jobs offered in various regions throughout Brazil, most of which had slow



Jcomb - Freepik

economies before the arrival of companies in this segment. In 2023 33,400 new job posts were created, adding to the total of 2.69 million direct and indirect jobs generated by this sector.

This year for the first time, the sector surpassed the landmark of 10 million hectares of planted trees, growth of 3% over the previous year. Note that the plantations are mapped from satellite images, combined with the analysis and expertise of Canopy Remote Sensing Solutions: the best satellite mapping methodology available, which can capture areas as small as a quarter of a hectare.

Expansion in cultivated areas was most visible in the state of Mato Grosso do Sul, on land that had already been cleared for previous human activities but was transformed into planted forests. Through this transformation, the sector remediates low-productivity pasture areas with a new vocation that removes carbon from the atmosphere and is managed sustainably, providing benefits for the environment and shared value for society. One of the most important management practices involves a technique called mosaic planting, which combines conservation areas with planted forests at the landscape level. Producing while simultaneously preserving generates both richness and revenue for Brazil.

We are pleased to note that last year the area preserved by the sector also grew and now totals 6.91 million hectares, an area larger than the state of Rio de Janeiro which is composed of natural and restored forests.



**2.69**  
**million**

direct and indirect jobs





The Brazilian planted tree industry has international trade of US\$ 12.7 billion and continues to be the world's largest exporter of cellulose pulp, with over 18 million tons shipped abroad.

The sector plants 1.8 million trees per day, giving rise to a growing range of renewable products that include books, notebooks, clothing, cellulose, paper, packaging, toilet paper, diapers, wood panels, and laminate flooring. These products are part of everyone's daily routines and replace those from fossil sources, offering many advantages. We are talking about not only more obvious objects like wood furniture and cellulose pulp, but also countless new uses in generating bioenergy, with applications in the textile industry, cosmetics and foods, as well as many other segments.

Domestic sales of wood panels grew 1.5% compared to 2022, reaching a total of 7.1 million m<sup>3</sup> with a compound annual growth rate (CAGR) of 0.7% over the past ten years. Total production of another noteworthy product, laminate flooring, reached 10.4 million m<sup>2</sup>.

This sector is on the right side of the climate equation, and has been opening decarbonized and/or circular factories in recent years, such as Suzano's new mill in Ribas do Rio Pardo (MS), Klabin's Puma II project in Ortigueira (PR), Guararapes' new unit in Caçador (SC), and Bracell's Project Star in Lençóis Paulista (SP). This work also involves modernizing existing units, mapping points that can be improved to reduce emissions and use of finite or fossil sources. The three main components targeted in this process are recovery boilers, lime kilns, and the logistics system. This Annual Report contains a special chapter that presents the benefits to the sector from combating climate change and its successes in decarbonization.

This report contains indicators for 2023, and comes to you in 2024 featuring notable achievements. After nearly a decade of paperwork, public hearings, and significant debate, Law 14.876 was signed in June, excluding forestry from the list of polluting activities and correcting a clear inconsistency in our country's legislation.

This sector is a source of pride for all Brazilians. We have a lot to celebrate, but challenges remain. With constant, exponential growth, labor shortages have become a central concern.



**1.8  
million**

trees planted per  
day in previously  
degraded areas

Demands for human capital, to attract, qualify, train, and retain staff, have risen significantly. In the past the sector successfully overcame this challenge: now we need to come together yet again. Ibá, state associations, governments and companies are already working on new solutions.

To more clearly understand this scenario and regional demands related to the new units planned for the state of Mato Grosso do Sul, Ibá commissioned an exclusive survey which indicates that expansion in the region will generate additional opportunities for over 100,000 people.

Forest yields have remained stable after increasing gains in the past; for this reason, we need to combine forces among professionals, companies, academia, and various other institutions to combine knowledge in a cooperative manner and address this challenge in a pre-competitive way, as forest-based industry has done in the past, considering that there is still major potential for progress.

This is a sector that does not stop: with a portfolio of new planned investments that already exceed R\$ 105 billion by 2028, demand for sustainable products will only grow.

As we face a challenging global scenario that requires humankind to reconsider the principles that got us here, in Brazil we have an inspiring example demonstrating a mission to produce while also preserving that is invaluable for the country, society, employees, consumers, and shareholders. The 2024 Ibá Annual Report illustrates this potential.



**Antonio Joaquim de Oliveira**  
President of Ibá's Deliberative Council



**Paulo Hartung**  
Ibá President



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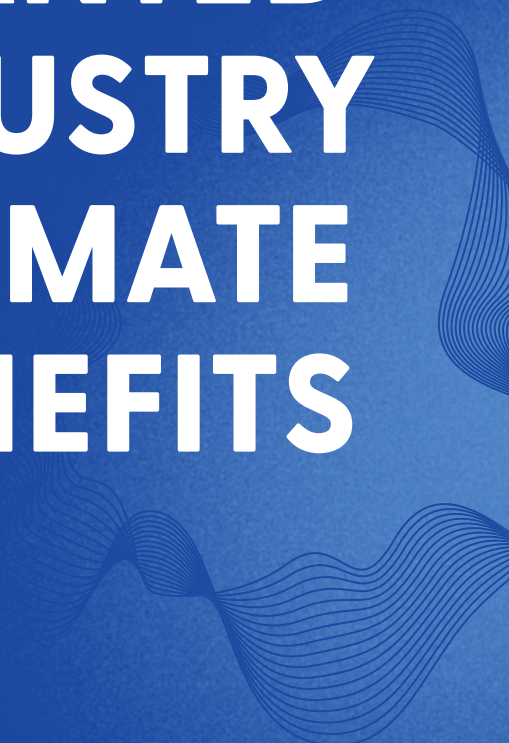
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1.

# THE PLANTED TREE INDUSTRY AND ITS CLIMATE BENEFITS



# THE PLANTED TREE INDUSTRY AND ITS CLIMATE BENEFITS



**4.92  
billion**

tons of CO<sub>2</sub>eq stocked  
in areas pertaining to  
the sector

The planted tree industry operates within an integrative, systemic, and circular way of thinking, from the tree to after the product is used, creating a range of benefits for the climate. The sector plants, harvests, and replants trees for industrial purposes on 10.2 million hectares, and is currently expanding into degraded areas and low-productivity pastures. It plants 1.8 million trees per day, which remove and store carbon from the atmosphere. This recuperates areas, giving them a new purpose with benefits for the climate and sustainable management, providing positive impacts for the environment and shared value for society.

One of the sector's most important sustainable management practices involves a technique known as mosaic planting, which combines preservation areas with planted forests at the landscape level.

The sector protects 6.91 million hectares of natural vegetation, an area larger than the state of Rio de Janeiro. Together, the sector's preserved and planted areas store 4.92 billion tons of carbon dioxide equivalent (tCO<sub>2</sub>eq).

Beyond the potential to remove and store carbon in its planted and preserved areas, this agribusiness is always seeking new ways to decarbonize production processes and transport. As they work to improve their climate-related performance, companies in the sector carefully map stages in these processes that can be optimized to reduce emissions and use of fossil fuels. New factories like those belonging to Bracell, Guararapes, Suzano and Klabin are designed to use as little fossil fuel as possible, instead utilizing alternative and renewable energy sources like biomass in their boilers and lime kilns.

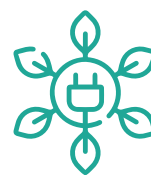
Units that are already operating are also investing in gasification of forest biomass to produce synthesis gas, which is used to generate energy for lime kilns. Lime kilns are traditionally fired by natural gas or other fossil fuels, and play a key role in treatment and reuse of byproducts from pulp production, making the production process more circular. Ibema has replaced fossil fuels with biomass in three boilers; Irani has not only deployed a bioenergy-fired recovery boiler in Vargem Bonita (SC), but is also investing in solar energy generation for its mills in SC, SP, MG, and RS.

Bioenergy generated from black liquor, a co-product of cooking wood to produce cellulose, is already a reality in the sector. Today, 87% of the energy consumed by this industry comes from renewable sources.

And as industrial processes tend to become less polluting and increasingly circular, new investments are being made to transform the ash that results from the cellulose production process into fertilizer. This is the case at Klabin and Bracell, which both have specific facilities that use it to produce potassium, an essential nutrient from tree development. Circularity and the pursuit of zero landfill waste have been adopted by approximately 54% of the sector's companies; these initiatives work to stop sending refuse to landfills, promoting more sustainable waste management practices.

Various companies also have projects to reduce logistics emissions, from internal transport as well as outbound shipping for products such as pulp, paper, and wood panels.

The infographic below illustrates the main means of decarbonization and benefits offered by the sector in efforts to mitigate climate change.



# 87%

of energy consumed by the sector comes from renewable sources



Lorellin - Pexels



# The planted tree industry and its benefits in fighting climate change

Following an integrated and systematic rationale that spans from the planting of trees to after end products are used by consumers, the planted tree sector is clearly on the right side of the climate equation. Planted trees are essential to combat climate change, removing and storing carbon and giving rise to over 5,000 bioproducts in our everyday lives, natural and sustainable products that replace products from fossil sources. This sector is essential for Brazil to reach its Paris Agreement climate goals.

## Removal and storage

Trees are some of the most efficient mechanisms for carbon removal and storage.

The sector's areas, whether used for production or conservation, serve as carbon reservoirs.

**10.2 million**

hectares of planted trees.

**6.91 million**

hectares of preserved areas.

**4.92 billion tCO<sub>2</sub>eq**

stored in the sector's forests (planted and conservation areas).

### Carbon reservoirs

1

Above ground

2

Under ground

3

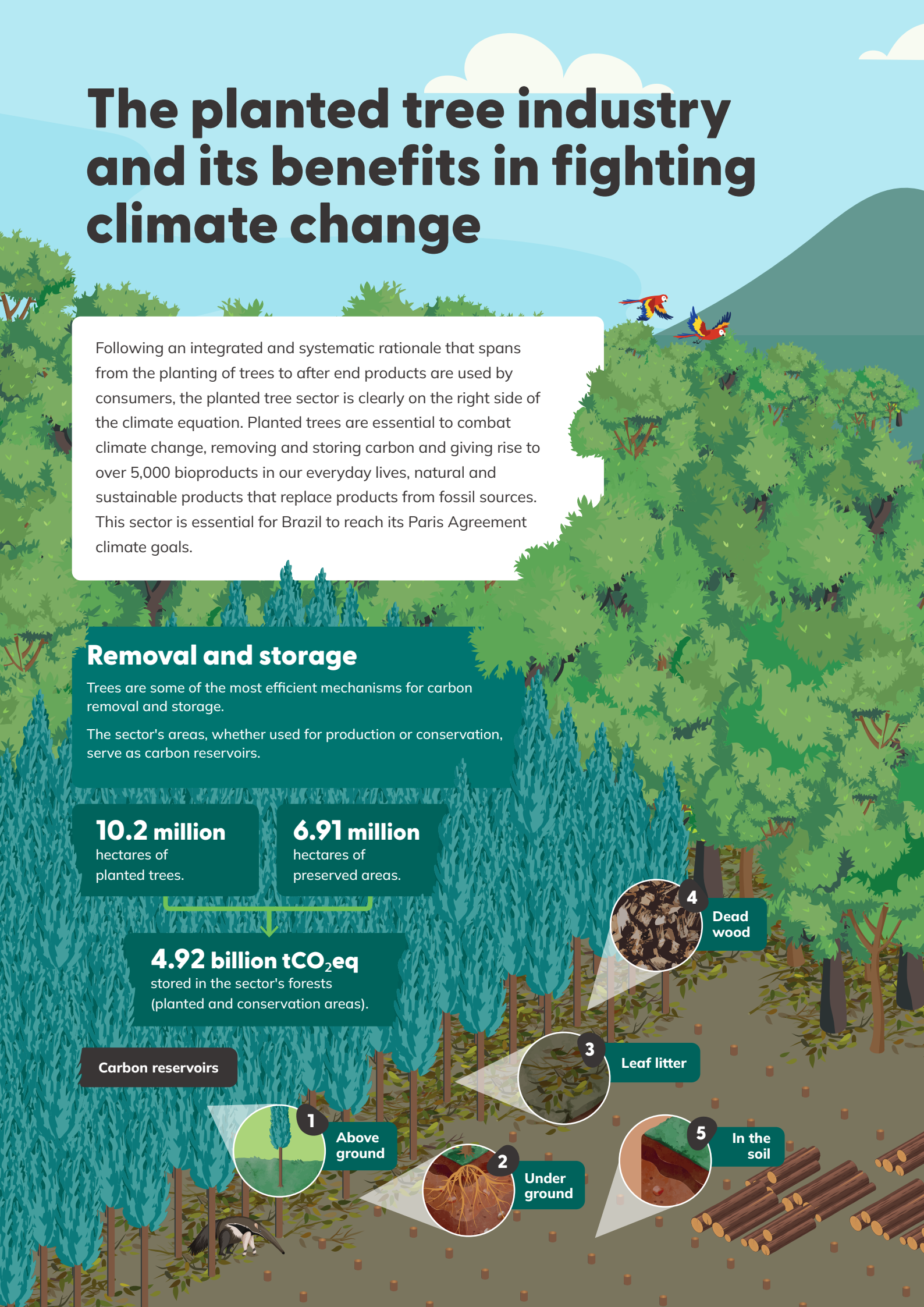
Leaf litter

4

Dead wood

5

In the soil



## Stored carbon

Trees are highly efficient in converting carbon into biomass through photosynthesis. This carbon remains stored in the form of wood or forest-based bioproducts. The percentages show some of the amounts of carbon stored in these products.<sup>1</sup>



Wooden table  
47%



Shelf-stable  
milk carton  
45%



Book  
45%



Charcoal  
75%



Laminate flooring  
47%

## Circularity

The circular economy is essential to reach a regenerative balance, making it easier to decarbonize manufacturing. The planted tree sector is one of the industries that recycles the most in Brazil.

58.1%  
paper  
recycling

## Emissions avoided

The sector avoids emissions by offering products similar to those from fossil sources, with benefits for the climate. Emissions are mainly avoided in the manufacturing process by using energy from predominantly renewable sources.

87%

of energy consumed comes from clean sources. The sector optimizes use of renewable energy in its factories, and minimizes waste production.

<sup>1</sup> Figure adapted from IPCC, considering a pine table weighing 20 kg, the paper used in a milk carton, 1 m<sup>2</sup> of eucalyptus laminate flooring, and a 5 kg sack of eucalyptus charcoal.





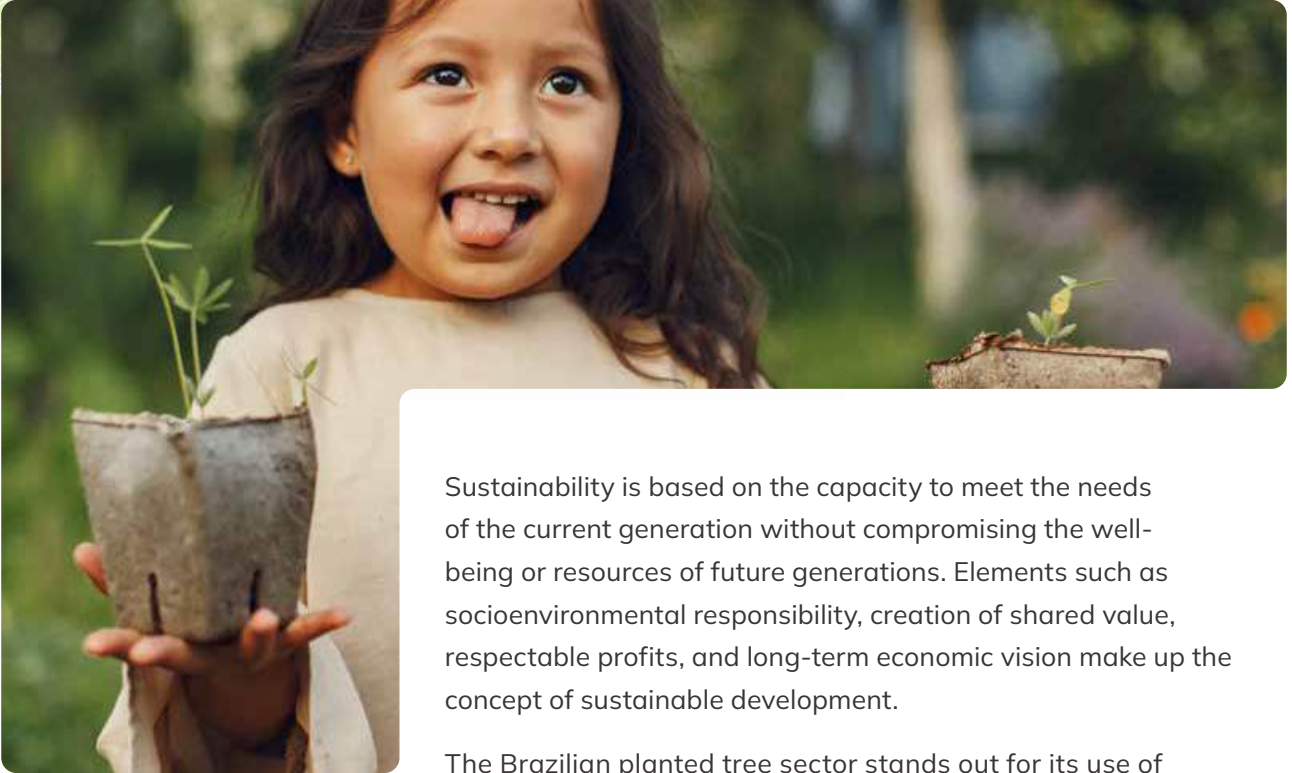




# 2. SUSTAINABILITY



# SUSTAINABILITY



Prostooleh - Freepik



We are the world's most sustainable planted tree industry

Sustainability is based on the capacity to meet the needs of the current generation without compromising the well-being or resources of future generations. Elements such as socioenvironmental responsibility, creation of shared value, respectable profits, and long-term economic vision make up the concept of sustainable development.

The Brazilian planted tree sector stands out for its use of sustainable practices to meet demand for forest-based products and to help reduce pressure on native forests. For years, this sector has incorporated sustainability at the highest levels as a strategic pillar in its business plans, proving that production and preservation complement each other, and has made intensive investments in technology and management practices that minimize economic impact.

Sustainability in the sector is also linked to social and economic development in the regions where it operates, generating jobs and income and promoting socioeconomic development of local communities.

This chapter highlights the planted tree sector's contributions to society and the environment, demonstrating an economic production model that is in tune with environmental conservation and social development. Most of the sustainability indicators presented depict the responses of Iba member companies which participated in the survey for base year 2023.

# Conservation areas

One well-established practice in this sector is mosaic planting, which intersperses productive plantations with conservation areas to form ecological corridors. These corridors connect the landscape, offering shelter for fauna and flora, and provide countless benefits for soil and water conservation such as regulating water flows. As a good practice at the landscape level, neighboring communities must often be engaged in the cause.

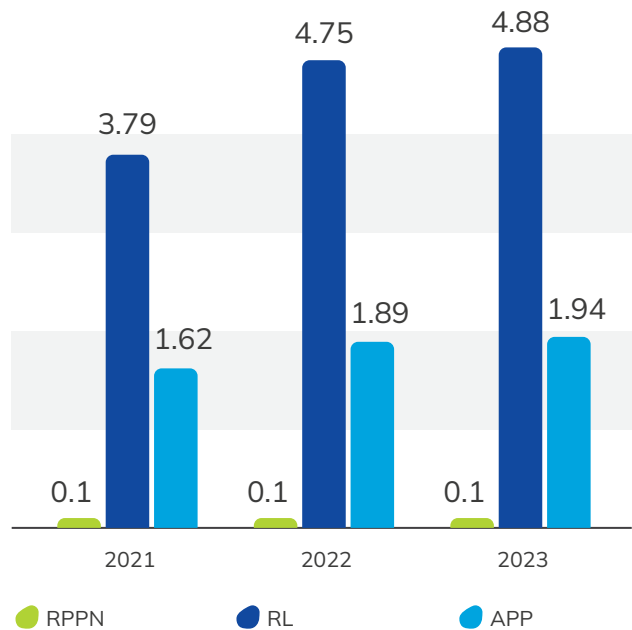
In 2023, the area preserved by the planted tree chain reached 6.91 million hectares, including 4.88 million hectares of Legal Reserves (RL), 1.94 million hectares of Permanent Preservation Areas (APP) (Figure 1), and 100,000 hectares of Private Natural Heritage Reserves (RPPN), administered directly or indirectly by the sector. RPPN are a category of perpetual and privately held conservation unit, showing the sector's commitment to voluntarily maintaining areas that are of great importance to preserving biodiversity.

Among these preserved areas, 195,000 hectares were considered High Conservation Value Areas (HCVA), growth of 8.3% over the previous year. HCVA is the term used by certification programs to refer to areas of exceptional or critical importance in biological, ecological, and social terms. These areas are identified by their special attributes for biodiversity conservation and ecosystem services, for example.

Figure 1

Areas preserved by the planted tree sector, 2021–2023 [million hectares]

Source: Ibá (2023) | Developed by: ESG Tech



**6.91**  
million

hectares of  
preserved areas

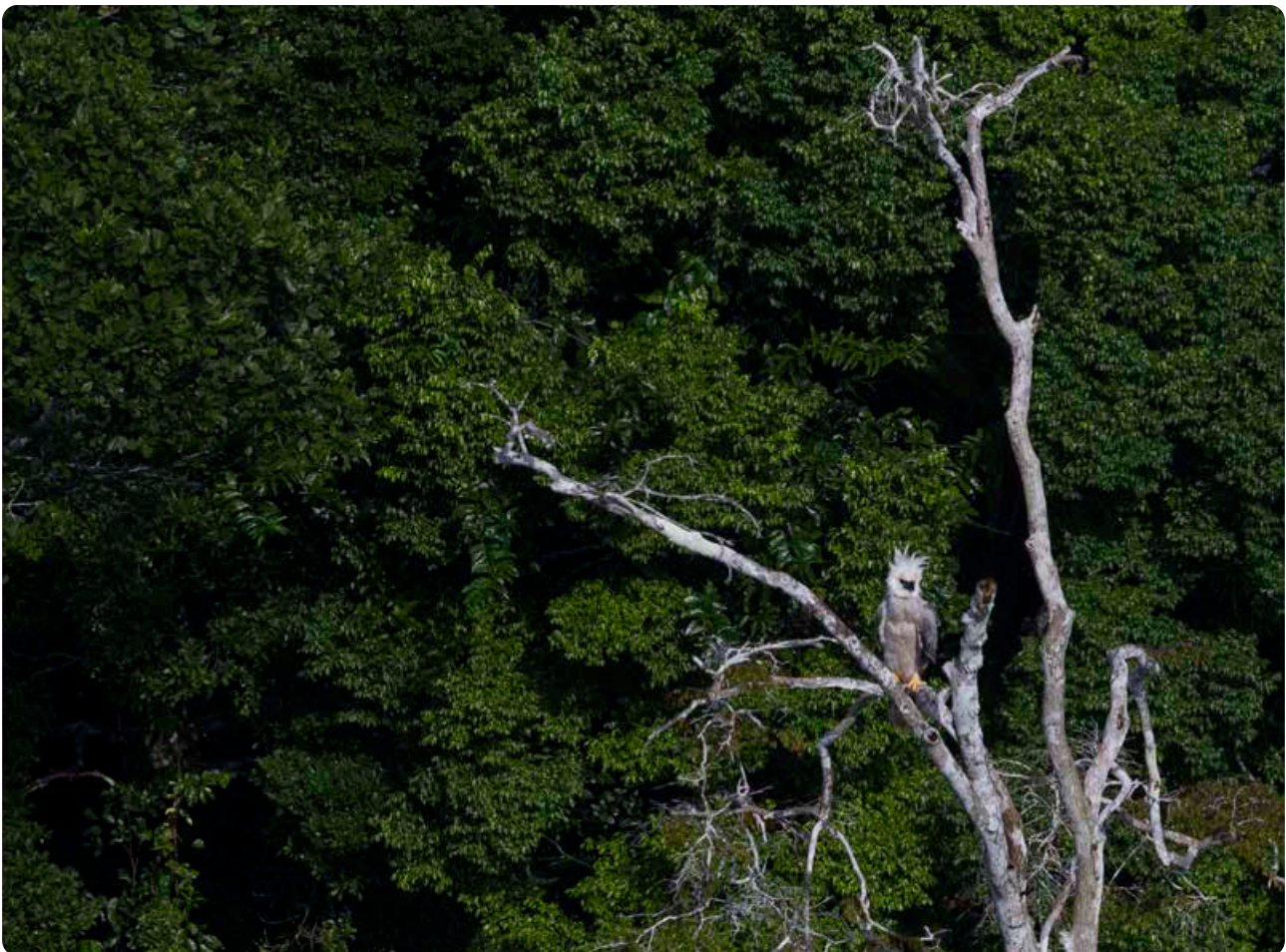
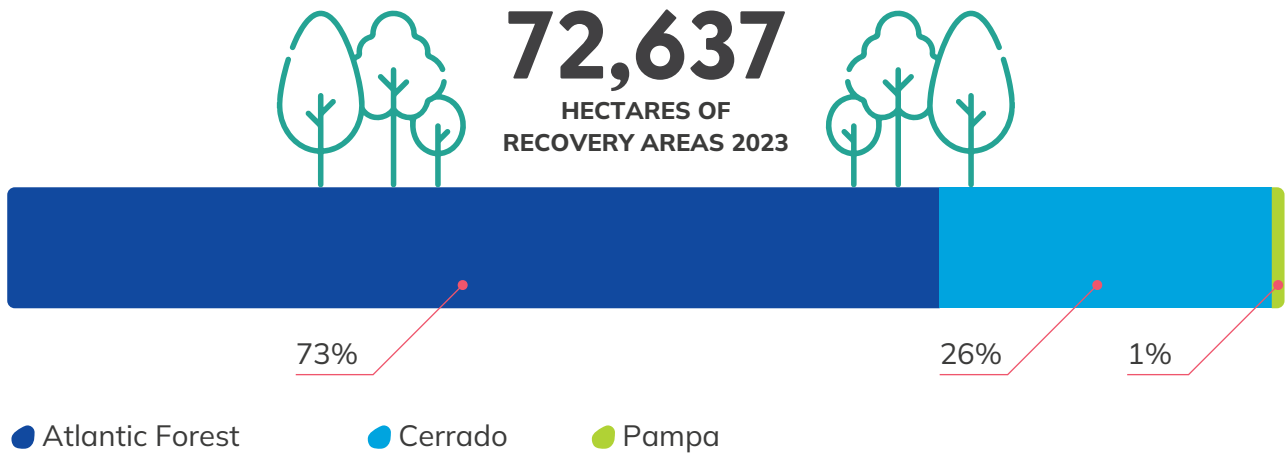


In 2023, companies in this sector were carrying out environmental recovery activities on over 72,000 hectares. These areas are mainly found in the Atlantic Forest biome, followed by the Cerrado (Figure 2).

Figure 2

## Areas undergoing environmental recovery in 2023

Source: Ibá (2023) | Developed by: ESG Tech



Veracel - João Marcos Rosa

# Biodiversity

Biodiversity is a well-established topic in the planted tree sector, which for many years has invested in innovation, research and development of best management practices that are also in line with this focus. This industry's initiatives include production and conservation, mosaic planting, and creating ecological corridors by interspersing its planted forests with conservation areas.

Over 8,310 species (including flora, mammals, birds, fish, reptiles, amphibians, invertebrates, and fungi) have been recorded in the sector's planted and conserved areas, across five different biomes: the Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pampa. Of these species, 335 were considered threatened or endangered. In just the Cerrado and Atlantic Forest, 26 are classified as bioindicators. In these same two biomes, 7 species of flora and 14 species of fauna were classified as rare. These numbers show the sector's commitment to environmental management for biodiversity conservation.

Note that the sustainable management practices adopted directly contribute to the Sustainable Development Goals (SDG) and the 23 targets contained in the Kunming-Montreal Global Biodiversity Framework approved at the UN's 15th Conference of the Parties on Biodiversity (COP15), held at the end of 2022 in Montreal, Canada.

Activities by Ibá's member companies are fully linked to the topics addressed by the Biodiversity Framework, such as protected areas, restoration, conservation and recovery of wild species, access to innovation and technology transfer, biosecurity, and sustainable agriculture and forestry.

Along these lines, Ibá and its associates participated in the entire process of constructing the Global Biodiversity Framework and in the National Biodiversity Strategy and Action Plan (EPANB), which is still being developed by the Brazilian Ministry of the Environment (MMA).



Cenibra



# 8,310

species were registered in the sector's planted and conserved areas





Cenibra

# Management of water resources

To ensure water availability and quality, this resource must be used and managed sustainably, with positive impacts for the ecosystems and beings that depend on it.

Within the planted tree sector, good water conservation practices are part of everyday operations in approximately 90% of member companies, according to our survey. These practices involve preventing and mitigating erosion in their areas; sustainable harvesting, which leaves behind bark, leaves and branches on the ground; mosaic planting, which combines conservation and production areas at the landscape level; and restoring springs, as well as maintaining Permanent Preservation Areas (APP). Nearly 80% of Ibá member companies reported that they perform some type of qualitative and quantitative monitoring of bodies of water. This is essential

to adaptive stewardship and good management of water resources, since it allows companies to understand, assess, and oversee the effects of their plantations, their management practices and protection measures to guide potential adjustments when necessary.

Roughly 82% of the water captured for use in pulp and paper mills is returned to the same body of water after treatment, according to the most recent survey. The rest returns to the atmosphere in the form of vapor, and just 0.3% is actually consumed, retained in the manufactured product. In the flooring and panel segment, this return rate is 63%, since most of the production process to make these products involves dry pressing. We can conclude that most of the water captured for manufacturing in this sector is returned to the same body of water after treatment.



# Climate change

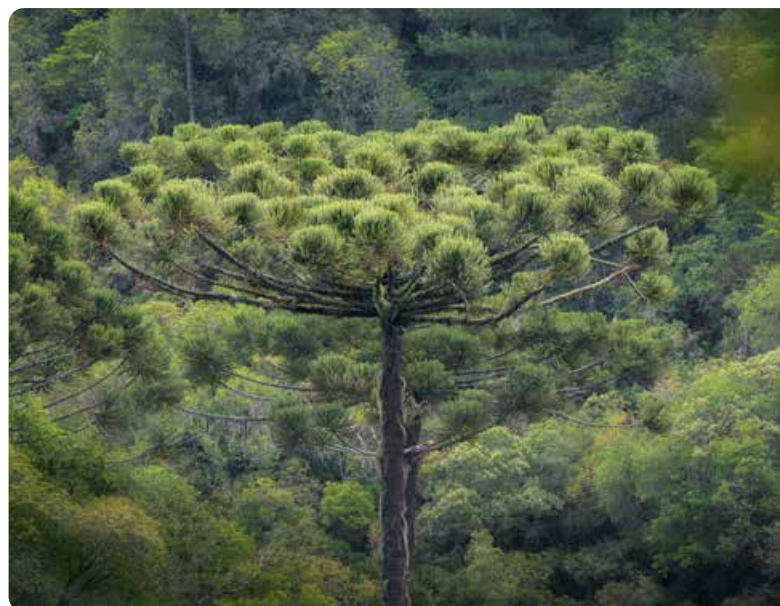
In Brazil, companies in the planted tree sector demonstrate a solid and ongoing commitment to research and the development of innovative solutions to face the challenges of climate change. Notable activities include promoting sustainable use of natural resources and exploring new management techniques that boost efficiency in carbon capture.

The forest-based sector is currently expanding its activities, with prospects for growth in the coming years. Some companies are already tracking the carbon removed and stored by their forests, which are important vectors for decarbonization. These practices make significant contributions to reducing greenhouse gas concentrations in the atmosphere, helping to mitigate climate change.

The amount of carbon dioxide equivalent (CO<sub>2</sub>eq) stored in productive forests totals 1.86 billion tons, and 3.6 billion tons is stored in forests in conservation areas. Data collected from Ibá member companies indicates that the estimated average amount of carbon stored in biomass in planted forests was 182.59 tCO<sub>2</sub>eq/ha. In practice, this demonstrates the capacity of planted forests to capture and store a significant quantity of carbon from the atmosphere. Not only is this number an important indicator of climate benefits from forest activities, it is also directly related to productivity in forest areas.

As industrial production increases forest plantations also need to grow, and conservation areas will also expand, in turn boosting carbon storage and removal. Another way to encourage this forest expansion is through carbon credits and careful accounting of this data.

Showing commitment and responsibility in monitoring impacts and contributing to a sustainable future, many companies in this sector conduct inventories of the greenhouse gases (GHG) they emit. In 2022, 81% of companies that responded to Ibá's survey reported performing GHG inventories; in 2023 this number rose to 88%. Of the companies that conducted inventories, 82% stated that they publish their results, growth of nine percentage points over the previous year, reflecting the industry's growing concern with this issue.



CMPC



Irani

To address concerns over climate change, companies in the sector have implemented a series of measures such as expanding conservation areas (including restoration of degraded areas) and reducing the use of inputs derived from fossil sources in production processes, as well as various practices that are part of the circular economy. The sector has also taken action to adapt to climate change through research and activities that include using clones that are more resistant to climate alterations and innovative measures to combat pests. Additionally, in 2023 60% of companies that participated in Ibá's survey reported having goals to reduce carbon emissions in their operations, covering scopes 1, 2 and 3. This is a significant advance compared to the previous period, when only 35% of companies had such targets. Among the companies with some sort of target, 7% addressed scope 1, 60% 1 and 2, and 33% scopes 1, 2 and 3 (Figure 3).

Figure 3

### Companies with any type of target to reduce carbon in their operations [%]

Source: Ibá (2023) | Developed by: ESG Tech

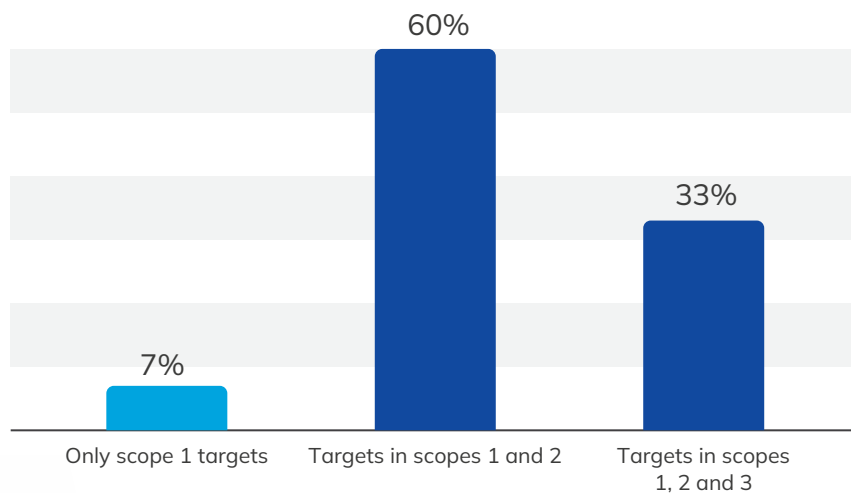
**Companies with targets:**

increase of 25 percentage points compared to 2022

**Scope 1:** Direct emissions

**Scope 2:** Indirect emissions from purchased electricity and/or thermal energy

**Scope 3:** Indirect emissions (not included in scope 2) that occur in the company's value chain, including emissions by suppliers and clients; these emissions occur in sources that are not owned or controlled by the company



These findings reflect the sector's growing concern with decarbonization, highlighting greater commitment to sustainable practices and reducing net carbon emissions. This movement has shown itself to be not only a proactive response to environmental and climatic pressures, but also a recognition of the importance of an environmentally responsible approach to ensure the long-term sustainability and viability of business operations.

# Energy generation

The planted tree sector continues to be an example of energy sustainability.

During 2023 this industry consumed 183.6 million GJ of energy; 92% of this consumption was supplied via energy generated by the companies themselves, the equivalent of 168.7 million GJ. The remaining 8% of demand came from purchased energy, totaling 28.2 million GJ. Note that some mills and factories sell the energy they do not use (whether purchased or self-generated) back to the national grid, making significant energy contributions in some municipalities. These sales totaled 13.4 million GJ in 2023.

The share of renewable energy in this sector is source of pride, and a major differential in its sustainability strategy. All in all, 87% of the energy consumed by this industry comes from clean sources.



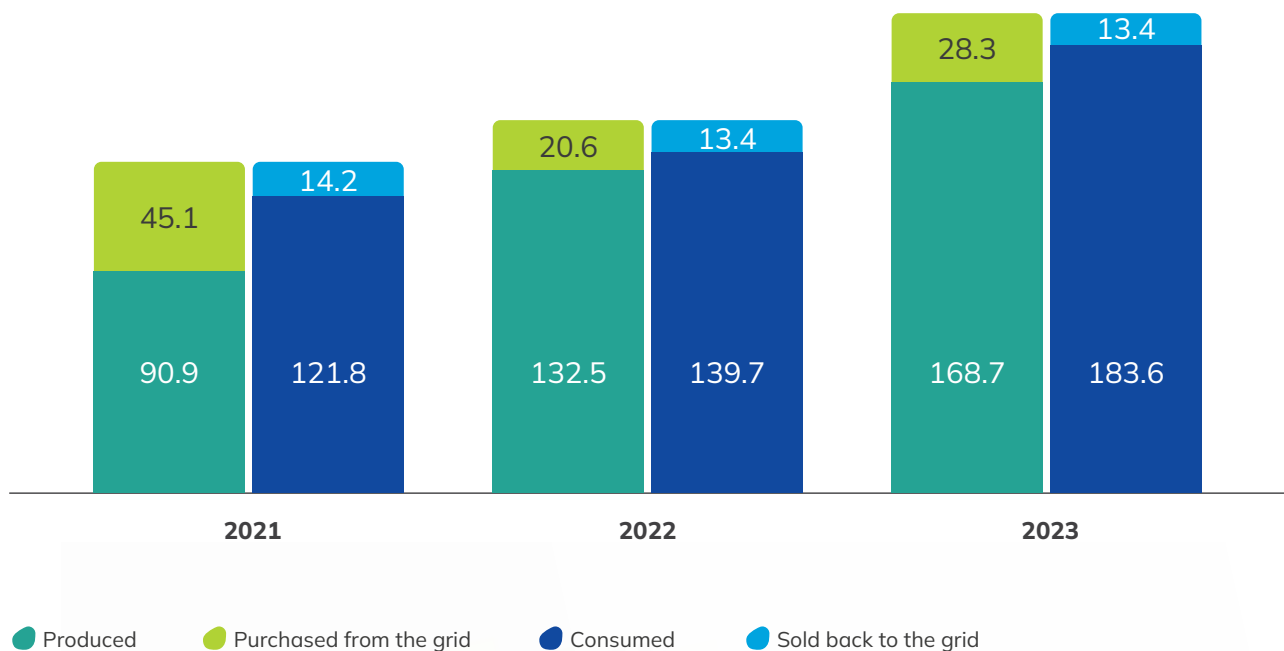
# 87%

of energy consumed comes from clean sources

Figure 4

## Energy balance in the sector [million GJ]

Source: Ibá (2023) | Developed by: ESG Tech



● Produced    ● Purchased from the grid    ● Consumed    ● Sold back to the grid



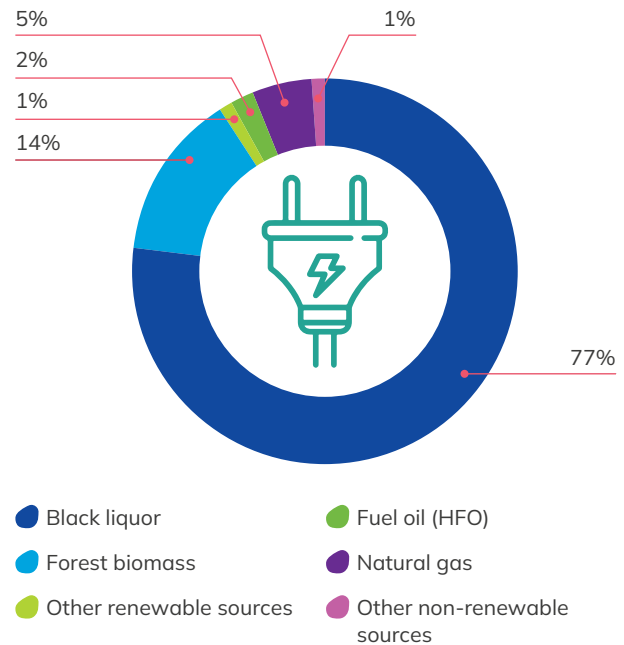
Even when companies must purchase energy to meet their demand, 41% of this energy comes from renewable sources. Furthermore, 76% of the energy sold by the sector is also renewable, helping to boost the renewability rate in the national energy grid.

Energy is mostly produced from black liquor (77%), a co-product of cellulose manufacturing, and forest biomass (14%), while other renewable sources like vegetable oil (bio-oil), tall oil, syngas, methanol, solar energy, dehydrated wastewater treatment sludge, and green hydrogen together account for 1%.

Figure 5

### Sources of energy production [%]

Source: Iba (2023) | Developed by: ESG Tech | Note: includes electricity and thermal energy



**64%**

of the materials generated in the sector's production processes are directed toward energy generation

## Circular economy

The Brazilian planted tree sector adopts various practices to optimize the use of its natural resources and minimize disposal, based on the principles of the circular economy.

The main materials generated from the sector's production processes are black liquor, forest byproducts, bark, branches and leaves, and recycled materials, which together account for 79%. The remaining 21% are materials such as substandard wood chips, sawdust, lime mud and boiler ash.

As for their final destination, as in previous years most of these materials are used to generate energy (black liquor), approximately 64%, followed by recycling and/or reuse. The remainder stay in the field to be used in protecting, fertilizing, or correcting the soil (forest byproducts). Finally, just 17% of the materials resulting from manufacturing processes can effectively be called waste and are directed to landfills or other final destinations (Table 1).

Table 1

### Destination for waste material [%]

Destination	Share (%)
Energy generation	64
Recycling and/or reuse	13
Sent to landfills (includes Class 1 and Class 2)	9
Other destinations	8
Used in the fields to protect, fertilize, or correct the soil	6

Source: Ibá (2023) | Developed by: ESG Tech

To discourage waste, approximately 54% of companies in the sector report that they promote “zero landfill” initiatives intended to eliminate disposal of materials in landfills and stimulate more sustainable waste management practices. To reach their reduction goals by 2030, many companies are investing in coprocessing, recycling and composting. This strategy reinforces the sector’s commitment to sustainability and the circular economy.

# Recycling rate

In 2023, 4.3 million tons of paper scraps were collected, reaching a recycling rate of 58.1% according to data from FGV IBRE. When we consider only paper scraps from packaging and paperboard, this rate rises to 64%.

Figure 6

### Recycling rate in 2023

Source: FGV IBRE (2023) | Developed by: ESG Tec

**58.1%**

Recycling rate



Freepik

# Forest certification

Forest certifications provide consumers a clear view of forests and the production process. By establishing rigorous standards for forest management, certifications ensure that tree cultivation and other practices are done in an environmentally responsible, socially just, and economically viable manner that promotes sustainable development in the regions where certified companies are located. Forest certifications can also lead to innovation in management techniques and resource use, since they are founded on the notion of continuous improvement.

These good practices are verified each year by independent auditors, which further increases the value of these certification seals.

Companies that earn these certifications gain access to more demanding and more valuable

markets in Brazil as well as abroad, where consumers pay increasing attention to the sustainability of products.

In Brazil, organizations like FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) play an essential role by providing credibility because of their independent and multi-stakeholder nature, and establish the highest standards for responsible management.

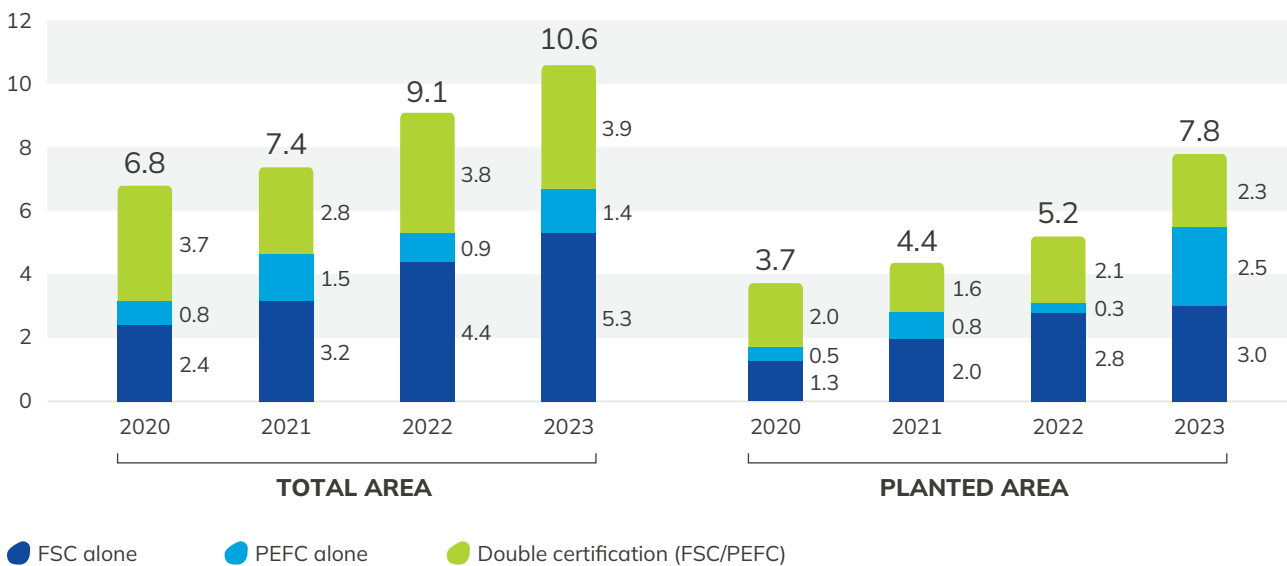
Besides expanding access to markets, forest certification contributes to companies' reputations, demonstrating their long-term commitments. This not only strengthens consumer confidence, but also attracts investors and commercial partners who value sustainability.

In 2023, the total certified area in Brazil reached 10.6 million hectares. There was a significant 50% increase in certified areas planted for productive purposes compared to 2022, attaining 7.8 million hectares.

Figure 7

## Certified area in Brazil, by certification system

Source: FSC (2023), PEFC (2023) and Ibá survey (2023) | Developed by: ESG Tech







Suzano

In 2023 Brazil advanced in the global ranking of FSC certified area, moving from 5th to 4th. Although there was an increase in PEFC certified area, Brazil maintained its position from the previous year, in 11th place. It is important to note that the increase in PEFC certified area in 2023 was the result of restructuring and strengthening of the system in Brazil, as well as a consequence of work by the Pró-Manejo Florestal Institute, the new manager for PEFC certification in the country. Planted areas with double certification (FSC/PEFC) remained essentially stable compared to the previous year (Figure 7).

Although the number of chain of custody certificates increased 5% compared to the previous year, the country remained in 11th place in the FSC ranking and 39th place in the PFC ranking.

Besides certification for forest management and chain of custody, companies in the sector also report other important certifications, most notably in the ISO system such as ISO 9001 (quality management), ISO 14001 (environmental management) and ISO 45001 (occupational health and safety management). Other less common certifications include those for food packaging and additives (ISEGA, Kosher, Halal), international seals such as the EU Ecolabel (the European Union's voluntary ecological label) and specific certifications for wood panels such as CARB (California Air Resources Board).



**10.6**  
**million**

hectares of certified  
area



Bracell

# Social and economic development

Sustainability and business continuity in the planted tree sector are strongly influenced by the stakeholders and communities that are impacted by its operations. The sector works together with the community toward positive impact and generation of shared value, which results in development for society.

To do this, it establishes relationships, enters into dialog to hear demands and opinions, maps opportunities for improvement, and invests in social and economic development projects.

In 2023, 88% of the companies surveyed by Iba reported having projects or programs addressing social and economic development in local communities. Investment in these projects totaled approximately R\$ 39.5 million and directly impacted 918,000 people, spanning various areas including education, ecotourism, culture, beekeeping, quality of life and well-being, health, environmental preservation and recovery, entrepreneurship, diversity and inclusion, recycling and sports.



## R\$39.5 million

were invested in socioenvironmental projects

Figure 8

### Investment in social and environmental projects

Source: Iba (2023) | Developed by: ESG Tech





Beside these investments, during the same period member companies directed R\$ 9.7 million in various types of donations to the communities where they operate. Tax benefits received by member companies were also returned in the form of programs involving culture, sports, and support for children, adolescents and the elderly.

With regard to dialog, all companies that responded to this survey reported having some type of formal mechanism to receive complaints and suggestions. These mechanisms play a key role in managing impacts, since they allow

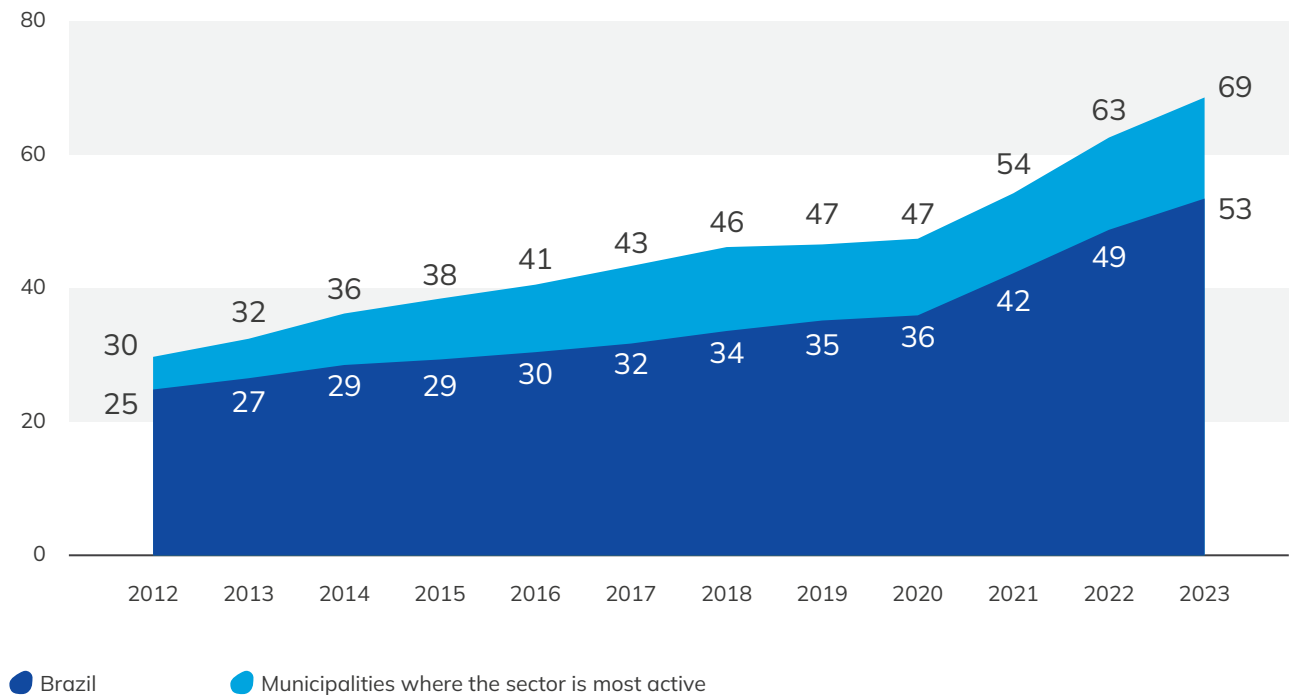
participation by people who may potentially be affected by the company’s operations.

Over the past ten years, the average per capita GDP in municipalities where the sector is most active has been 29% higher than the national average, which means that each inhabitant in these areas makes a larger economic contribution to local development compared to the national average. While national per capita GDP is R\$ 53,000, in the municipalities we studied this value reached R\$ 69,000 (Figure 9).

Figure 9

### Change in per capita GDP [thousand R\$]

Source: IBGE (2021; 2023) | Developed by: ESG Tech



Note: these municipalities were Mucuri (BA), Eunápolis (BA), Aracruz (ES), Imperatriz (MA), Belo Oriente (MG), Três Lagoas (MS), Ribas do Rio Pardo (MS), Água Clara (MS), Telêmaco Borba (PR), Ortigueira (PR), Rio Negro (PR), Jaguariaíva (PR), Arapoti (PR), Guaíba (RS), Otacílio Costa (SC), Correia Pinto (SC), Três Barras (SC), Cáceres (MT), João Pinheiro (MG), Caieiras (SP), Turvo (PR), Coronel Vivida (PR), Agudos (SP), Salto (SP), Botucatu (SP), Angatuba (SP), and Luís Antônio (SP).

In 2023, the Sustainable Development Index for Brazilian Cities (IDSC), an indicator which aggregates the 17 SDGs, was 46.8. From an overall perspective, the country faces significant challenges in meeting the goals

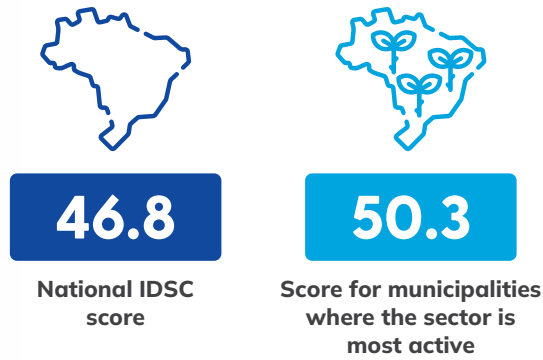
established in the 2030 Agenda. The mean score for the municipalities where the sector is most active is 50.3 points, 7.5% higher than the national average.



Figure 10

## Sustainable Development Index for Brazilian Cities - IDSC [points]

Source: ICS & SDSN (2023) | Developed by: ESG Tech

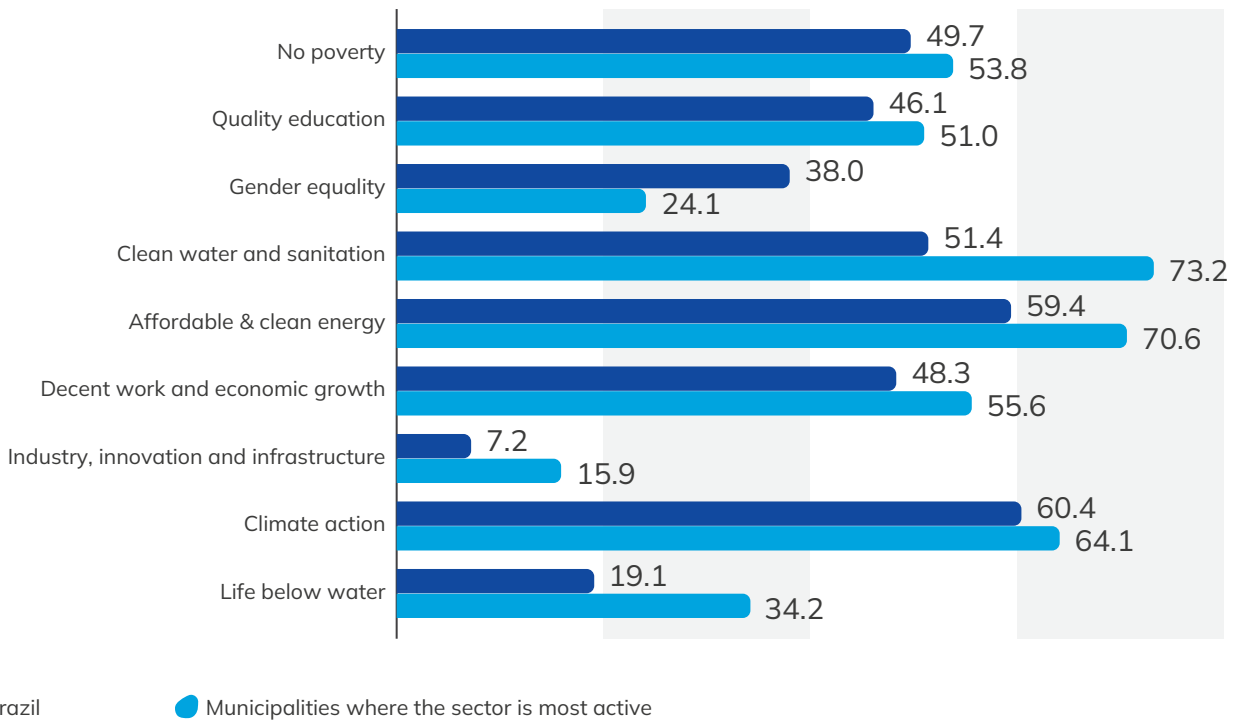


Comparing Brazil's overall performance with the municipalities where the sector is most active, we see that these communities exceed the national average for 13 Sustainable Development Goals (SDG). Highlights include indicators linked to clean water and sanitation, affordable and clean energy, and life below water (Figure 11).

Figure 11

## Comparison of SDG comprising IDSC score [points]

Source: ICS & SDSN (2023) | Developed by: ESG Tech

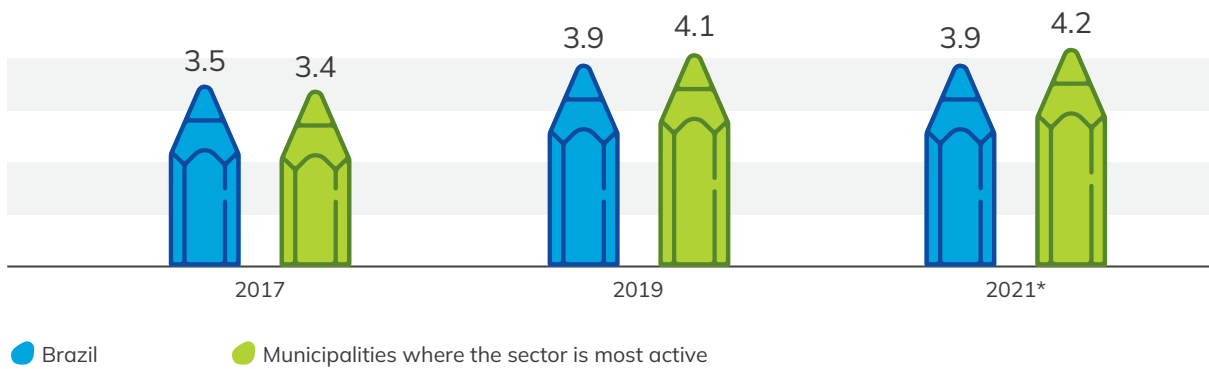


Development indicators related to education in the municipalities where the sector is most active have also exceeded the national average in recent years; in 2021, the most recent year this data was published, performance was 8% higher (Figure 12).

Figure 12

### Basic Education Development Index (IDEB)

Source: MEC/INEP (2021) | Developed by: ESG Tech | Note: according to IDEB, in 2021 there was no data for Cáceres (MT), Eunápolis (BA), Luís Antônio (SP), Água Clara (MS) or Ribas do Rio Pardo (MS).



Performance on significant indicators in the municipalities where the sector is most active is evidence of its serious commitment to social, economic and environmental development in the communities where it operates.

Levantina



# Diversity and inclusion

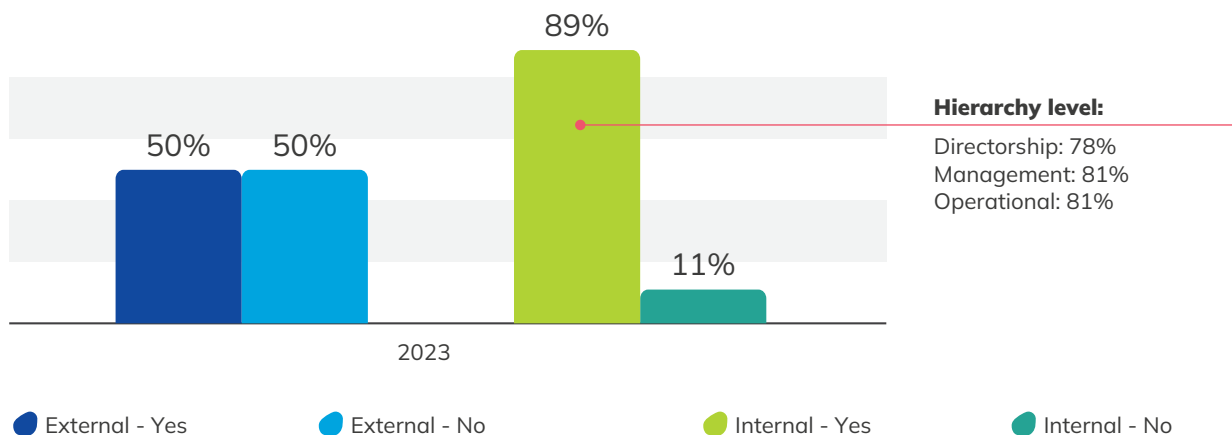
The sector has been working to promote diversity and inclusion in order to stimulate a more innovative, creative, productive and engaged working environment. In 2023, diversity and inclusion ranked fifth among ESG topics linked to corporate sustainability goals, tied with climate change (adaptation and mitigation).

In practice, approximately 89% of companies stated they had implemented some internal initiative on related to this topic in 2023, such as training and development, diverse hiring processes, and diversity commissions and groups. Of the companies with internal initiatives, 81% stated that these measures engaged the operational and management levels, while 78% reported they involved the directorship (Figure 13). The diversity groups addressed by these internal initiatives are gender and disability, followed by race and ethnicity.

Figure 13

## Percentage of companies with internal and external initiatives for diversity and inclusion and hierarchy level

Source: Iba (2023) | Developed by: ESG Tech



# 89%

of companies have internal diversity and inclusion initiatives

Additionally, half of the companies that participated in the 2023 survey stated they also participate in external diversity and inclusion initiatives such as Movimento Mulher 360, Rede Mulher Florestal and the Coalizão Empresarial para Equidade.



# Sustainability and governance strategy and reporting

Most member companies that participated in the survey reported having an established sustainability strategy approved by the leadership, with metrics to monitor progress and performance.

The main topics addressed in company goals were water management (88%), waste management (85%), energy management (69%), health and safety (58%), diversity and inclusion (50%) and climate change (adaptation and mitigation, 50%).

Furthermore, 58% of companies reported that variable compensation for their upper-level leadership is linked to ESG targets. In practice, this represents a crucial step towards integrating ESG into the organization's business strategy: without engaging leadership, it will be hard for this agenda to reach its strategic potential. Establishing goals linked to compensation for top leadership demonstrates a tangible commitment that encourages a culture of responsibility and transparency.

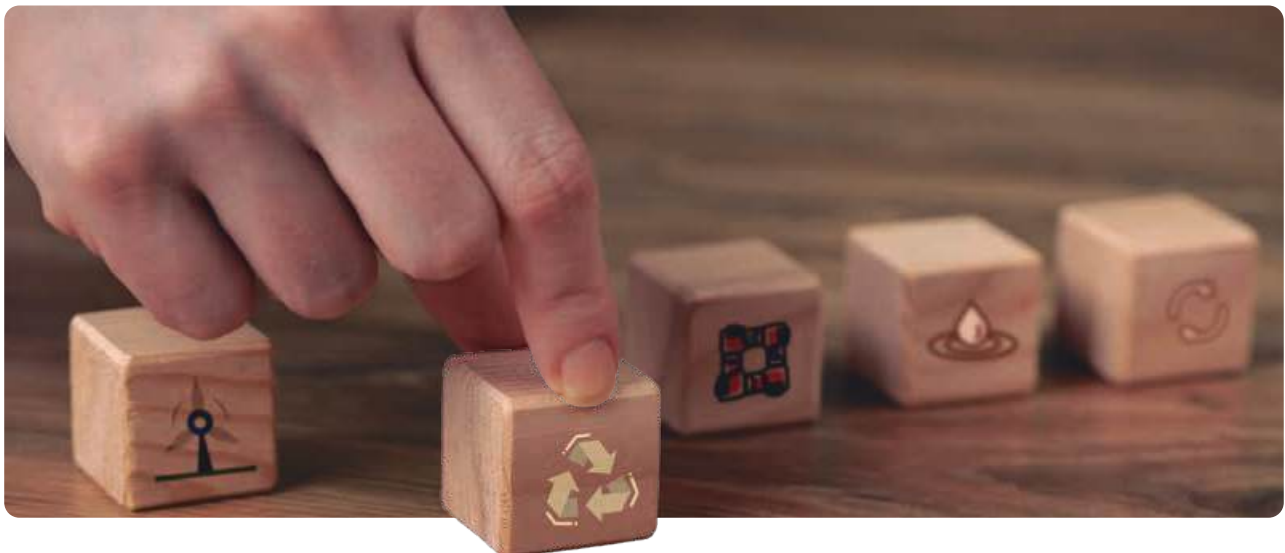
Effective and sustainable strategies are guaranteed by strong and well-established governance and a commitment to transparent reporting. All the member companies that completed the survey



## 58%

of companies reported that variable compensation for the upper-level leadership is linked to ESG targets

Freepik



stated that they had some policy addressing topics like compliance, anti-corruption, transparency, ethics and integrity. And 77% published their performance in sustainability reports or other similar tools that address ESG topics.

Other topics that remain very relevant among the policies and codes were the environment, managing impacts, and health and safety, which were reported by 96% and 93% of responding member companies, respectively.

Another highlight is that 54% of the companies reported managing their suppliers with regard to ESG aspects beyond the compliance issues that tend to be observed in commercial relationships. This practice is in line with the requirements of many internationally recognized voluntary sustainability standards such as the Global Reporting Initiative (GRI), International Sustainability Standards Board (IFRS) and Carbon Disclosure Project (CDP).

## Sustainable financing

Green financing is intended to incorporate environmental, social and government (ESG) criteria into financial decisions, directing investments towards projects that do not just seek profits but also contribute to sustainability. Some examples are green bonds, green debentures, and green loans.

Today, the pulp and paper segment leads Brazilian transactions by financial volume, accounting for 24% of the total. This excellent performance is driven by the fact that some large companies in the sector are able to issue debt internationally (in other currencies), according to a 2023 survey by Febraban. This segment also registered its highest ESG score between 2018 and 2022, according to the KPMG ESG Yearbook (2023).

The member companies allocated these resources to their environmental, operational and social areas. In terms of transparency and using these resources, 28% of member companies that responded to the survey stated that they published their financial results based on international sustainable criteria, using the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations.



# 1/4

of the volume of Brazilian transactions involves the pulp and paper segment









Irani;  
Suzano;  
Melhoramentos.





# 3. PLANTED AREAS



# PLANTED AREAS



## 10.2 million

hectares of planted area

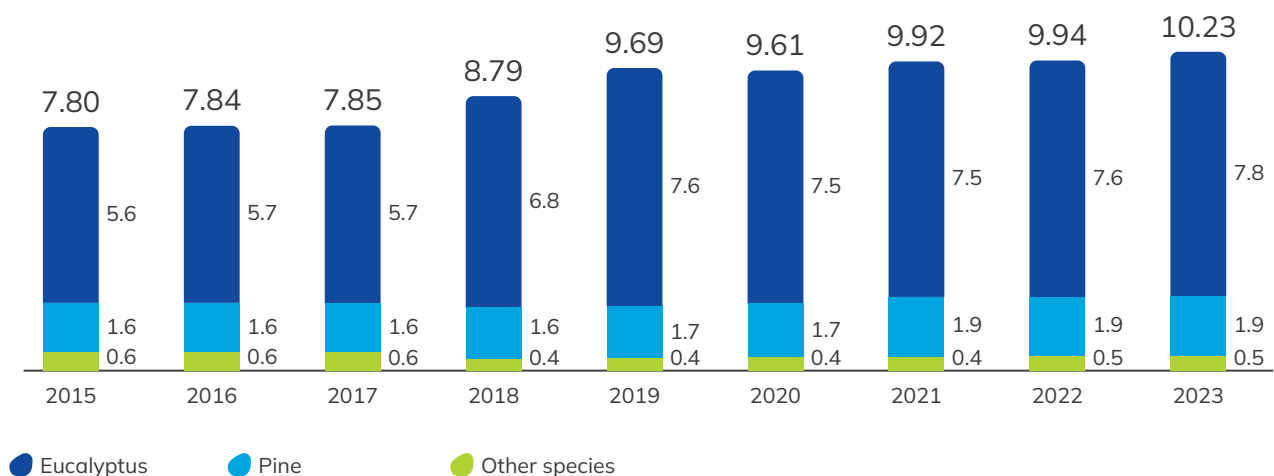
## Planted areas

In 2023 the total area dedicated to planted trees in Brazil passed the 10 million hectare mark for the first time, 3% growth over the previous year. This data was obtained from mapping, using satellite images analyzed by Canopy Remote Sensing Solutions. Eucalyptus was the most common type of planted tree, covering 7.8 million hectares and accounting for 76% of total planted area. This number represents 41% growth over the past ten years, highlighting the increasing importance of this crop in Brazil's forest economy (Figure 14).

Figure 14

Distribution of planted area in Brazil, by species 2015–2023 [million hectares]

Source: Canopy Remote Sensing Solutions (CANOPY) [www.canopyrss.tech](http://www.canopyrss.tech) (2023) | ESG Tech (2023)







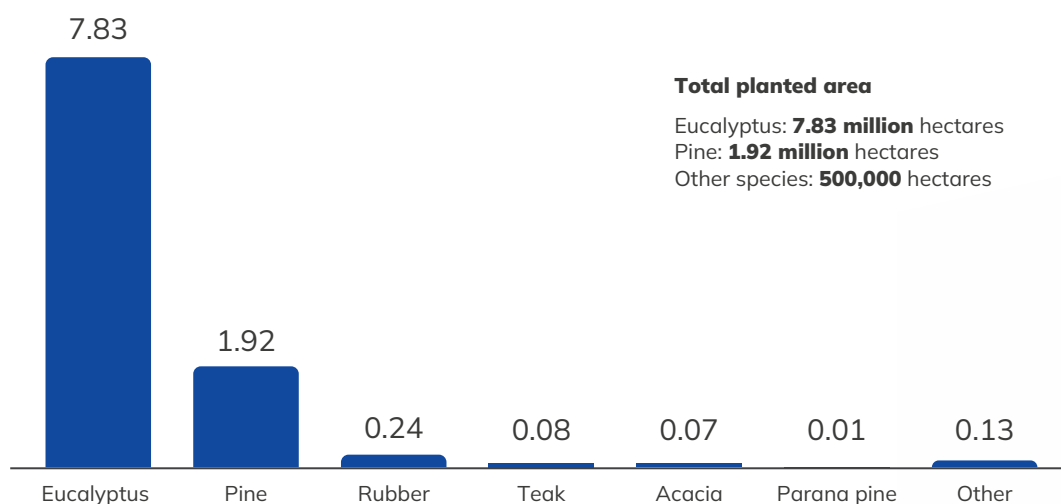
Cenibra

Areas planted with pine cover 1.9 million hectares, corresponding to 19% of the total for the sector. Other species occupy roughly 500,000 hectares, including acacia, teak, rubber and Parana pine (*Araucara angustifolia*), making diverse contributions to the makeup of the country's forests (Figure 15).

Figure 15

### Planted area in Brazil in 2023 by species [million hectares]

Source: CANOPY (2023) | ESG Tech (2023)

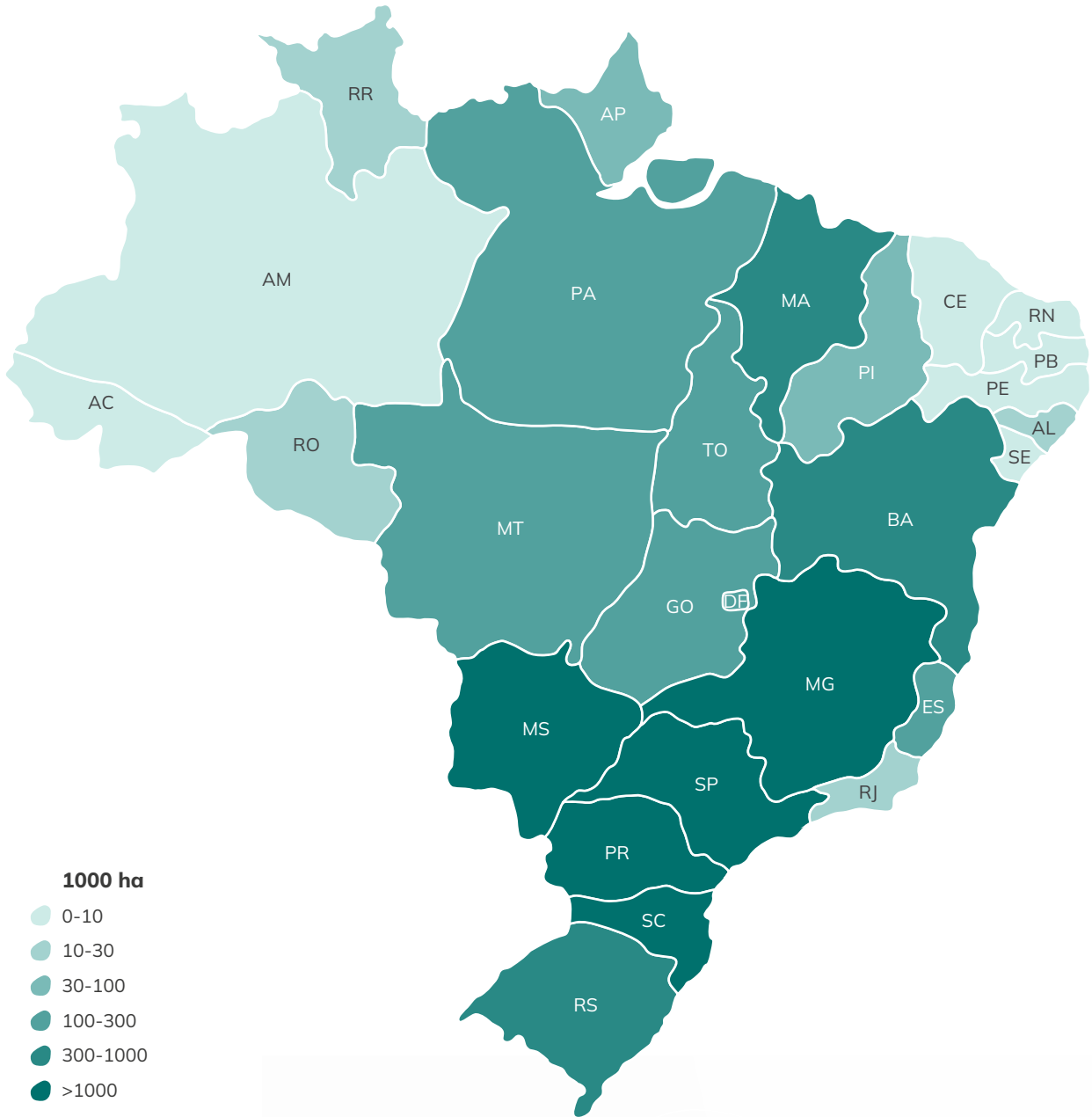


As for the distribution of planted forests across Brazil, the leading states are Minas Gerais, Mato Grosso do Sul, São Paulo, Paraná and Santa Catarina, which combine to account for 69% of the country's planted area (Figure 16).

Figure 16

## Heat map of total planted forest area in 2023 [thousand hectares]

Source: CANOPY (2023) | Developed by: ESG Tech



1000 ha

- 0-10
- 10-30
- 30-100
- 100-300
- 300-1000
- >1000

Table 2

Distribution of planted area in 2023, by state [hectares]

State	Eucalyptus	Pine	Other*	Total
MG	2,200,351	34,211	27,769	2,262,331
MS	1,329,132	3,733	22,580	1,355,445
SP	997,543	153,051	130,259	1,280,853
PR	438,721	710,837	10,393	1,159,951
SC	326,134	719,199	4,993	1,050,326
RS	616,976	286,922	70,108	974,006
BA	643,094	41	13,673	656,809
MA	290,076	-	12,300	302,376
ES	263,946	1,982	14,675	280,604
MT	128,057	721	82,193	210,971
PA	175,125	35	32,972	208,132
GO	143,180	6,238	22,943	172,361
TO	101,625	-	7,561	109,186
AP	85,386	109	173	85,668
PI	32,062	-	260	32,321
RJ	28,450	65	357	28,873
RR	-	-	22,522	22,522
AL	16,965	-	5	16,970
RO	2,588	7,751	2,066	12,405
SE	3,904	-	-	3,904
PE	1,289	-	133	1,421
CE	78	-	578	656
AM	390	-	-	390
AC	23	-	141	164
PB	143	-	-	143
RN	44	-	-	44
<b>TOTAL</b>	<b>7,825,282</b>	<b>1,924,894</b>	<b>478,654</b>	<b>10,228,830</b>

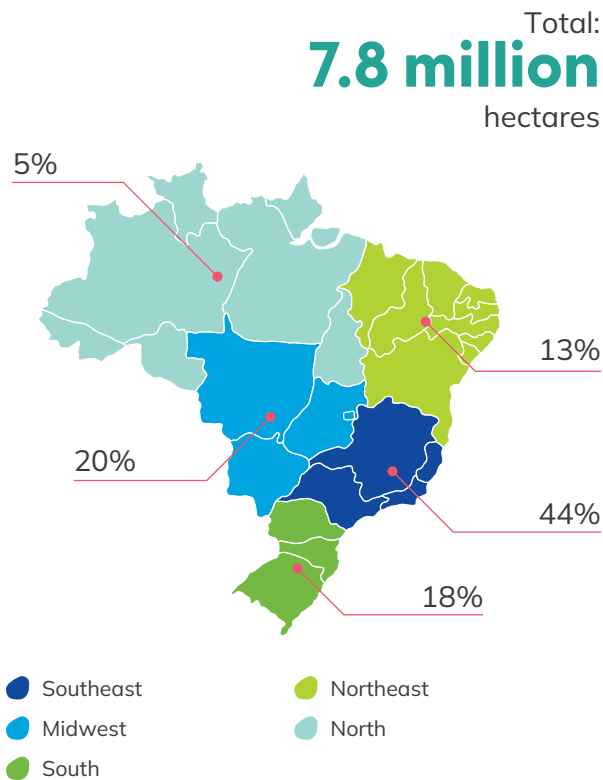


Eucalyptus plantations (Figure 17) are concentrated in the Southeast of the country, home to 44% of the national total with 3.5 million hectares; the state of Minas Gerais stands out with 63% of plantations in this region. The Midwest has also emerged with areas that are expanding, totaling 1.6 million hectares of planted eucalyptus forests.

Figure 17

### Share of area planted with eucalyptus in 2023, by region [%]

Source: CANOPY (2023) | Developed by: ESG Tech

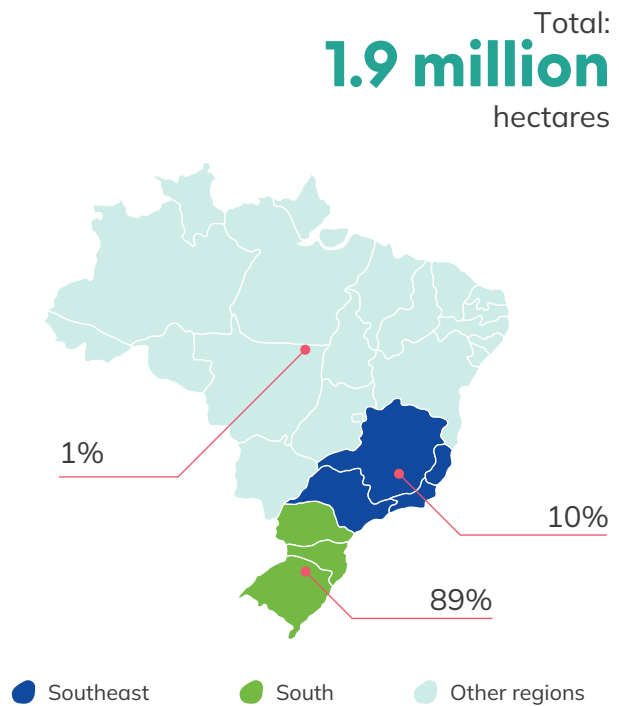


For pine plantations, the South predominates due to soil and climate characteristics in this region that favor this species (Figure 18). This region accounts for 89% of the total area planted with pine forests in the country, and the state of Santa Catarina leads with 719,000 hectares.

Figure 18

### Share of area planted with pine in 2023, by region [%]

Source: CANOPY (2023) | Developed by: ESG Tech

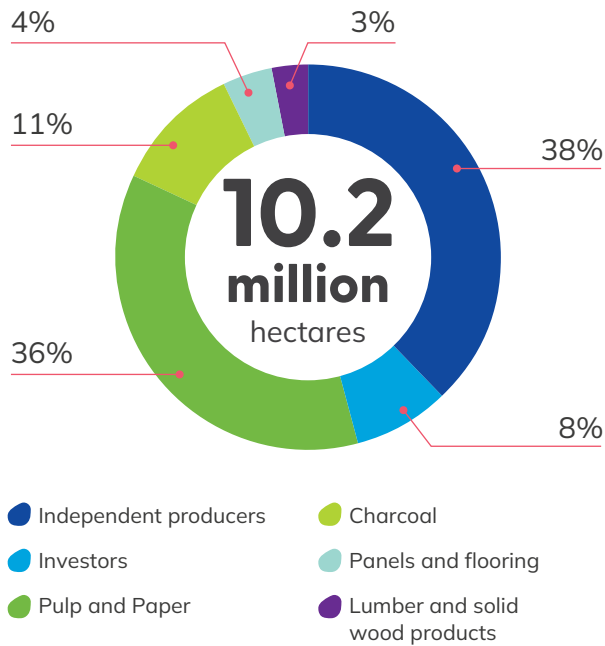


The distribution of planted area according to landowner is shown in Figure 19. Most eucalyptus plantations in Brazil belong to independent producers, followed by pulp and paper companies.

Figure 19

### Share of planted area by landowner [%]

Source: Iba (2023) | Developed by: ESG Tech | Note: Independent producers are individuals that plant forests using their own resources; investors are timber investment management organizations (TIMOs).



**54%**

of planted area in Brazil belongs to producers of pulp, paper, panels, laminate flooring, charcoal and lumber

Cenibra





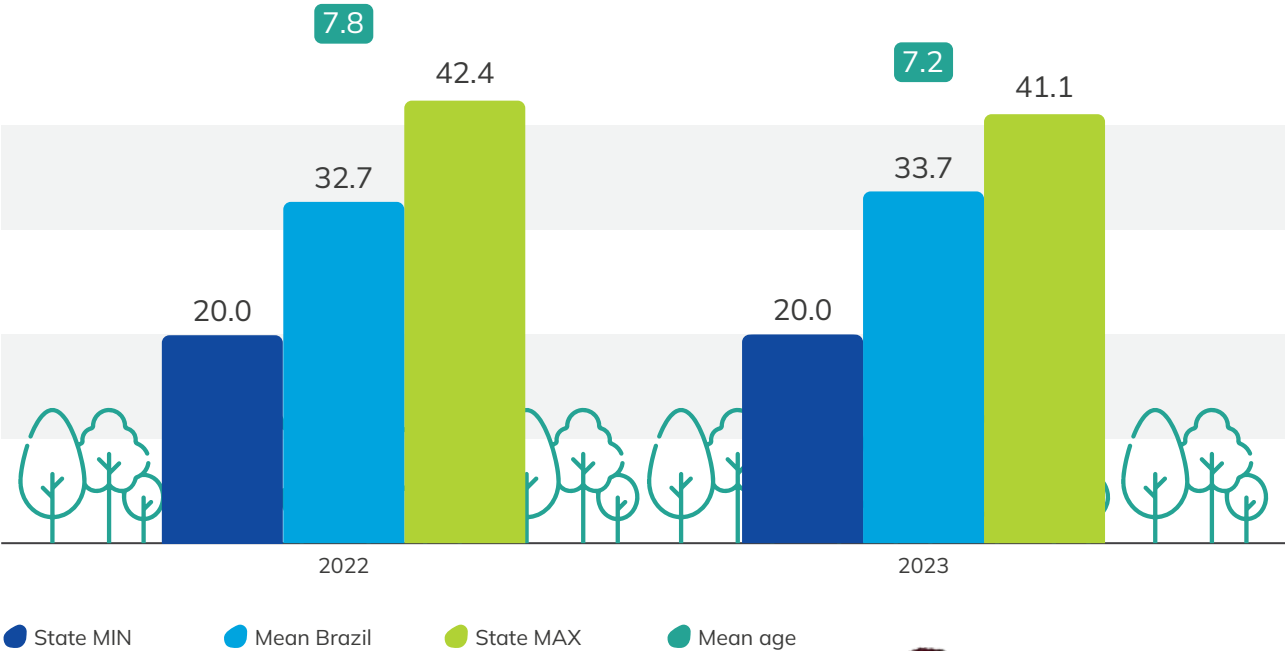
# Productivity

Eucalyptus productivity in Brazil was estimated at 33.7 m<sup>3</sup>/ha/yr (over bark), with a mean age of 7.2 years. The state with the lowest mean productivity registered 20 m<sup>3</sup>/ha/year, while the state with the highest mean productivity reached 41.1 m<sup>3</sup>/ha/year (Figure 20).

Figure 20

## Eucalyptus plantation productivity [m<sup>3</sup>/ha/yr]

Source: Ibá & ESG Tech (2023) | Developed by: ESG Tech  
 Note: State MIN and MAX refer to the Brazilian states with the lowest and highest productivity



Suzano



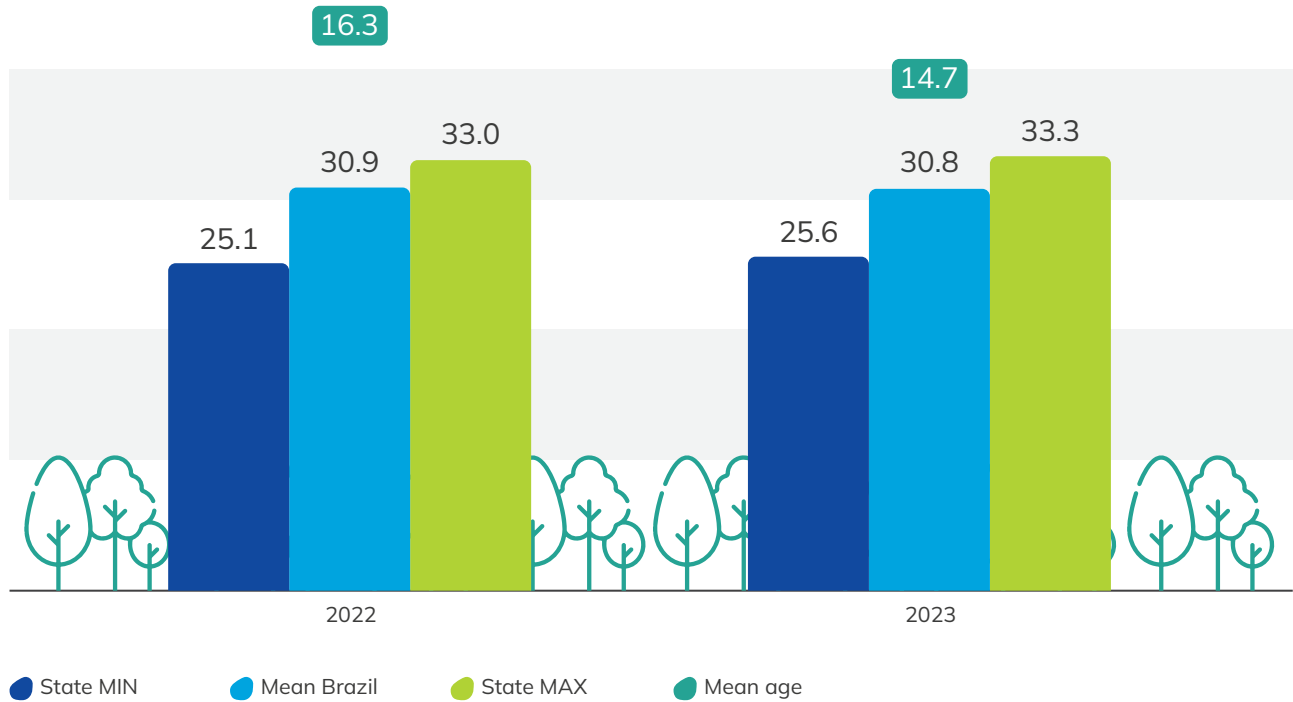
Pine productivity in Brazil was estimated at 30.8 m<sup>3</sup>/ha/year (over bark), with an average age of 14.7 years. In the state with the lowest

productivity, this value was 25.6 m<sup>3</sup>/ha/yr, while in the state with the highest value it reached 33.3 m<sup>3</sup>/ha/yr (Figure 21).

Figure 21

### Pine plantation productivity [m<sup>3</sup>/ha/yr]

Source: Iba & ESG Tech (2023) | Developed by: ESG Tech



# Integrated crop, livestock and forest systems

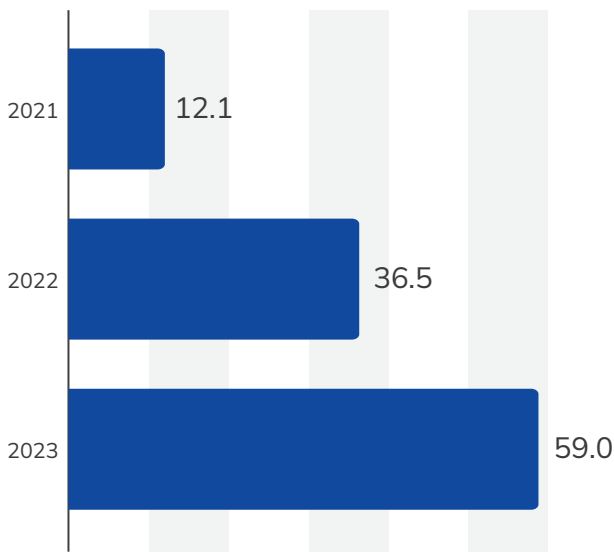
There was significant growth in areas with integrated crop, livestock, and forest systems (ICLF); these include production systems containing forests, namely agroforestry systems involving both planted crops and livestock, as well as schemes that include all three. ICLF is one of the practices considered within the sector's ABC+ Plan for adaptation to climate change and low agricultural carbon emissions as part of the plan for sustainable development (2020-2030), intended to advance sustainable technological solutions for rural production and boost income for rural producers with a focus on agriculture and addressing climate change.

In 2021, the country had 12,100 hectares involving production systems that integrated forests; this number rose to 59,000 hectares in 2023 (Figure 22). This growth shows significant expansion and reflects a tendency to adopt this practice.

Figure 22

### Areas with ICLF in Brazil [1000 hectares]

Source: CANOPY (2023) | Developed by: ESG Tech



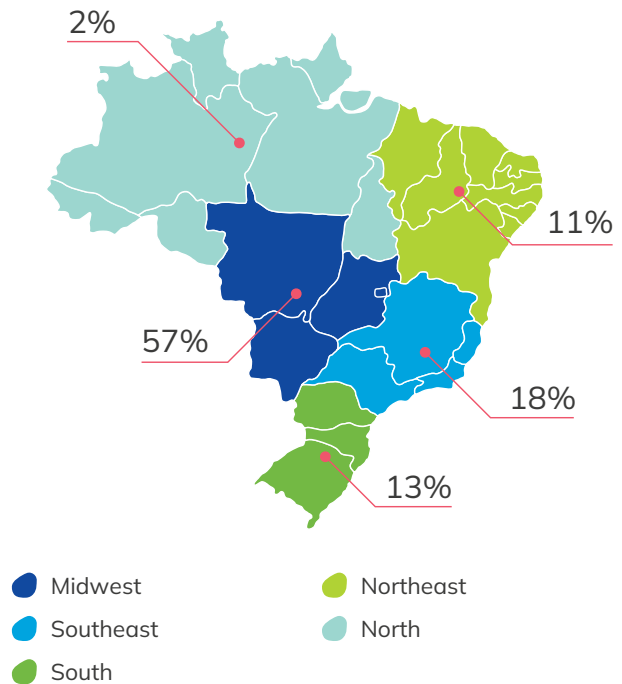
Most of these systems incorporating forests in Brazil are located in the Midwest, where 57% of the national total are located, followed by the Southeast and South with 18% and 13%, respectively (Figure 23).

Mato Grosso do Sul is the leader, concentrating 46% of areas with integrated forest systems in the country. Minas Gerais and Paraná also account for significant shares, with 9,000 and 7,400 hectares, respectively.

Figure 23

### Distribution of areas with ICLF, by region [%]

Source: Canopy (2023) | Developed by: ESG Tech



ICLF offers major potential for growth, and also encourages sustainability in the production of food, fiber, and energy. This approach favors product diversification, boosts the productivity and income of agricultural systems, and also reduces emissions of greenhouse gases that cause global warming.

# Outgrower programs

Outgrower programs play an important role in the expansion, pervasiveness, and promotion of planted forests. This process may involve a wide variety of partnership models, including providing inputs, technical assistance for planting and maintaining forests, bringing environmental risks into compliance, implementing checklists for controlled wood within the arena of forest certification, and analyzing social and labor requirements. It also promotes diversification of the local economy, creating opportunities for small and medium sized producers. In 2023, companies in the sector that participated in the Ibá survey to draft this report stated that they had over 4,500 active forest outgrower contracts. Because a single producer may often have more than one contract, this practice directly benefited approximately 3,600 people and indirectly benefited around 13,100.



Gleison Rezende- Bracell

## Research, development and innovation (R&D&I)

In 2023, Ibá member companies directed a total of R\$ 122 million toward projects in research, development and innovation (R&D&I). These investments resulted in the creation of 315 new projects in the past year alone and the continuation of 420 projects that were already underway, totaling 735 initiatives. These projects mainly focus on boosting competitiveness in the market, for manufacturing as well as forests, and include optimizing processes (30%), developing new products and processes (27%), implementing new technologies (20%), genetic improvement programs (9%) and other topics (14%) (Figure 24).



**R\$122  
million**

went towards projects in research, development and innovation (R&D&I)



Figure 24

## Investments in R&D&I projects

Source: Ibá (2023) | Developed by: ESG Tech

Includes solutions such as improvements in energy efficiency, adopting and testing new raw materials and production formulas, as well as research on new soil and forestry management practices

### Optimizing processes

30%



Includes implementation and testing of technological tools like mechanization, optimization and use/development of specific software

### Implementing technology

20%



27%

### Developing products

Includes production and development of new products and applications, with a focus on bioproducts and opening new markets



9%

### Genetic improvement

This includes research and genetic development for species like eucalyptus and pine, focusing on new clones, propagation methods and other methods



14%

### Other R&D&I projects

Includes the circular economy, byproducts, climate change

For development, 88% of projects utilized internal resources, 65% involved partnerships with public organizations and associations, 59% were conducted in cooperation with universities and 35% collaborated with startups (Figure 25).

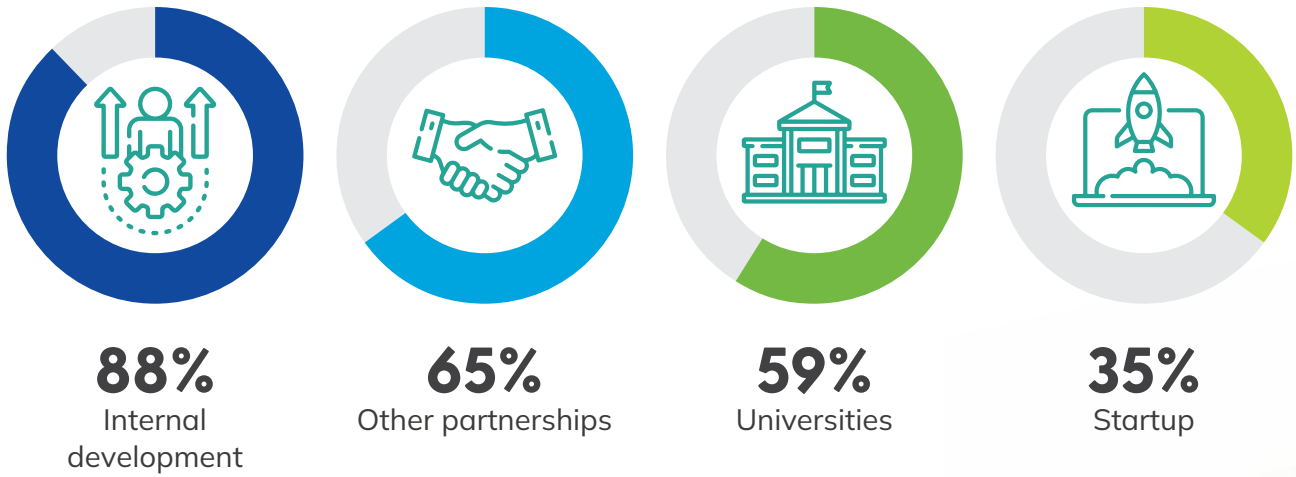
Suzano



Figure 25

## Type of partnership (%)

Source: Ibá (2023) | Developed by: ESG Tech



In recent years, countless investments have been made in technology in the area of forestry, including the development of machinery, use of drones and unmanned aerial vehicles (UAVs) for forest monitoring, digital measurement of wood volumes, and real time oversight of a wide variety of activities. These investments provide significant improvements in forestry management and monitoring. In industrial production, notable progress has been made in developing textile fibers from soluble cellulose pulp, new uses and applications for products made from eucalyptus wood, and new uses for application in paper.

As of December 2023, 1,279 patents or intellectual property requests had been filed, highlighting the sector's investment in the search for innovative solutions. These patents were filed with different objectives that ranged from optimizing manufacturing processes to new chemical compounds. Additionally, in the area of forestry new clones with unique characteristics emerged as the result of a long process of genetic improvement.

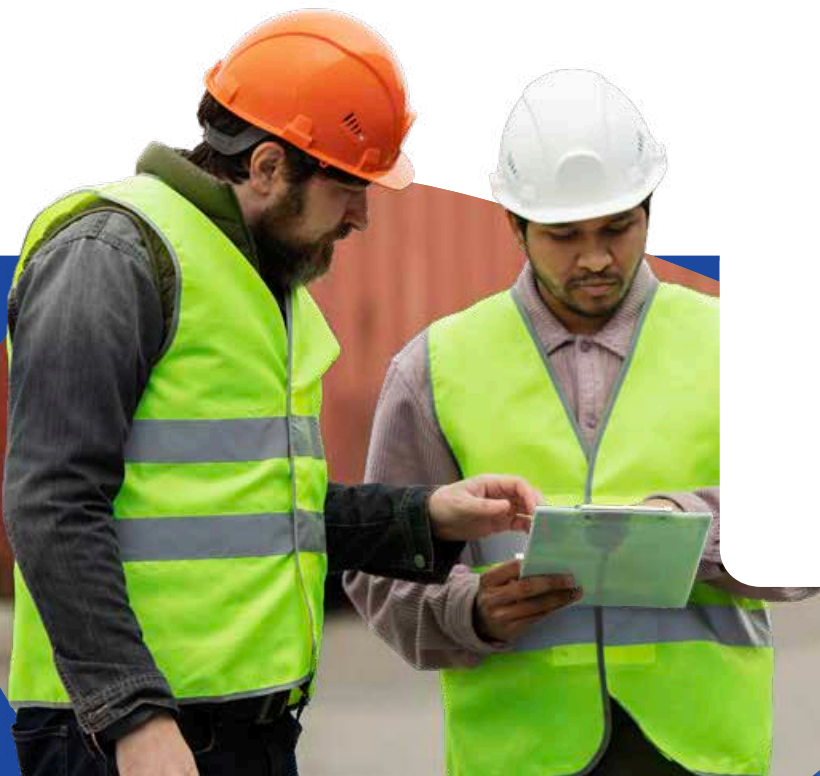
Member companies also adopted a variety of digital tools, including business intelligence solutions for management and operational analysis in all areas, developing software and apps for industrial and forest activities as well as systems to automate administrative tasks, preventative maintenance on equipment and advanced process control. This makes it possible to predict critical equipment failures and optimize manufacturing processes.



# 1,279

patents or intellectual property requests were filed









# 4. ECONOMIC ASPECTS AND INDUSTRIAL PRODUCTION IN THE SECTOR



# ECONOMIC ASPECTS AND INDUSTRIAL PRODUCTION IN THE SECTOR



The planted tree sector has gained stature in Brazil's economy, both locally and internationally. This large-scale industry that is part of the bioeconomy shows that it is possible to produce as well as preserve, while simultaneously generating wealth. Besides exporting abroad, in Brazil this sector opens a new factory every year and a half.

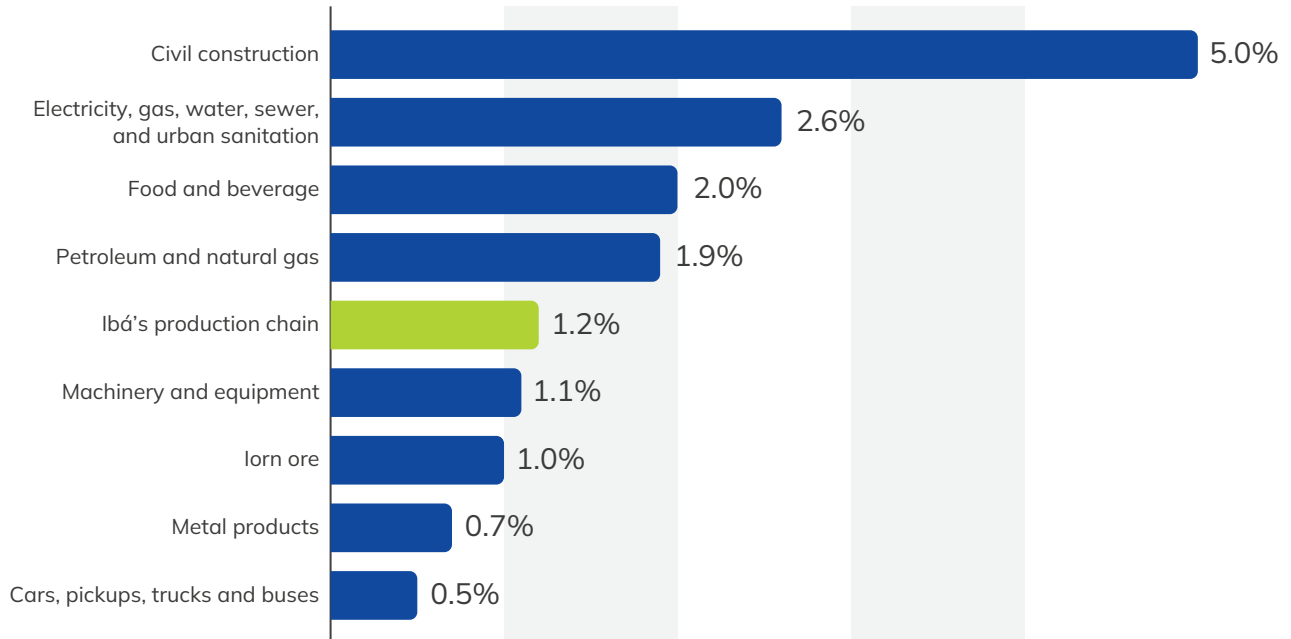
Compared to other segments of the Brazilian economy involving a total of 34 activities, the planted tree industry surpassed machinery and equipment (1.1%) and moved to 5th place in the ranking for share of national GDP (Figure 26), after only civil construction (5%), electricity, gas, water, sewer, and urban sanitation (2.6%), food and beverage (2%) and oil and gas (1.9%).

Suzano

Figure 26

## Share of GDP for the forest-based production chain compared to other sectors of the economy, past 10 years

Source: IBGE (2023) | Analysis: ESG Tech | Note: the historical series was updated to include wood furniture



The gross value of production from the planted tree sector reached R\$ 202.6 billion in 2023, exhibiting a compound annual growth rate (CAGR) of 3.2% over the past ten years.

The forest-based production chain accounted for 0.9% of Brazilian GDP.

In 2023, forest-based production accounted for 4.2% of agricultural GDP and 4% of manufacturing GDP. Among the components that make up Brazilian demand, forest products accounted for 1.9% of intermediate consumption and 0.5% of household consumption, including gross capital formation.

As for production and imports, in 2023 the planted tree production chain accounted for 1% and 0.4%, respectively.



# 0.9%

of Brazilian GDP came from the forest production chain



# Exports and trade balance

Within the Brazilian context, the planted tree industry has continued to grow continuously, playing a key role in promoting the bioeconomy in both domestic and foreign markets. This reinforces the strategic importance of the forest-based sector to Brazil's sustainable economic development.

Even amid a challenging global scenario marked by fluctuating commodity prices, changes in post-pandemic inventories, and volatile global demand, the Brazilian sector exhibits strong global competitiveness and maintains strong exports that reach US\$ 12.7 billion (Figure 27). This is the country's second-best export performance over the past 10 years, with a compound annual growth rate (CAGR) of 4.5% during this period. The sector also accounted for 3.9% of domestic exports, playing an important role in the national economic scenario.



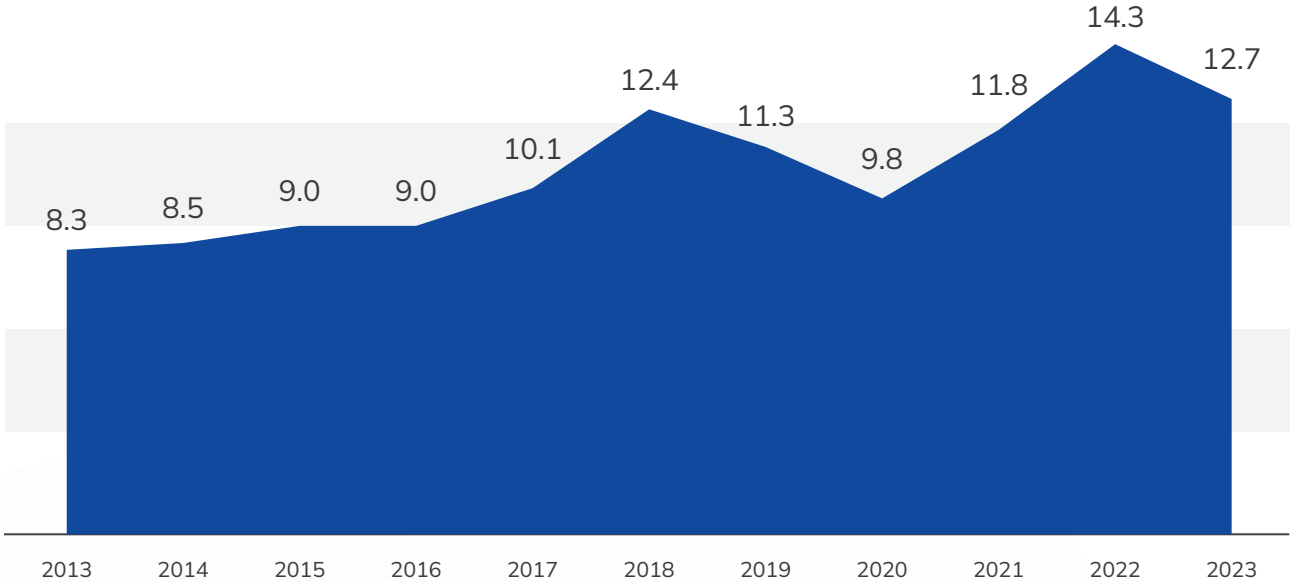
**US\$ 12.7 billion**

in exports from the sector

Figure 27

Exports from the sector [billion US\$]

Source: COMEX (2023) | Developed by: ESG Tech and Iba

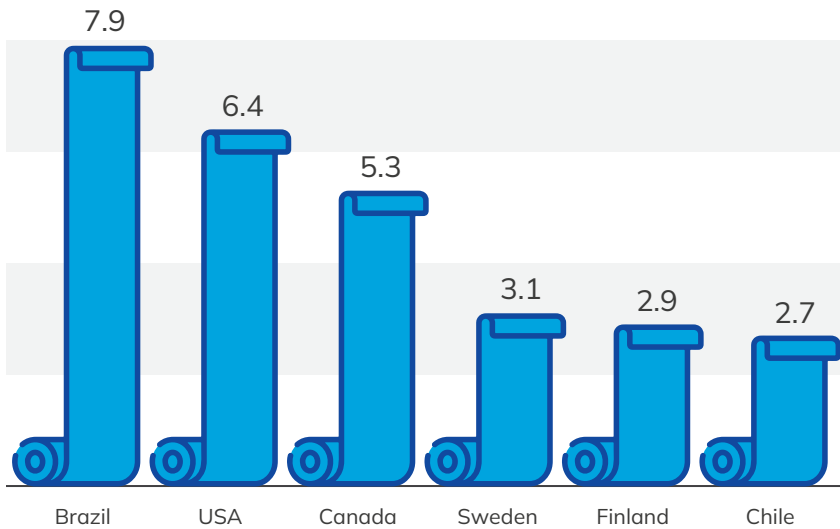


Brazil remains the world leader in cellulose exports with approximately US\$ 1.5 billion more than the second-place exporter, the United States (Figure 28). Cellulose pulp continued as the main product exported by the forest-based sector, representing 63% of total exports (Figure 29).

Figure 28

### Leading pulp producers - 2023 [billion US\$]

Source: Comtrade (2023) | Developed by: ESG Tech



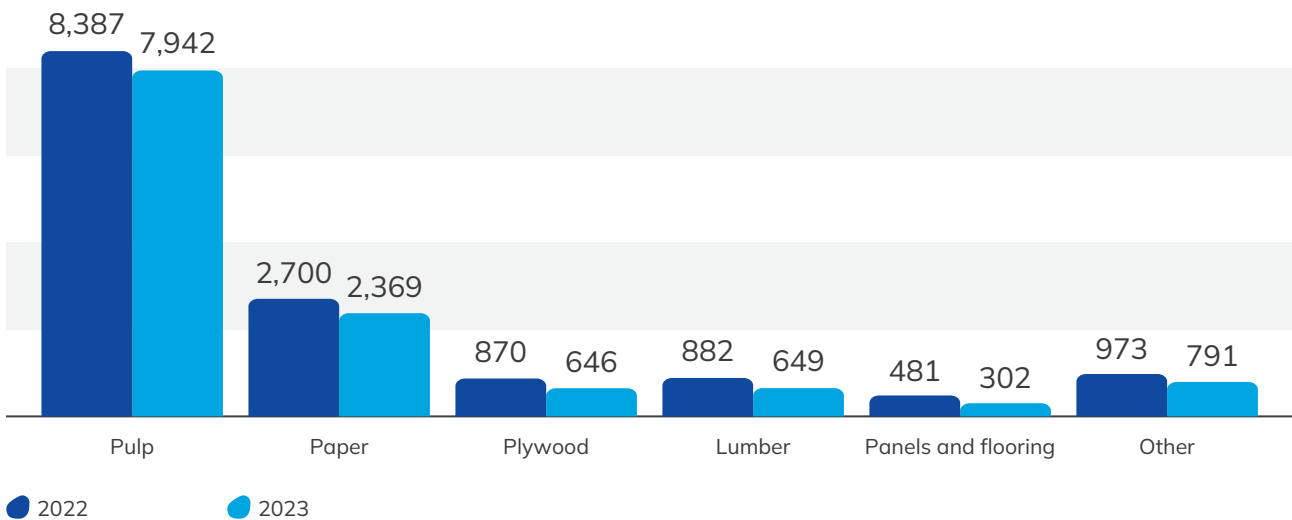
**pulp**

Brazil is the world's leading exporter of cellulose pulp

Figure 29

### Exports from the sector, by product [million US\$]

Source: COMEX (2023) | Developed by: ESG Tech and Ibdá

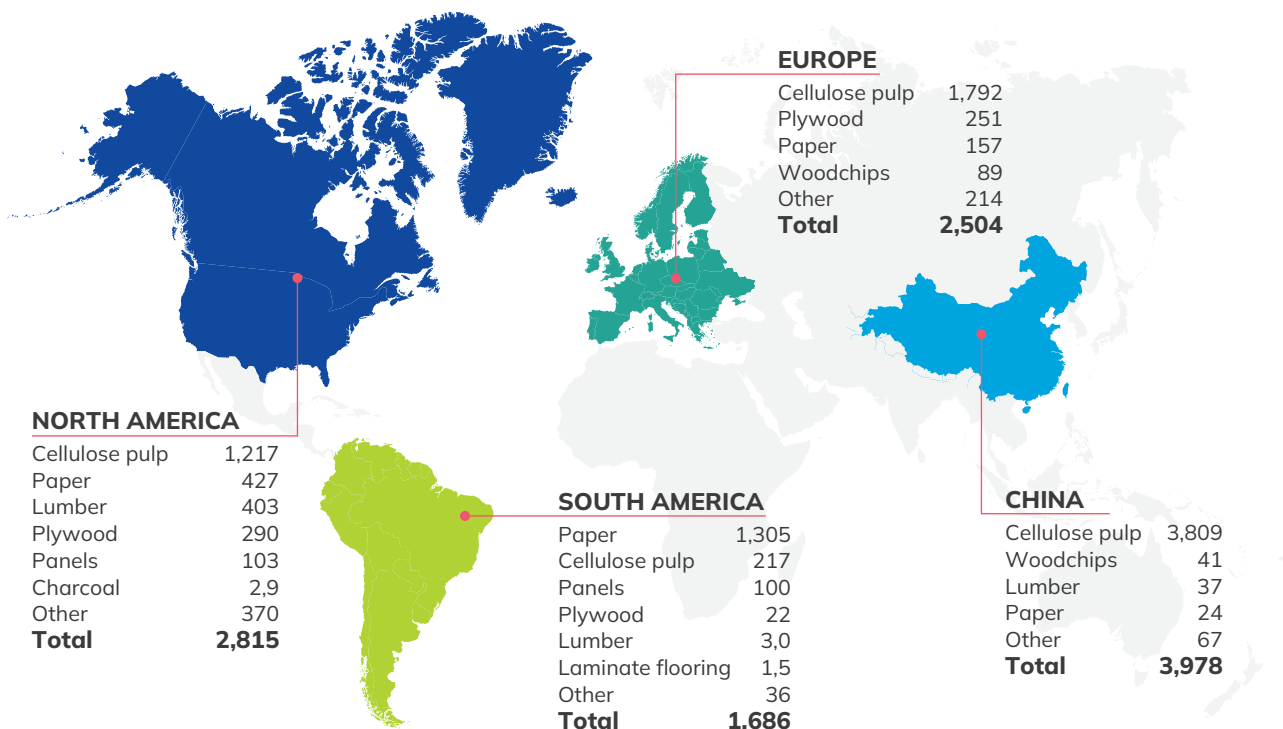


Together, Asia, North America and Europe were the destination for 73% of exports from the planted tree sector in 2023. China received 31% of total exports, the equivalent of US\$ 4 billion, a 16% increase compared to 2022. North America continues as the second leading destination for exports, with US\$ 2.8 billion. Exports to Europe dropped 20% compared to 2022, but still accounted for 20% of total exports from Brazil with US\$ 2.5 billion (Figure 30).

Figure 30

## Leading export destinations for the planted tree sector [million US\$]

Source: COMEX (2023) | Developed by: ESG Tech and Iba



In terms of imports, Brazil is reducing its international purchases of forest-based products. In 2014 these products corresponded to 0.7% of all Brazilian imports, while in 2023 this share dropped to 0.5%. That same year, forest-based products contributed roughly 1% to domestic production.

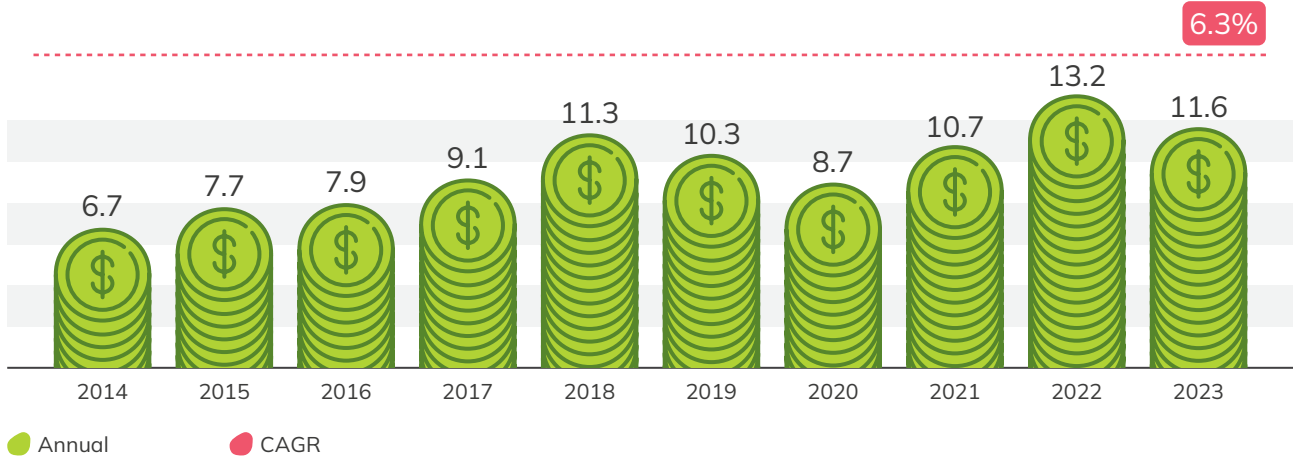
The trade balance for the forest sector consequently amounted to US\$ 11.6 billion in 2023, surpassing historical values and reflecting a compound annual growth rate (CAGR) of 6.3% for the past ten years (Figure 31).



Figure 31

### Total trade balance over time [billion US\$]

Source: COMEX (2023) | Developed by: ESG Tech and Ibá

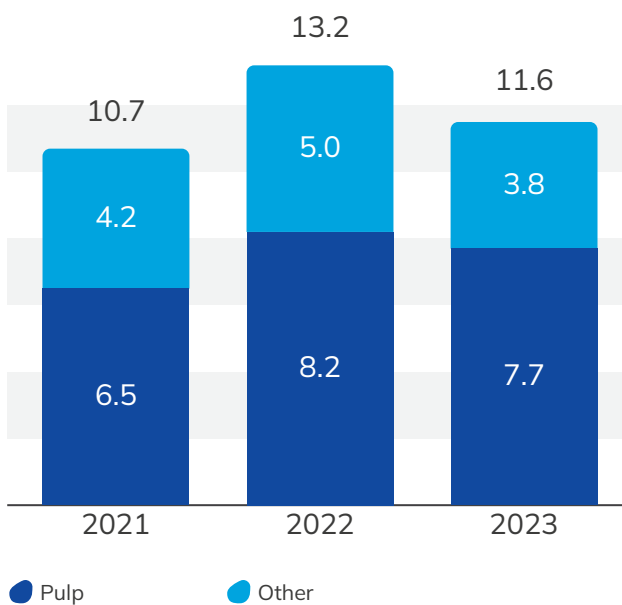


Cellulose pulp continues to be a major contributor to the sector's trade balance, accounting for 66%, a significant and considerable increase of 44% compared to 2022 (Figure 32). Besides cellulose, other notable products are paper and other derivatives such as packaging, panels and flooring.

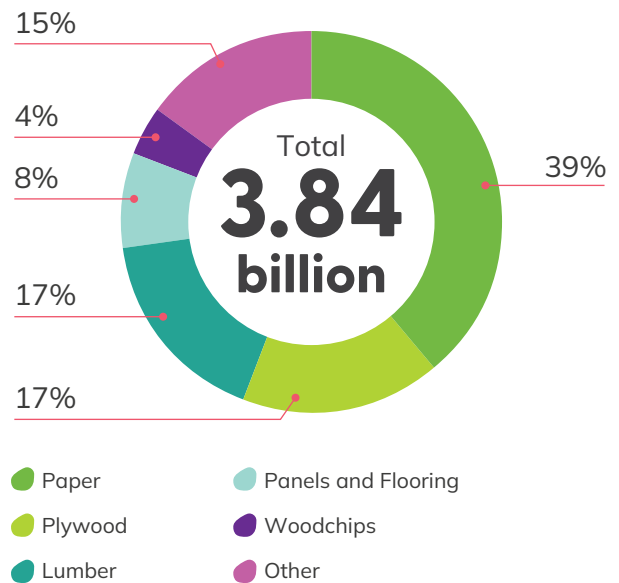
Figure 32

### Trade balance, by product [billion US\$]

Source: Comex (2023) | Developed by: ESG Tech and Ibá



### Trade balance for other products, 2023 [billion US\$]



# Forest-based industry



**R\$105 billion**

in investments in expansion projects in the sector

This sector is resilient and able to adapt. Its strategic importance to the domestic economy can be seen in its robust investment portfolio, which currently totals R\$ 105 billion in expansion projects planned for the next five years, reinforcing its trajectory of growth and competitiveness within the global context.

Ibá's production chain includes 125 manufacturing facilities and distribution centers located in all regions of the country.

Figure 33

Location of manufacturing units and distribution centers belonging to Ibá member companies

Source: Ibá (2023) | Developed by: ESG Tech



# Pulp production

In 2023, Brazilian pulp production reached a landmark 24.3 million tons, including 21.3 million tons of short-fiber pulp, 2.5 million tons of long-fiber pulp, and 0.5 million tons high-yield pulp, with a 4.4% CAGR over the past ten years (Figure 34). Pulp exports remain strong, staying above the 18 million ton mark for the second time in history. Meanwhile, the internal market absorbed 6.2 million tons.

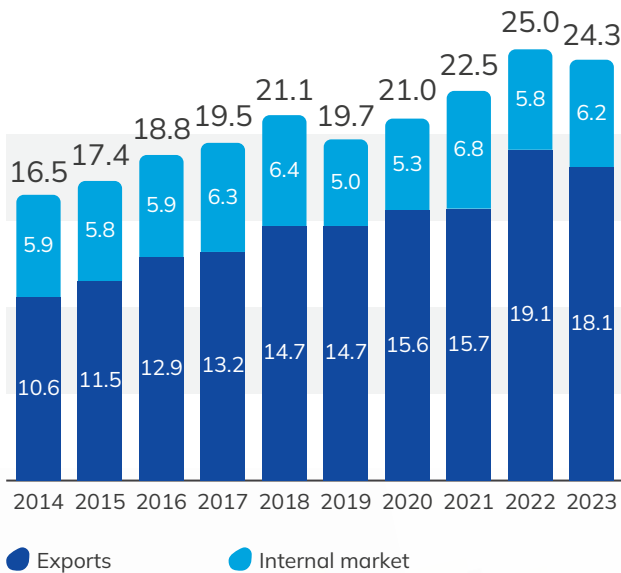
Brazil leads the world in exports of this product, and is the second-largest global producer (Figure 35), behind only the United States.



Suzano

Figure 34

Destination of Brazilian pulp production [million tons]



Brazilian pulp production [million tons]

Source: Ibá (2023) | Developed by: ESG Tech

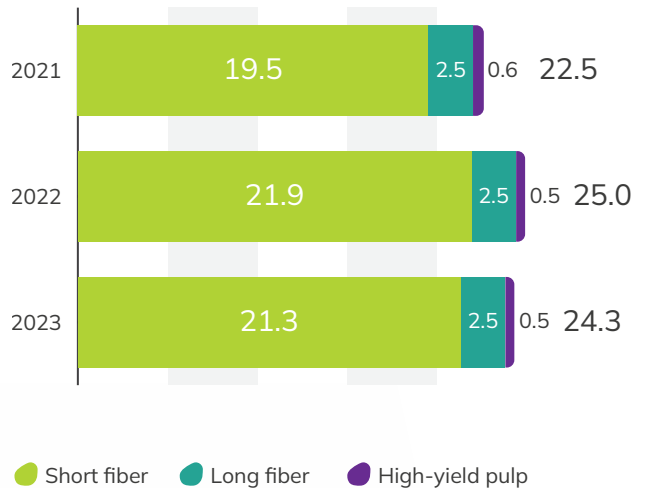
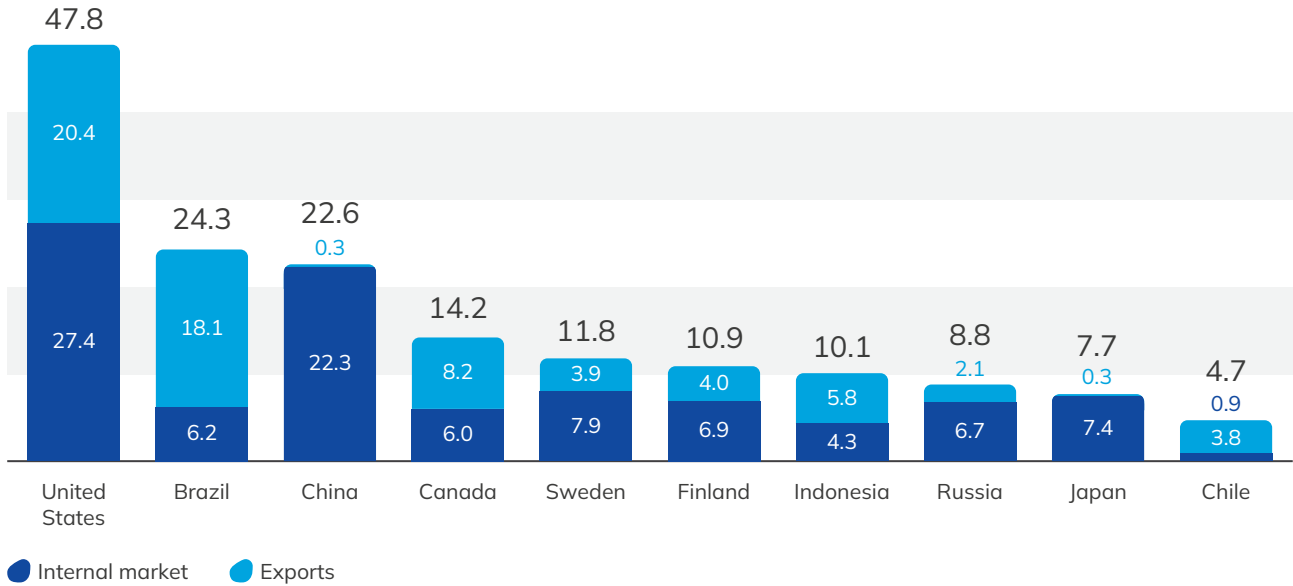




Figure 35

## Leading pulp-producing countries [million tons]

Source: Brazil: Ibá (2023); Indonesia and Russia and internal market for other countries: FAO (2022); Exports: Comtrade (2023) | Developed by: ESG Tech

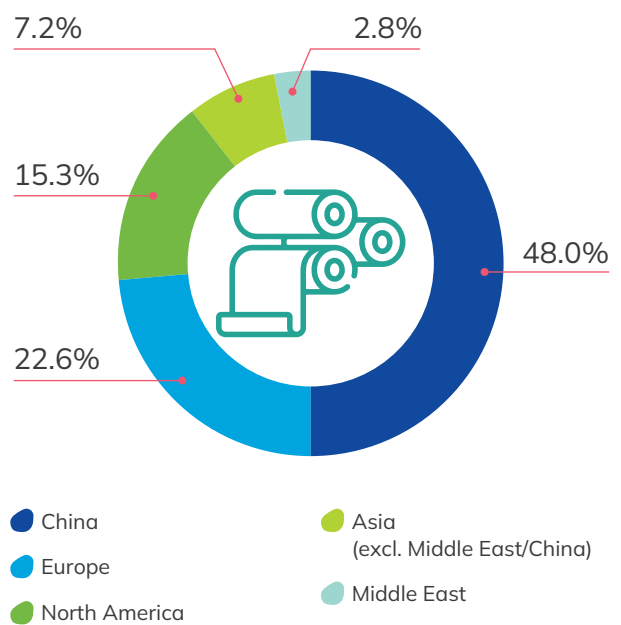


In 2023, China and Europe continued as the leading destinations for Brazilian pulp exports, with 48.0% and 22.6%, respectively (Figure 36). In the planted tree sector, pulp accounts for 63% of exports by value, with its share in this sector continuing to expand compared to 2022.

Figure 36

## Leading destinations for Brazilian pulp exports from the planted tree sector in 2023 [%]

Source: COMEX (2023) | Developed by: ESG Tech and Ibá



Daniel Andreotti



# Paper production

With a slight 1.8% reduction compared to 2022, Brazil produced 10.8 million tons of paper in 2023, demonstrating a CAGR of 0.5% for the past ten years (Figure 37). The domestic market remained strong as the leading destination, absorbing 79.8% of volume produced (8.6 million tons), a 1.2% increase compared to 2022. The remaining 2.2 million tons were exported.



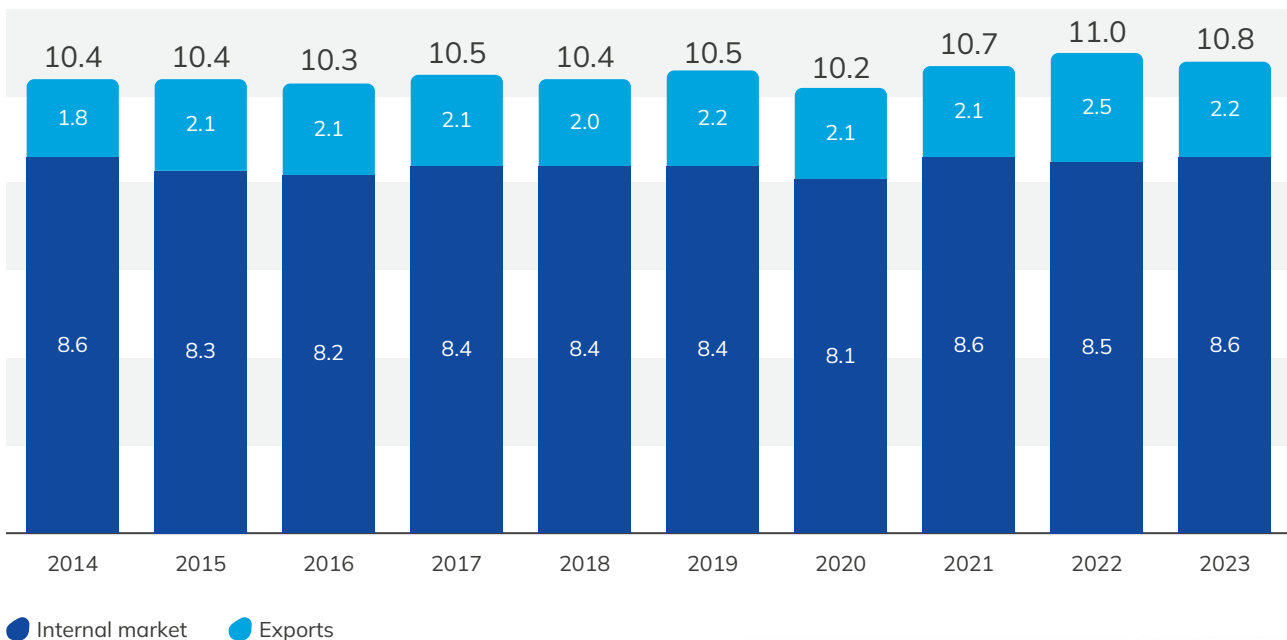
# 10.8 million

tons of paper produced

Figure 37

Destinations for paper production [million tons]

Source: Ibrá (2023) | Developed by: ESG Tech

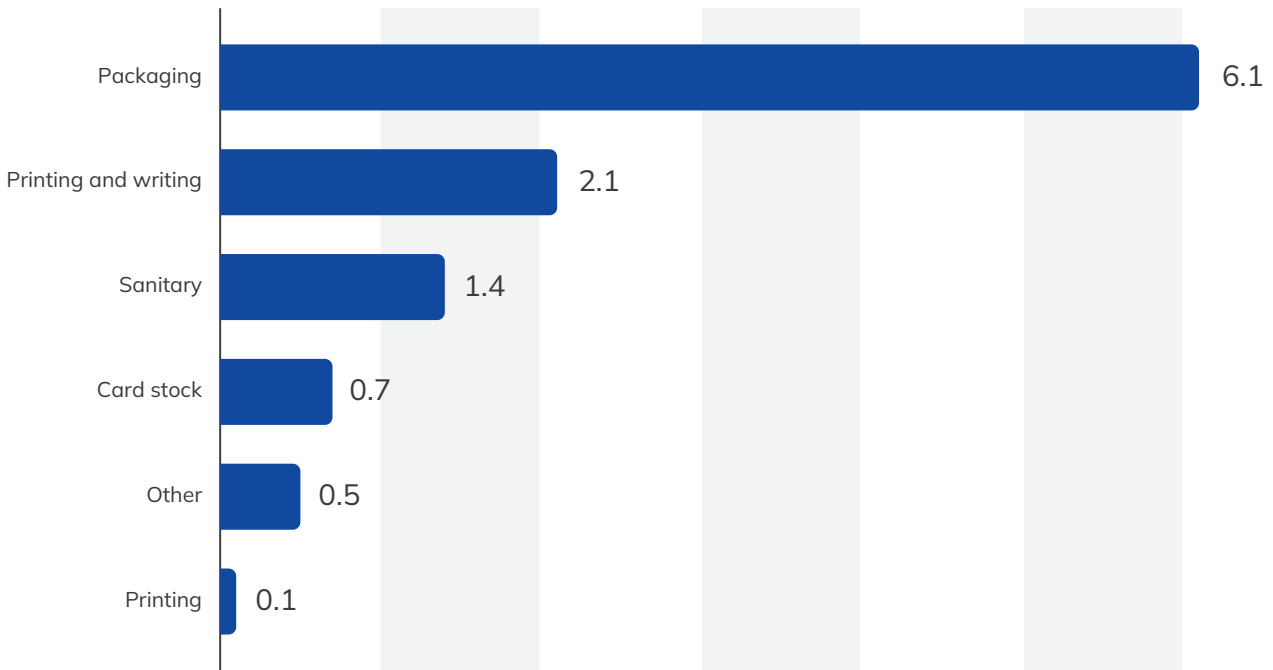


In general, Brazil's production of all types of paper decreased slightly compared to the previous year, by 1% on average, except for paperboard and printing and writing paper. Paper for packaging continued to lead production, accounting for 56% of the total (Figure 38), and 100% of this paper comes from trees that were grown for this purpose.

Figure 38

### Brazilian paper production in 2023, by type [million tons]

Source: Iba (2023) | Developed by: ESG Tech

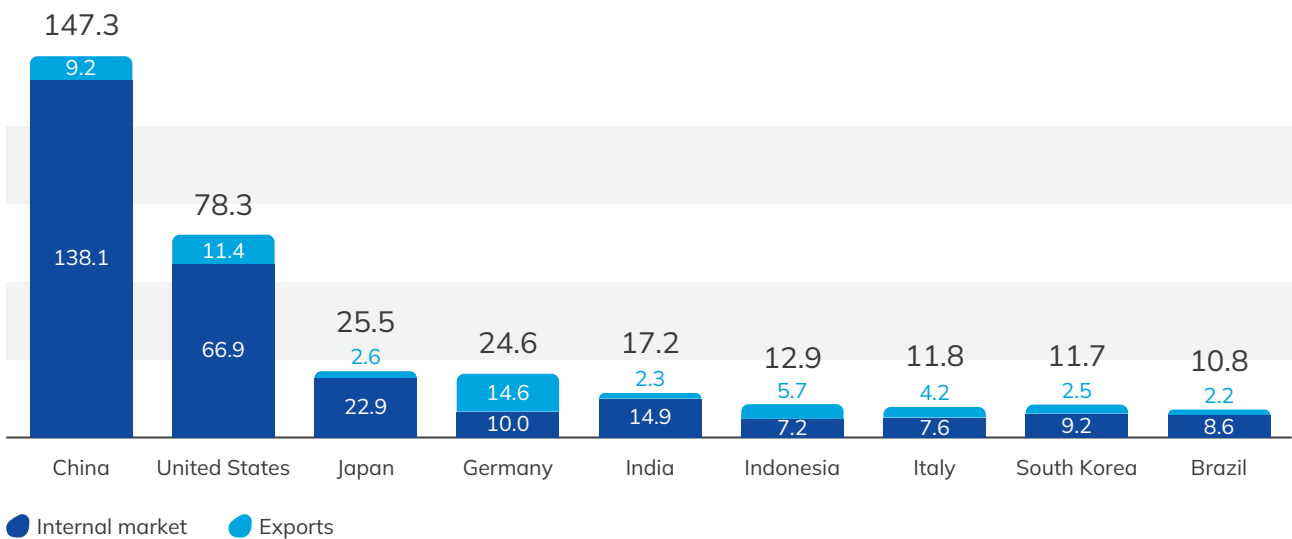


With production of 10.8 million tons and growth of 4% over the past five years, Brazil remains in ninth place among global paper producers (Figure 39); China continues as the world's largest producer.

Figure 39

### Leading paper-producing countries in 2023 [million tons]

Source: FAO (2022) | Iba & ESG Tech (2023)



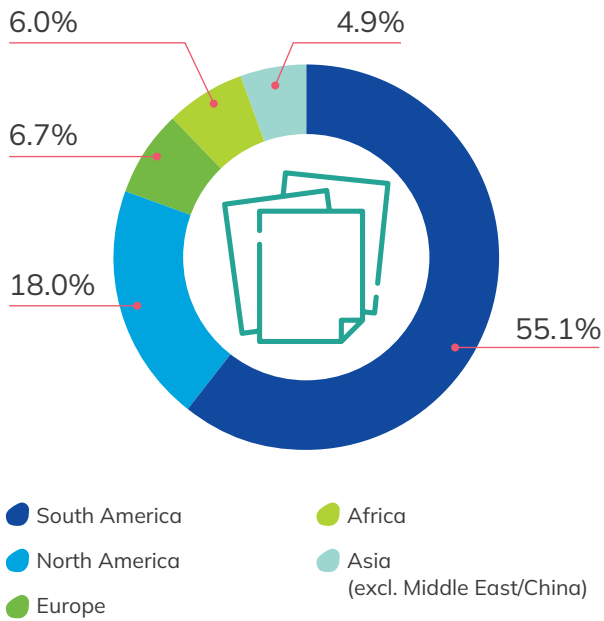


South America is the main destination for Brazilian paper exports, accounting for 55.1%, followed by North America with 18% (Figure 40).

Figure 40

### Leading destinations for Brazilian pulp exports from the planted tree sector in 2023 [%]

Source: COMEX (2023) | Developed by: ESG Tech and Ibdá



# 55.1%

of Brazilian paper exports go to Latin America

Freepik





# 1.5%

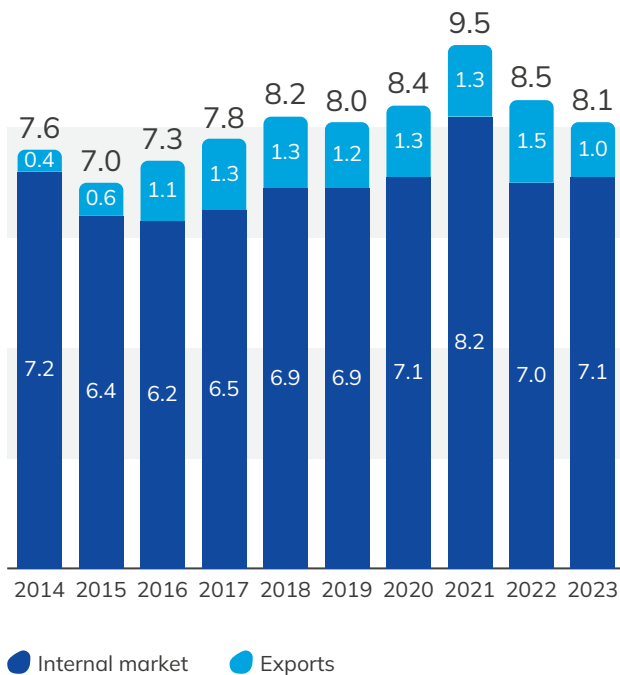
increase in domestic sales of wood panels

# Wood panel production

Domestic sales of wood panels grew 1.5% compared to 2022 to reach a total of 7.1 million m<sup>3</sup>, with a CAGR of 0.7% over the past ten years (Figure 41). MDF panels accounted for 62% and totaled 4.4 million m<sup>3</sup>, a 4.2% increase compared to 2022; sales of MDP panels fell 2.7% in 2023.

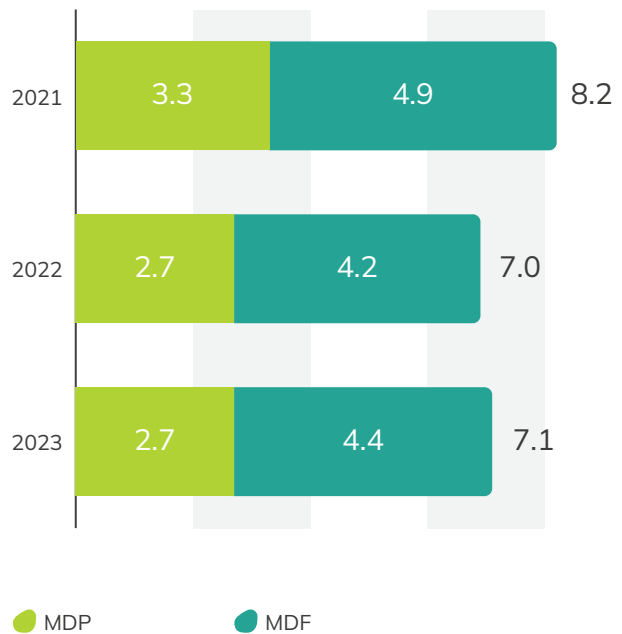
Figure 41

Destination for Brazilian panel production [million m<sup>3</sup>]



Domestic sales of wood panels [million m<sup>3</sup>]

Source: Iba (2023) | Developed by: ESG Tech

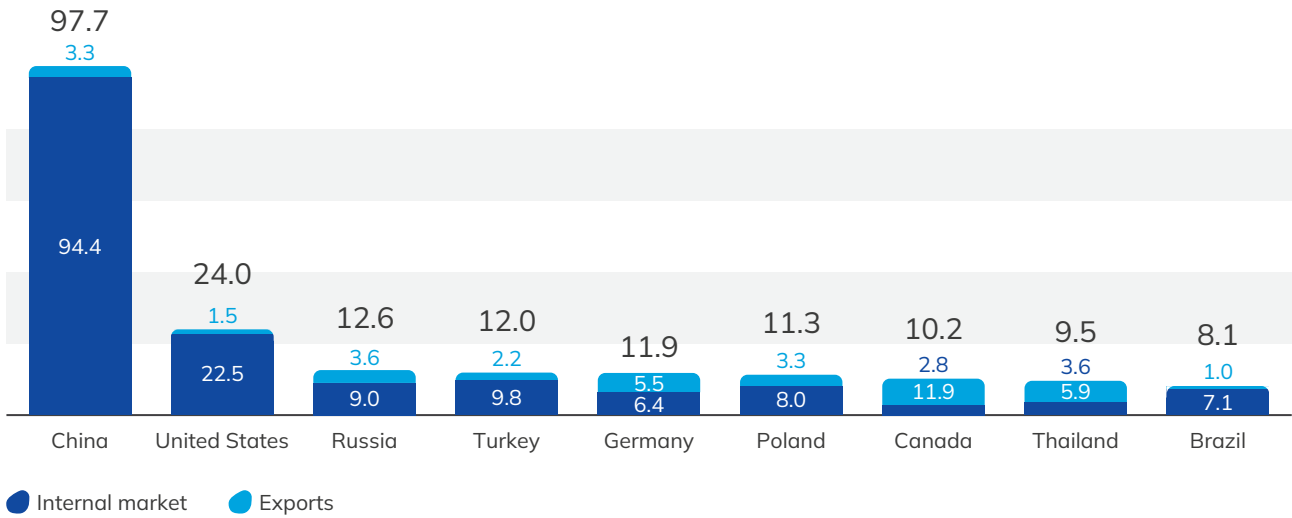


Continuing the recent trend, China has increasingly established itself as the world's largest producer of reconstituted wood panels, with production of 97.7 million m<sup>3</sup>, which represents 37% of global production (Figure 41). Brazil remains in 9th place, with 8.1 million m<sup>3</sup>.

Figure 42

### Leading producers of wood panels in 2021 [million m<sup>3</sup>]

Source: Brazil - Ibá (2023) and other countries - FAO (2022) | Developed by: ESG Tech

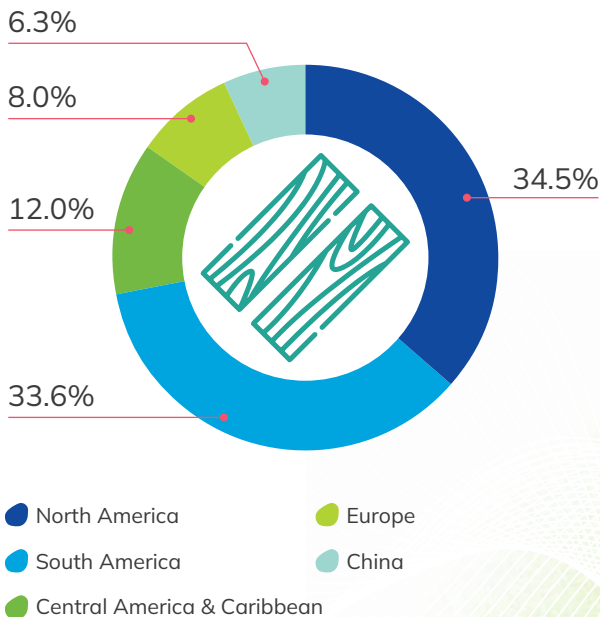


North America continued as the main destination for Brazilian panel exports in 2023, followed by South America, which demonstrated an increase of six percentage points compared to the previous year.

Figure 43

### Leading destinations for Brazilian panel exports from the planted tree sector in 2023 [%]

Source: COMEX (2023) | Developed by: ESG Tech and Ibá



Rosshelenphoto- Freepik





# Laminate flooring production

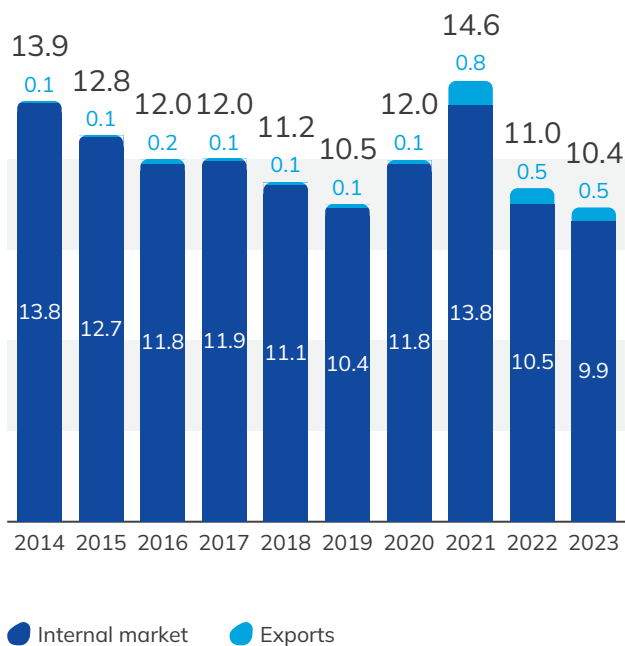
Brazilian production of laminate flooring totaled 10.4 million m<sup>2</sup>, a 5.8% decrease compared to (Figure 44). The internal market is the destination for 95% of Brazilian production, the same share as the previous year. North and South America further established themselves as the leading destinations for laminate flooring exports.

Racool\_studio - Freepik

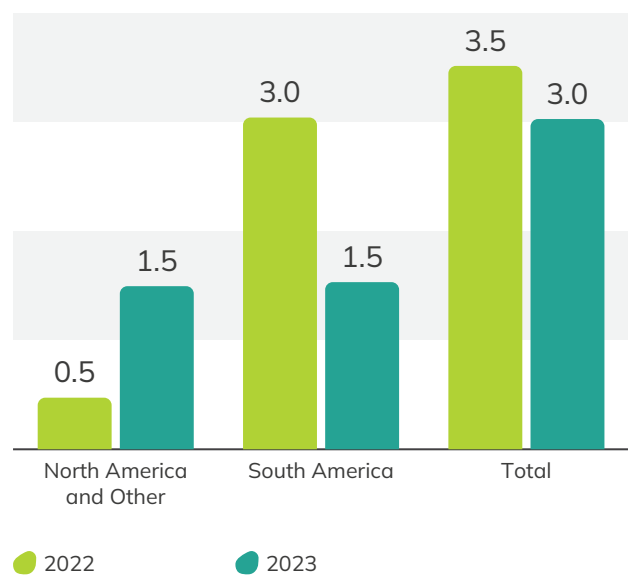
Figure 44

Destination for Brazilian laminate flooring production [million m<sup>2</sup>]

Source: Iba (2023) | Developed by: ESG Tech



Leading destinations for Brazilian laminate flooring exports [million US\$]



# Lumber production

Brazilian lumber production totaled 9.6 million m<sup>3</sup> over the past year, demonstrating a 3.7% CAGR up to 2023.

Figure 45

## Destination for Brazilian lumber production [million m<sup>3</sup>]

Source: Brazilian exports in 2023: COMEX, 2023; others: FAO (2022) | Developed by: ESG Tech  
Note: 2023 values were estimated based on exports

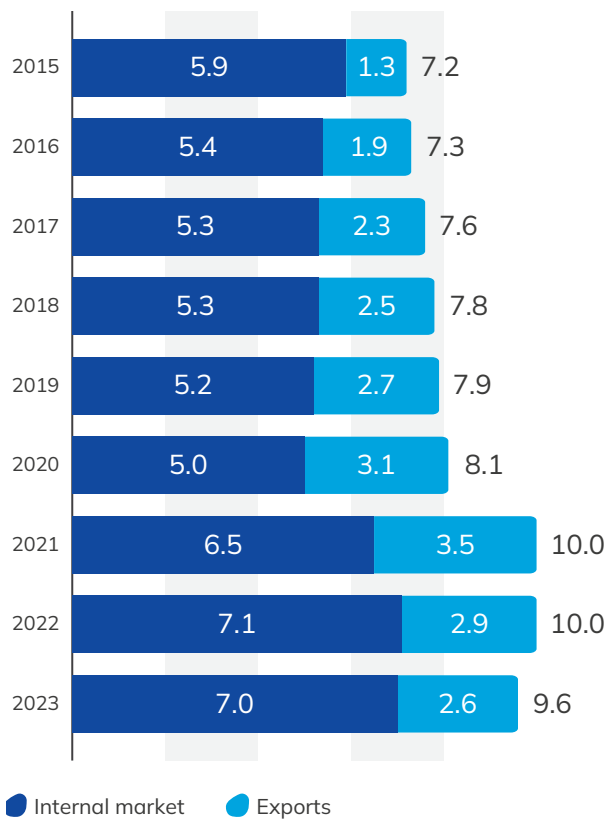
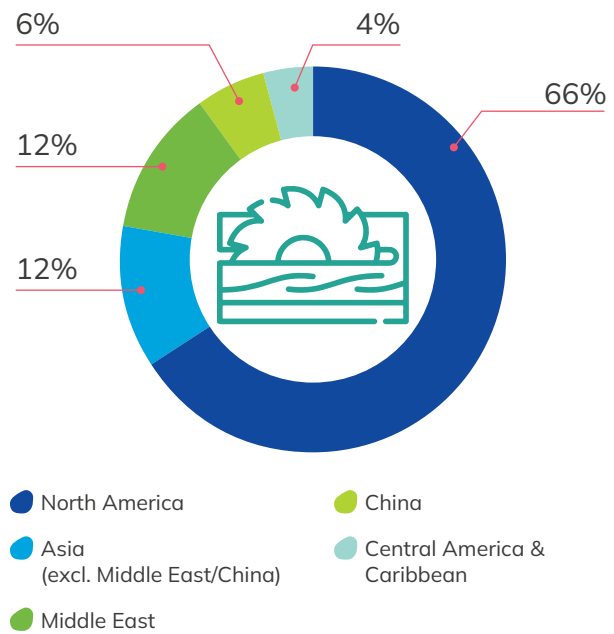


Figure 46

## Leading destinations for lumber exports from the planted tree sector in 2023 [%]

Source: COMEX (2023) | Developed by: ESG Tech and Ibdá



Brazilian held on to its 10th place ranking among the world's top ten lumber producers; the leaders are China (81.7 million m<sup>3</sup>) and the United States (79.6 million m<sup>3</sup>).

Accounting for 66%, North America continues to lead among destinations for Brazilian lumber exports (Figure 46).

# Charcoal production

Brazilian charcoal production has remained relatively stable in recent years, with a slight drop of 3.7% in 2023 compared to 2022 (Figure 47). According to data from SINDIFER, the steelworks sector produced 7.6 million tons of pig iron from charcoal in 2023, accounting for 24% of its total production (31.3 million tons).

Brazil continues to lead global charcoal production, with 6.7 million tons produced in 2023; nearly all this production goes to the internal market (Figure 48).

Figure 47

## Brazilian charcoal production [million tons]

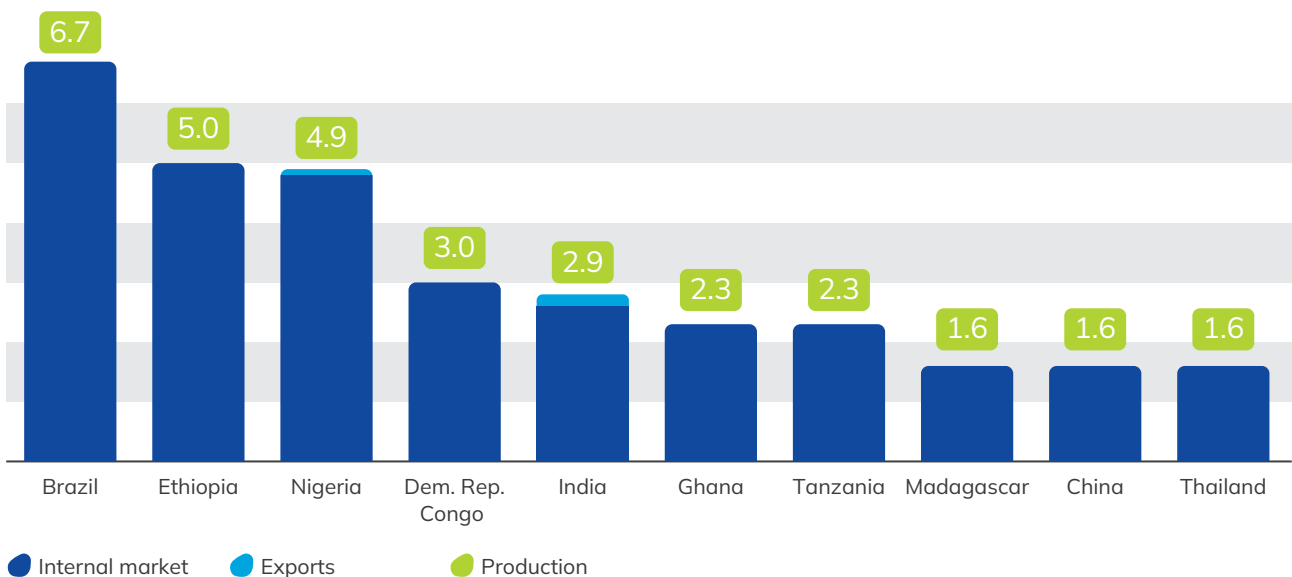
Source: SINDIFER, IBGE and ESG Tech (2023) | Developed by: ESG Tech



Figure 48

## Leading charcoal-producing countries [million tons]

Brazil: SINDIFER, IBGE and ESG Tech (2023) | Other countries: FAO (2022) | Developed by: ESG Tech



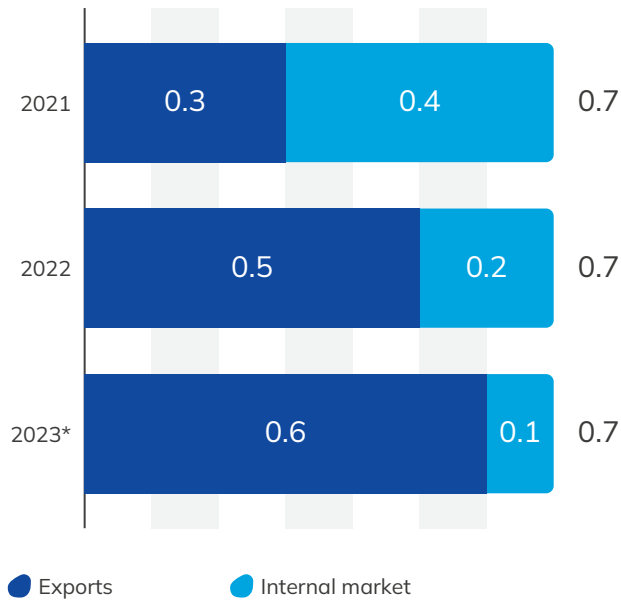


# Pellet production

Figure 49

## Destination for pellet production [million tons] | \*Estimated production value

Source: Comex (2023) | Developed by: ESG Tech



Brazilian pellet production has grown in the past decade, and stabilized over the past three years. Exports grew 17% over 2022, while the domestic market declined by 38% (Figure 49).

With the growth of pellet production in Brazil, the country now ranks 15th among the leading producers with 0.7 million tons (Figure 50).

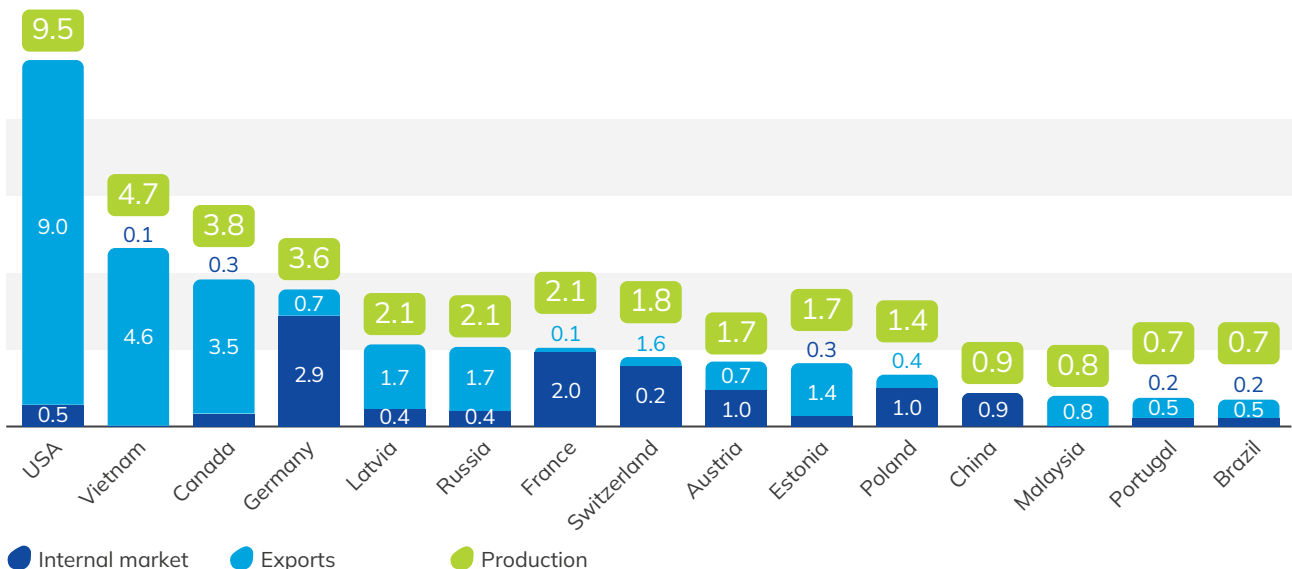


Freepik

Figure 50

## Leading pellet-producing countries [million tons]

Source: FAO (2022) | Developed by: ESG Tech





# Tax revenue

# R\$24.3 billion

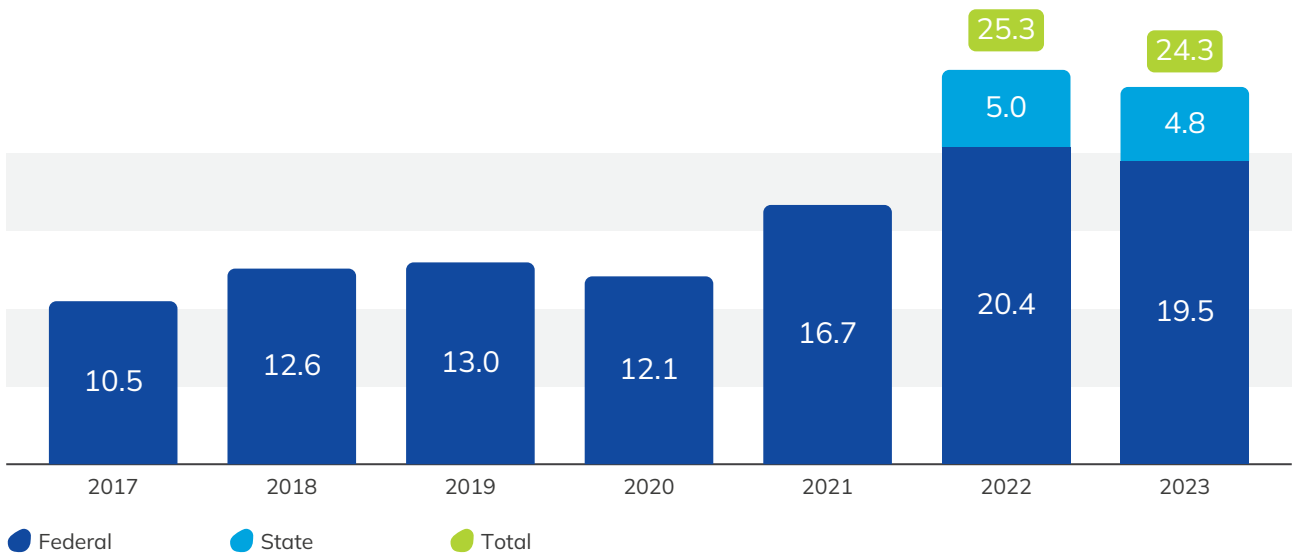
in federal and state taxes

The Brazilian planted tree sector generated approximately R\$ 24 billion in state and federal taxes in 2023 (Figure 51). This data was first included in Ibá's Annual Reports in 2022, as part of an effort to expand and improve indicators. The total value of ICMS taxes comprising the final purchase price was used to calculate state taxes, in order to more accurately represent the wealth generated by the segment at the state level. As for federal taxes, the value of R\$ 19.5 billion is based on data from the Brazilian Revenue Service.

Figure 51

## Federal and state tax revenue [billion R\$]

Source: Brazilian Revenue Service & Ibá (2023) | Based on responses from 25 companies | Developed by: ESG Tech



Natee Meepian

Additionally, the total tax credits accumulated by member companies in 2023 reached R\$ 5.8 billion, between ICMS (R\$ 2.9 billion), IPI (R\$ 0.1 billion), PIS (R\$ 0.5 billion) and COFINS (R\$ 2.3 billion).

Finally, the ISS tax (on services), whether withheld, collected, or integrated into the purchase price, totaled R\$ 347.8 million in 2023,

representing a 12.6% increase over the previous year (Figure 53). These amounts demonstrate that the planted forest sector directly assists in local tax generation, in turn permitting investments in infrastructure, education, health and public services that are essential for the municipalities where it works while also strengthening local economies.

Figure 52

### Tax revenue [%]

Source: Brazilian Revenue Service & Ibá (2023) | Developed by: ESG Tech | Based on responses from 25 companies

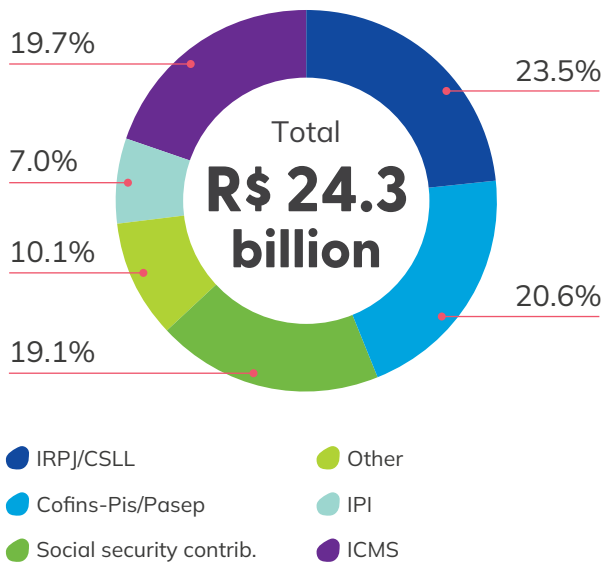
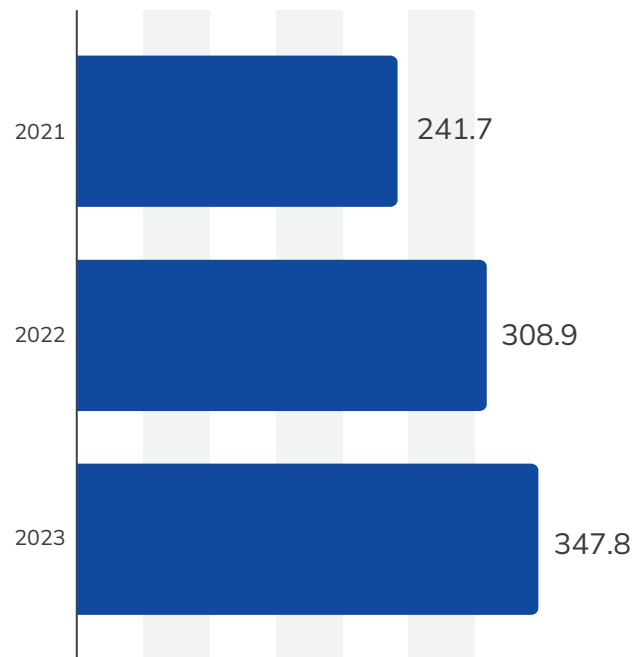


Figure 53

### ISS taxes generated by member companies [million R\$]

Source: Ibá (2023) | Developed by: ESG Tech | Based on responses from 25 companies



Levantina



# Job creation

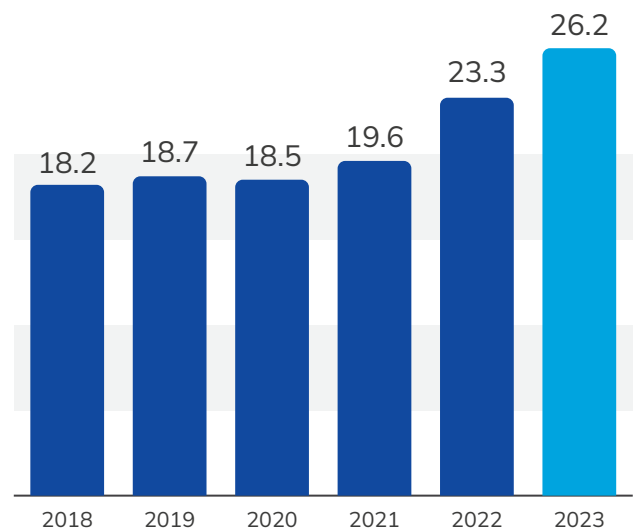
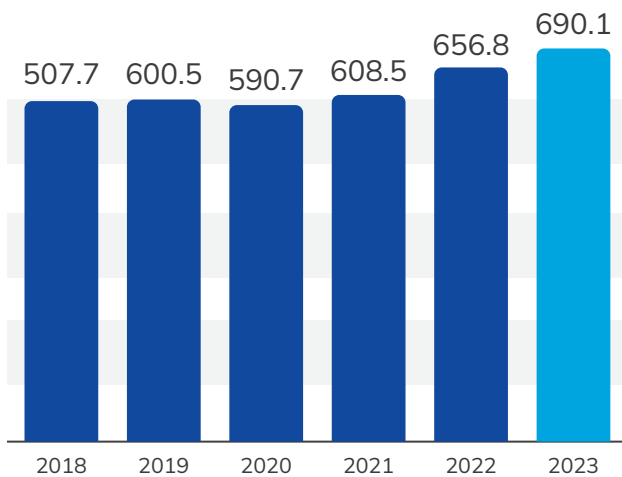
In 2023 33,400 new job posts were created, adding to the total of 690,000 direct and 2 million indirect jobs guaranteed by this industry. Combined, direct and indirect jobs are estimated to total 2.69 million.

Figure 54

Direct jobs generated  
[1000 jobs posts]

Total annual wages [billion R\$]

Source: RAIS (2022) & ESG Tech (data from June 5, 2024) |  
Developed by: ESG Tech



Induced jobs maintained the ratio of 5.3 jobs generated throughout the production chain for products that originate from forests or use their raw materials for each person directly employed by the forest-based sector, resulting in a total of 3.7 million job posts.

# 2.69 million

people employed  
by the sector

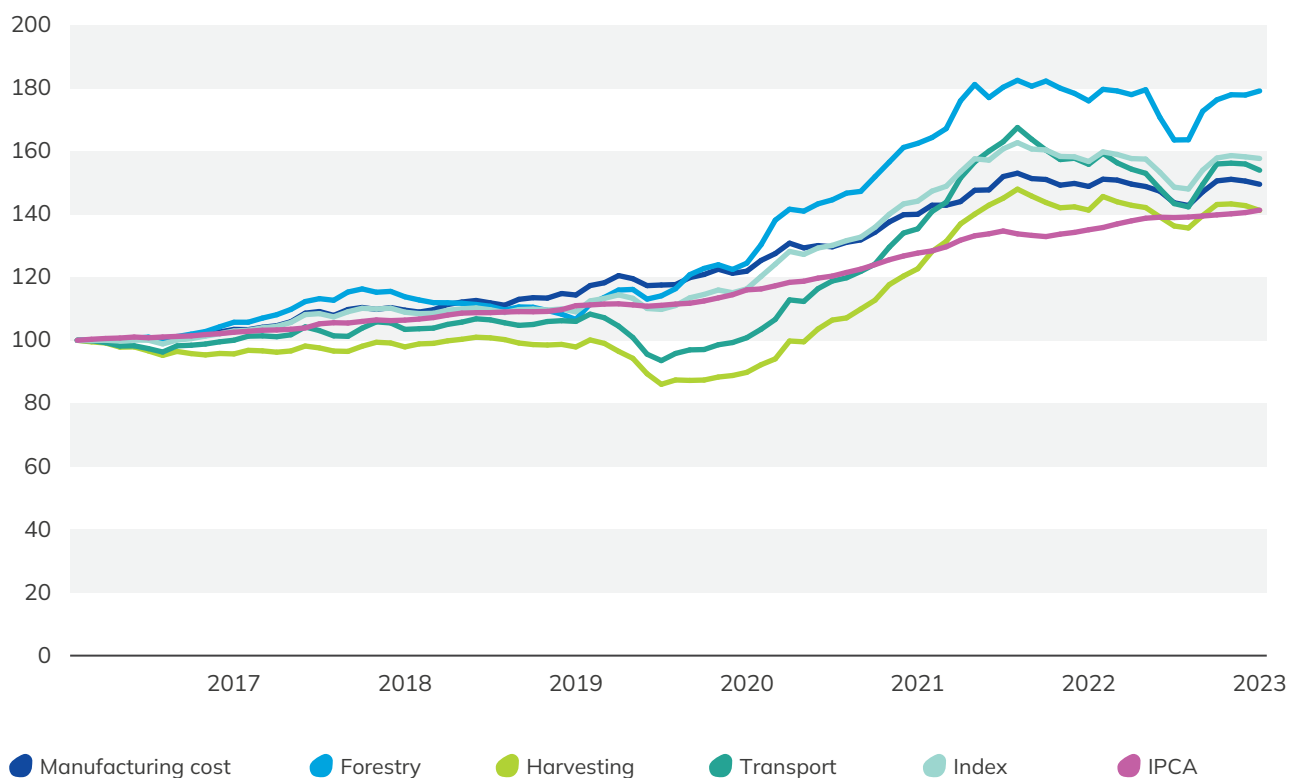
# Sector inflation rate

Between April and September 2023 costs for forest businesses began to fluctuate, first downward then upward again, reflecting volatility in the prices for diesel fuel and fertilizers during this same period.

Figure 55

## Cost index for the forest sector [January 2017 = 100]

Source: ESG Tech (2023)



However, the index of forest costs (which include production, operation and manufacturing expenses) was stable, with a marginal increase of 0.61% compared to 2022. Meanwhile, the Broad Consumer Price Index (IPCA) was 4.62% for the same period. Unlike in previous years, when the index of forest costs grew beyond the IPCA, in 2023 it grew below it.







# 5. HISTORICAL SERIES



Table 3

## Area of planted trees (total), 2013–2023 [hectares]

State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>North</b>	<b>329,011</b>	<b>421,309</b>	<b>431,220</b>	<b>438,197</b>	<b>443,585</b>	<b>485,119</b>	<b>494,013</b>	<b>422,835</b>	<b>425,992</b>	<b>426,342</b>	<b>438,468</b>
RO						26,318	27,319	8,822	8,822	12,153	12,405
AC								967	967	23	164
AM								382	382	362	390
RR						21,557	30,000	23,079	23,079	23,003	22,522
PA	159,657	197,478	203,750	208,129	211,008	212,957	212,436	193,602	193,602	197,717	208,132
AM	57,614	61,961	64,962	66,962	67,826	67,826	67,826	92,217	92,217	86,539	85,668
TO	111,740	161,870	162,508	163,106	164,751	156,461	156,432	103,766	106,923	106,545	109,186
<b>Northeast</b>	<b>868,571</b>	<b>913,853</b>	<b>891,590</b>	<b>897,497</b>	<b>900,628</b>	<b>881,634</b>	<b>902,087</b>	<b>971,716</b>	<b>1,009,653</b>	<b>1,020,326</b>	<b>1,014,643</b>
MA	209,249	211,334	210,496	221,859	228,801	225,052	237,859	279,238	297,213	301,181	302,376
PI	28,053	31,212	29,333	26,068	25,675	25,675	25,281	34,098	32,159	32,587	32,321
CE						650	867	342	342	21	656
RN								44	44	44	44
PB						5,614	6,109	82	82	144	143
PE						4,060	4,873	961	961	1,337	1,421
AL						21,000	21,512	13,863	13,863	16,997	16,970
SE						6,179	6,024	3,381	3,381	3,601	3,904
BA	631,269	671,307	651,761	649,570	646,152	593,404	599,562	639,707	661,608	664,415	656,809
<b>Southeast</b>	<b>2,813,733</b>	<b>2,881,989</b>	<b>2,873,835</b>	<b>2,840,262</b>	<b>2,823,186</b>	<b>3,430,522</b>	<b>4,197,158</b>	<b>3,827,893</b>	<b>3,879,348</b>	<b>3,853,364</b>	<b>3,852,660</b>
MG	1,451,236	1,445,219	1,437,997	1,430,125	1,421,702	2,020,786	2,306,205	2,305,918	2,305,582	2,265,929	2,262,331
ES	224,360	246,441	244,935	251,278	251,600	231,073	231,421	270,631	279,821	274,535	280,604
RJ						30,574	29,764	29,903	30,325	29,632	28,873
SP	1,138,137	1,190,329	1,190,903	1,158,859	1,149,884	1,148,089	1,629,768	1,221,441	1,263,620	1,283,267	1,280,853
<b>South</b>	<b>1,991,276</b>	<b>2,172,166</b>	<b>2,234,420</b>	<b>2,233,635</b>	<b>2,232,068</b>	<b>2,511,617</b>	<b>2,479,757</b>	<b>3,085,886</b>	<b>3,143,898</b>	<b>3,121,413</b>	<b>3,184,283</b>
PR	862,769	914,113	972,273	972,173	976,064	1,066,479	1,008,990	1,165,490	1,177,596	1,164,920	1,159,951
SC	647,887	660,751	665,521	668,218	666,555	664,238	642,310	1,004,844	1,031,694	1,025,014	1,050,326
RS	480,620	597,302	596,626	593,244	589,449	780,900	828,457	915,552	934,608	931,479	974,006
<b>Midwest</b>	<b>1,025,074</b>	<b>1,272,557</b>	<b>1,294,484</b>	<b>1,345,351</b>	<b>1,365,720</b>	<b>1,546,090</b>	<b>1,558,246</b>	<b>1,443,219</b>	<b>1,474,968</b>	<b>1,524,184</b>	<b>1,738,777</b>
MS	707,458	833,834	855,323	906,077	930,016	1,104,717	1,125,435	1,052,720	1,073,523	1,134,478	1,355,445
MT	187,090	300,339	298,391	297,668	294,098	258,805	260,032	199,235	207,832	207,745	210,971
GO	130,526	138,384	140,770	141,606	141,606	178,425	169,094	189,179	191,528	181,962	172,361
DF						4,143	3,685	2,085	2,085		
<b>Other</b>	<b>15,657</b>	<b>74,297</b>	<b>75,498</b>	<b>75,379</b>	<b>75,023</b>						
<b>Brazil</b>	<b>7,043,322</b>	<b>7,736,171</b>	<b>7,801,047</b>	<b>7,830,321</b>	<b>7,840,210</b>	<b>8,854,982</b>	<b>9,631,261</b>	<b>9,751,549</b>	<b>9,933,859</b>	<b>9,945,629</b>	<b>10,228,830</b>

Table 4

## Area of planted trees: eucalyptus, 2013–2023 [hectares]

State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
MG	1,404,429	1,400,232	1,395,032	1,390,032	1,381,652	1,970,063	2,231,754	2,233,762	2,236,660	2,201,801	2,200,351
SP	1,010,444	976,186	976,613	946,124	937,138	1,035,874	1,417,708	945,114	981,315	999,987	997,543
MS	699,128	803,699	826,031	877,795	901,734	1,093,805	1,111,737	1,022,521	1,042,112	1,110,484	1,329,132
BA	623,971	630,808	614,390	612,199	608,781	585,258	589,336	637,765	648,143	650,332	643,094
RS	316,446	309,125	308,515	308,178	309,602	426,371	456,001	581,338	592,365	589,674	616,976
ES	221,559	228,781	227,222	233,760	234,082	225,520	225,311	260,170	264,094	258,533	263,946
PR	200,473	224,089	285,125	294,050	295,520	255,955	271,042	448,818	449,722	442,222	438,721
MA	209,249	211,334	210,496	221,859	228,801	200,612	199,911	268,912	286,931	290,846	290,076
MT	187,090	187,090	185,219	185,219	181,515	187,947	188,838	120,489	127,319	130,003	128,057
PA	159,657	125,110	130,431	133,996	135,843	151,888	154,402	167,354	167,354	166,215	175,125
GO	121,375	124,297	127,201	127,201	127,201	127,201	159,943	161,940	163,129	154,380	143,180
TO	111,131	115,564	116,365	116,798	118,443	149,886	149,291	98,988	101,669	100,477	101,625
SC	107,345	112,944	116,250	116,240	114,513	219,199	255,682	307,229	316,137	317,724	326,134
AM	57,169	60,025	63,026	65,026	67,826	67,826	67,826	68,462	68,462	362	389,577
Other	43,710	49,369	48,691	45,307	44,558	87,983	89,291	84,395	82,736	172,060	170,930
<b>Total</b>	<b>5,473,176</b>	<b>5,558,653</b>	<b>5,630,607</b>	<b>5,673,784</b>	<b>5,687,209</b>	<b>6,785,388</b>	<b>7,568,073</b>	<b>7,407,257</b>	<b>7,528,148</b>	<b>7,585,100</b>	<b>7,825,282</b>

Table 5

## Area of planted trees: pine, 2013–2023 [hectares]

State	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
PR	662,296	673,769	670,906	661,684	661,684	789,194	733,200	704,177	713,769	713,524	710,837
SC	540,542	541,162	542,662	545,453	545,453	445,009	386,628	696,130	713,134	702,816	719,199
RS	164,174	184,585	184,603	182,508	182,508	264,725	281,548	291,589	289,354	282,842	286,922
SP	127,693	123,996	124,222	122,667	122,667	79,041	184,135	148,609	151,414	151,699	153,051
MG	46,807	39,674	37,636	34,764	34,764	50,295	74,451	40,311	38,445	36,778	34,211
GO	9,151	9,087	8,569	8,500	8,500	8,500	6,771	6,547	6,661	6,522	6,238
MS	8,330	7,135	6,292	5,282	5,282	2,574	4,652	8,194	6,637	4,179	3,733
Other	11,153	9,589	6,349	6,319	6,319	3,024	2,585	10,523	10,641	10,749	10,705
<b>Total</b>	<b>1,570,146</b>	<b>1,588,997</b>	<b>1,581,239</b>	<b>1,567,177</b>	<b>1,567,177</b>	<b>1,642,362</b>	<b>1,673,970</b>	<b>1,906,080</b>	<b>1,930,055</b>	<b>1,909,109</b>	<b>1,924,894</b>



Table 6

## Area of planted trees: other species 2014-2023 [hectares]

State	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
RS	103,592	103,508	102,558	97,339	89,804	90,907	42,625	52,889	58,963	70,108
MT	113,249	113,172	112,449	112,583	70,858	71,194	77,964	79,733	60,304	82,193
PA	72,368	73,319	74,133	75,165	61,069	58,034	26,220	26,220	30,415	32,972
SP	90,147	90,068	90,068	90,079	33,174	27,926	127,718	130,891	8,468	130,259
PR	16,255	16,242	16,439	18,860	21,330	4,749	12,494	14,105	8,703	10,393
BA	34,000	34,000	34,000	34,000	8,146	10,226	1,907	13,431	1,660	13,673
TO	45,876	45,878	45,878	45,878	6,575	7,141	4,777	5,254	2,259	7,561
ES	15,000	15,000	15,000	15,000	5,553	6,110	8,758	13,904	1,035	14,675
GO	5,000	5,000	5,905	5,905	42,724	2,380	20,693	21,738	1,273	22,943
MS	23,000	23,000	23,000	23,000	8,339	9,045	22,005	24,774	541	22,580
MG	5,313	5,329	5,329	5,286	429	0	31,844	30,478	8,596	27,769
Other	64,721	64,686	64,602	62,730	79,233	101,507	61,205	62,241	38,788	43,528
<b>Total</b>	<b>588,521</b>	<b>589,202</b>	<b>589,361</b>	<b>585,825</b>	<b>427,234</b>	<b>389,219</b>	<b>438,210</b>	<b>475,658</b>	<b>221,005</b>	<b>478,654</b>

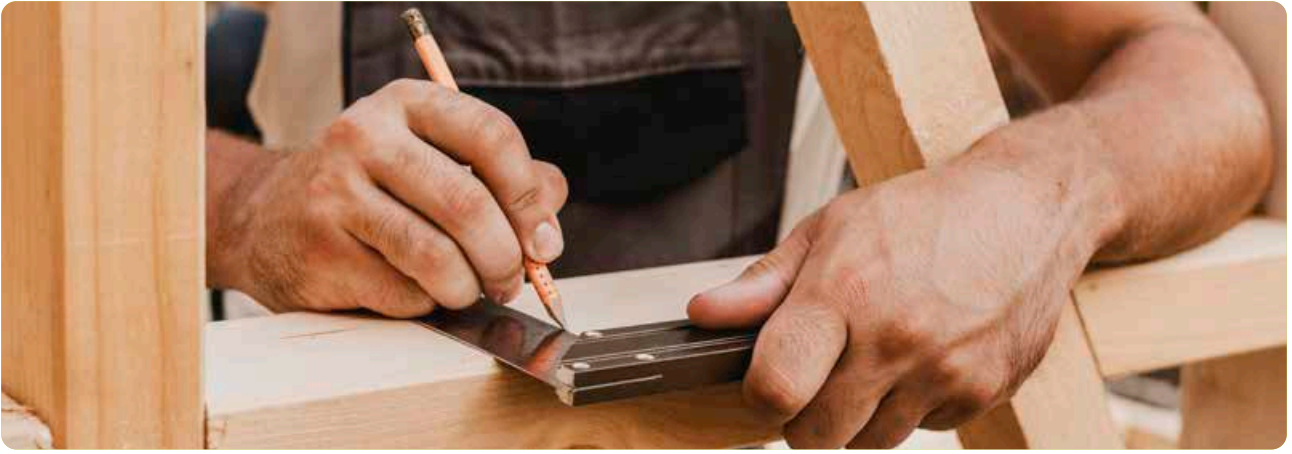
Sylvamo



Table 7

## Area of planted trees: breakdown of other species, 2021-2023 [hectares]

Species	2021	2022	2023
rubber	243,736	230,411	240,786
teak	36,246	76,352	84,466
other	109,800	76,543	72,733
acacia	50,391	54,442	67,170
Parana pine	7,499	12,976	13,500
<b>Total</b>	<b>447,672</b>	<b>450,725</b>	<b>478,654</b>



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Figure 56

Wood consumption for industrial use, 2013-2023 [million m<sup>3</sup>]

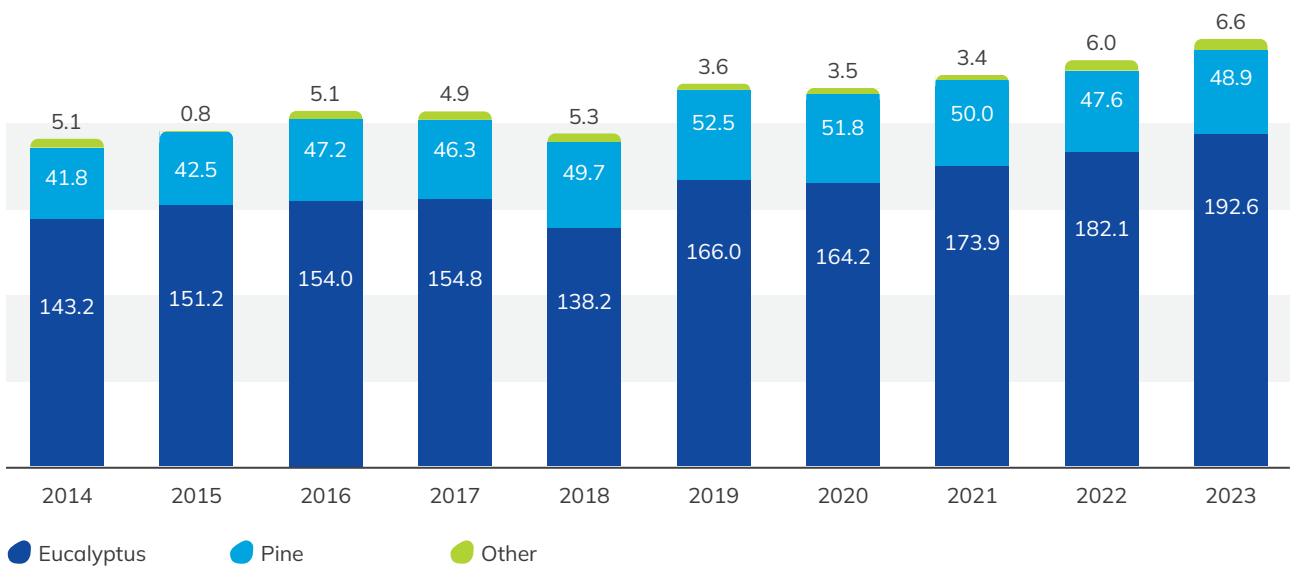


Figure 57

Pulp production and consumption in Brazil, 2014-2023 [million tons]

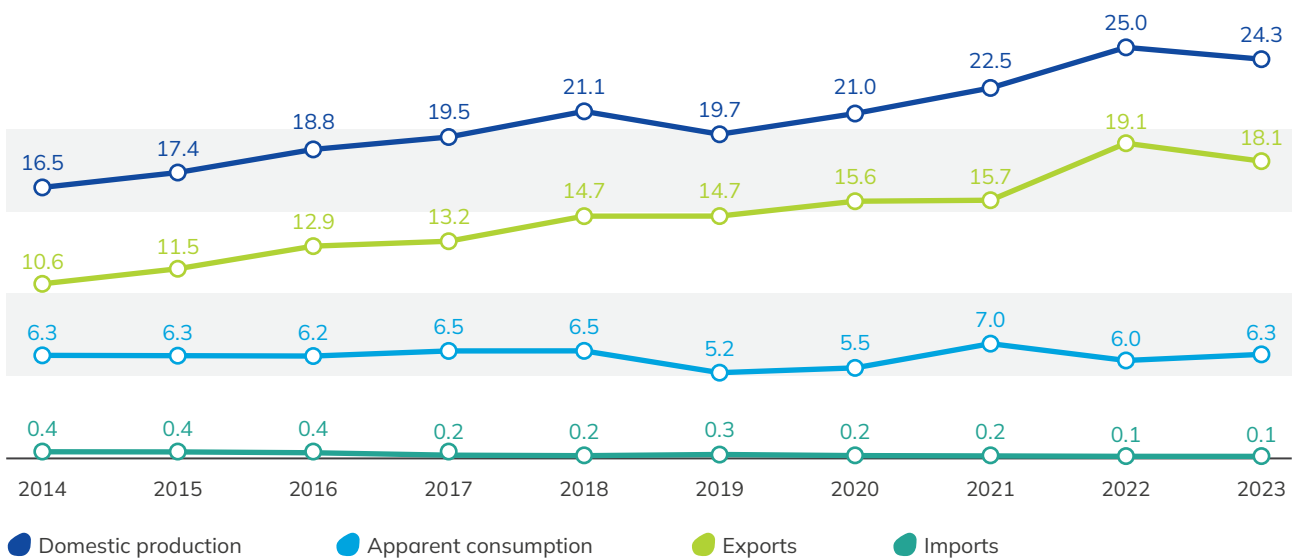


Figure 58

Paper production and consumption in Brazil, 2014–2023 [million tons]

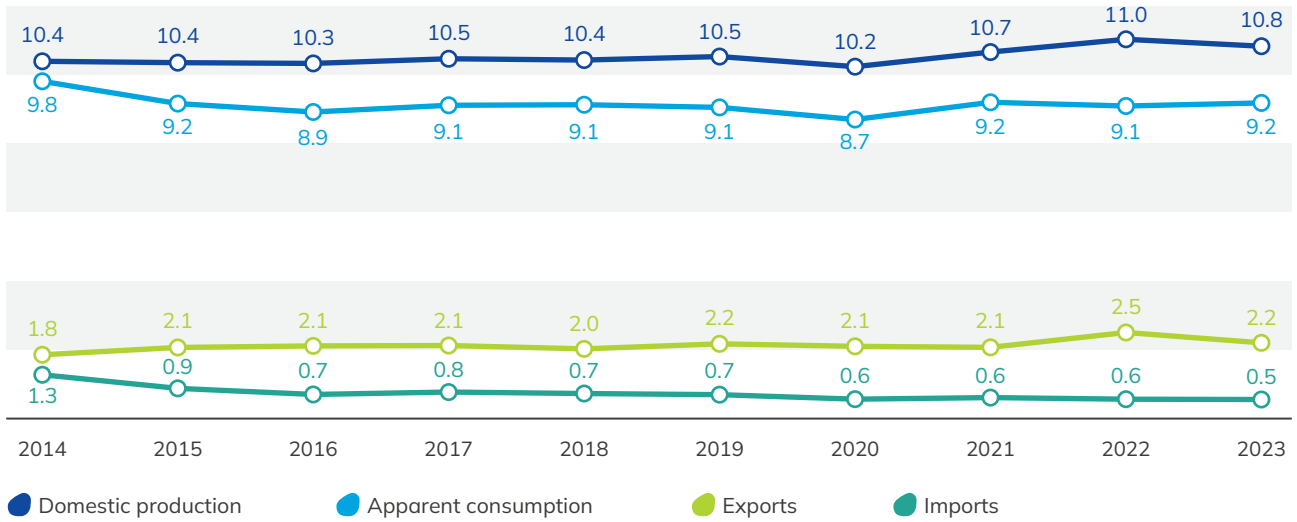


Figure 59

Production and consumption of reconstituted wood panels in Brazil, 2014–2023 [million m<sup>3</sup>]

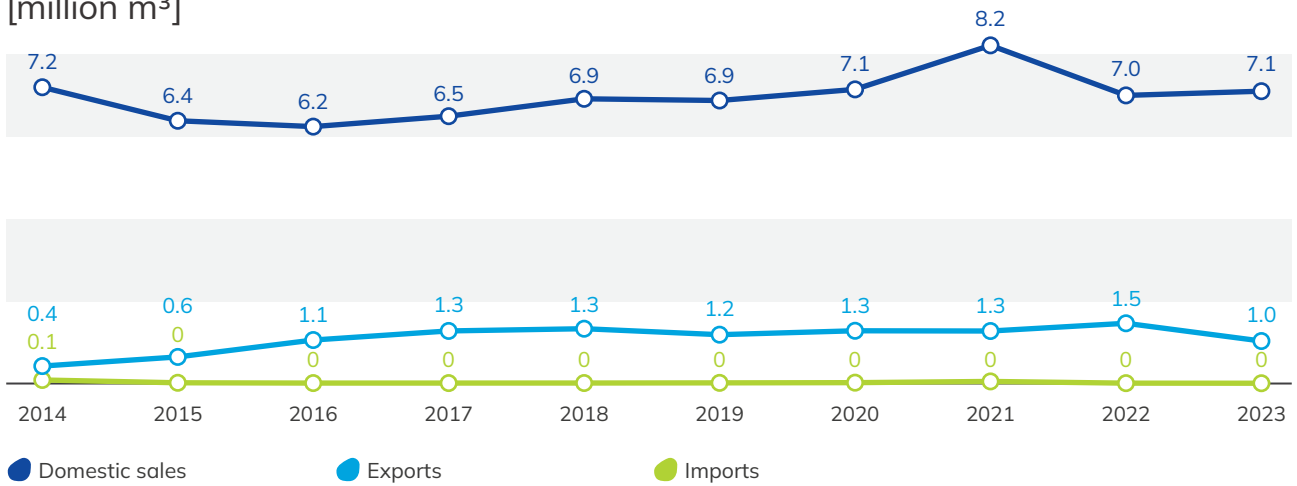


Figure 60

Production and consumption of laminate flooring in Brazil, 2014–2023 [million m<sup>2</sup>]

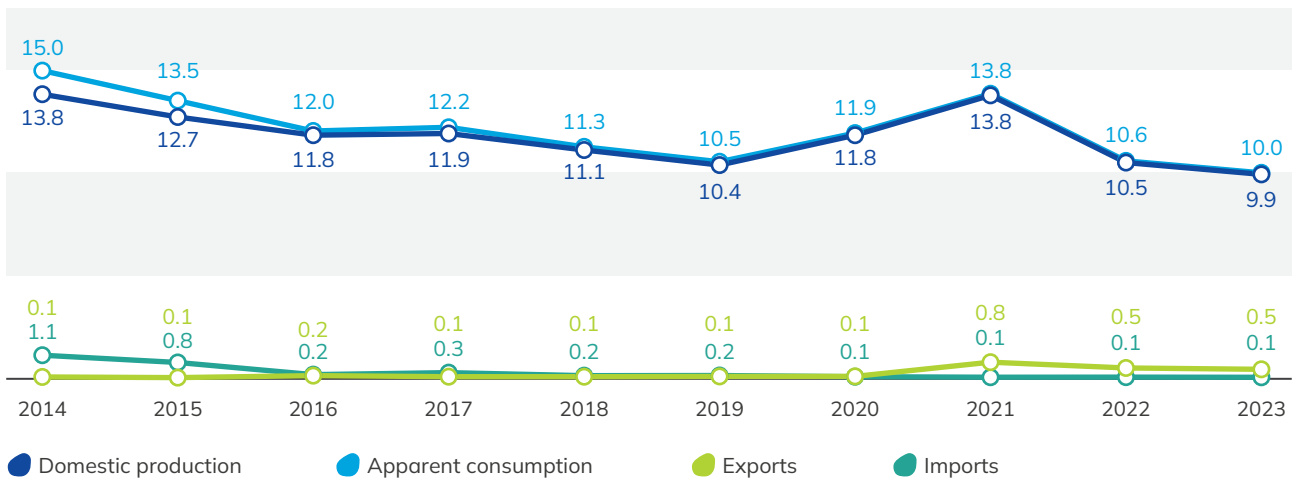
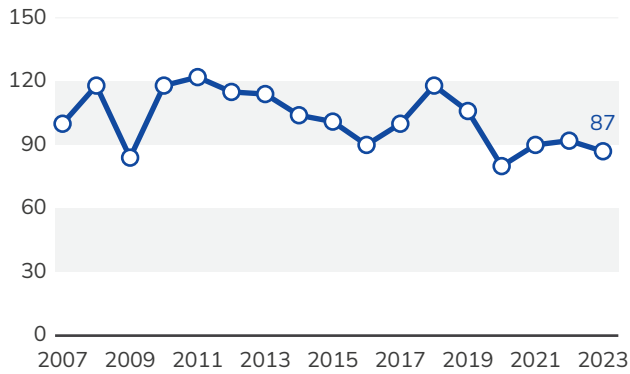




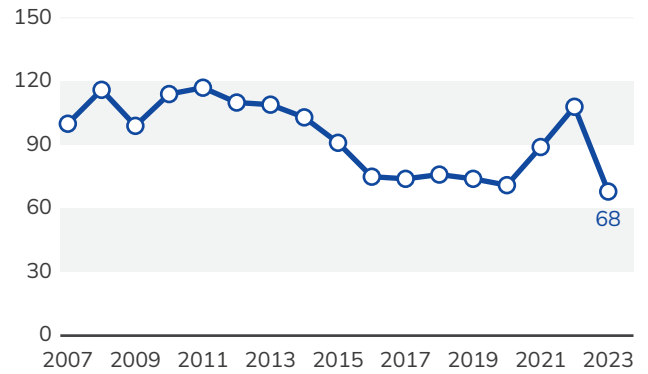
Figure 61

Nominal price and industrial product indexes, 2007–2023 [2007 = 100]

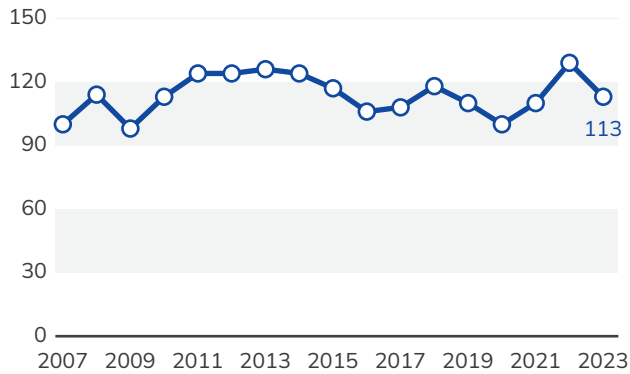
Pulp



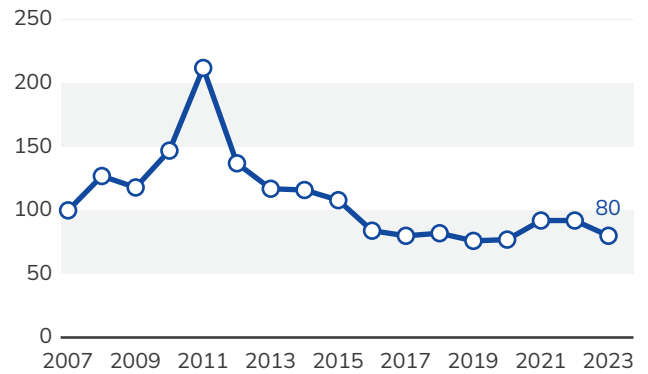
Panels



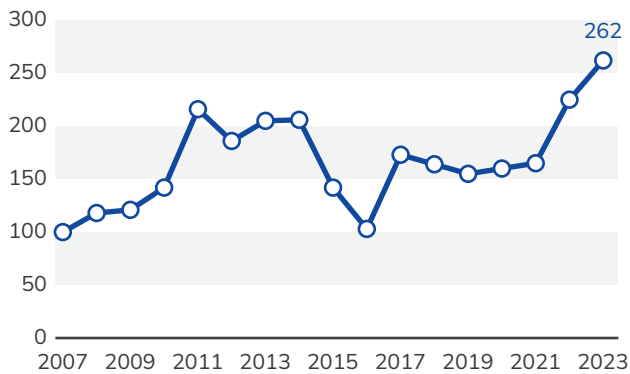
Paper



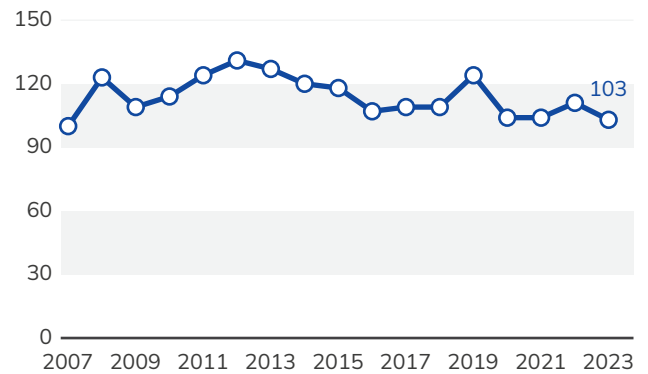
Laminates



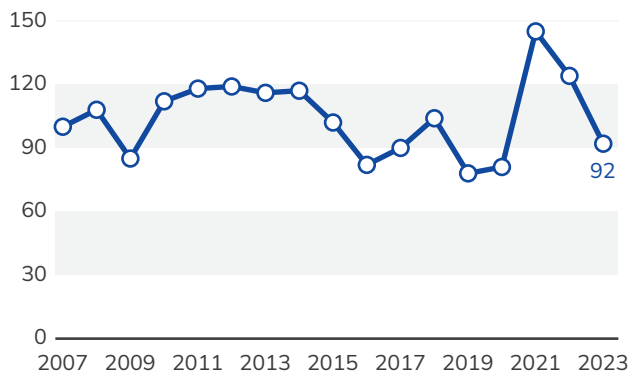
Charcoal



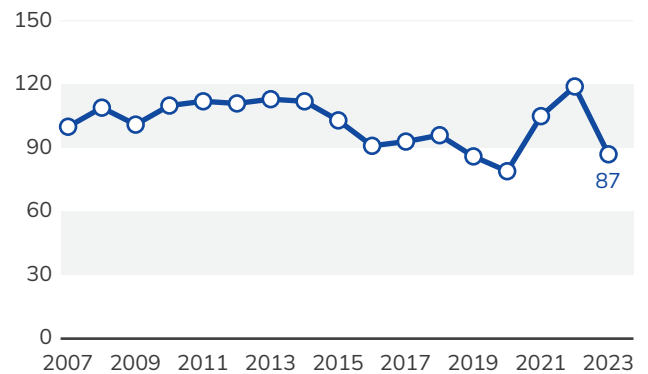
Woodchips



Plywood



Lumber





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Cenibra.





# 6. METHODOLOGICAL NOTES



# METHODOLOGICAL NOTES



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## Planted area

Data on planted area in 2023 were collected and developed based on technology and intelligence from Canopy Remote Sensing Solutions ([www.canopyrss.tech](http://www.canopyrss.tech)), which utilized satellite imagery to capture areas as small as 0.25 hectares which contain planted trees.

## Cost index

In developing the cost index for the forest sector, a structured methodological approach was adopted to capture the inherent complexities in the sector's operational costs. These costs were categorized into four key areas: forestry, harvesting, transport and manufacturing costs, and all costs for these areas were analyzed according to the quantity needed to produce 1 m<sup>3</sup> of product. Each of these key areas included the following components:

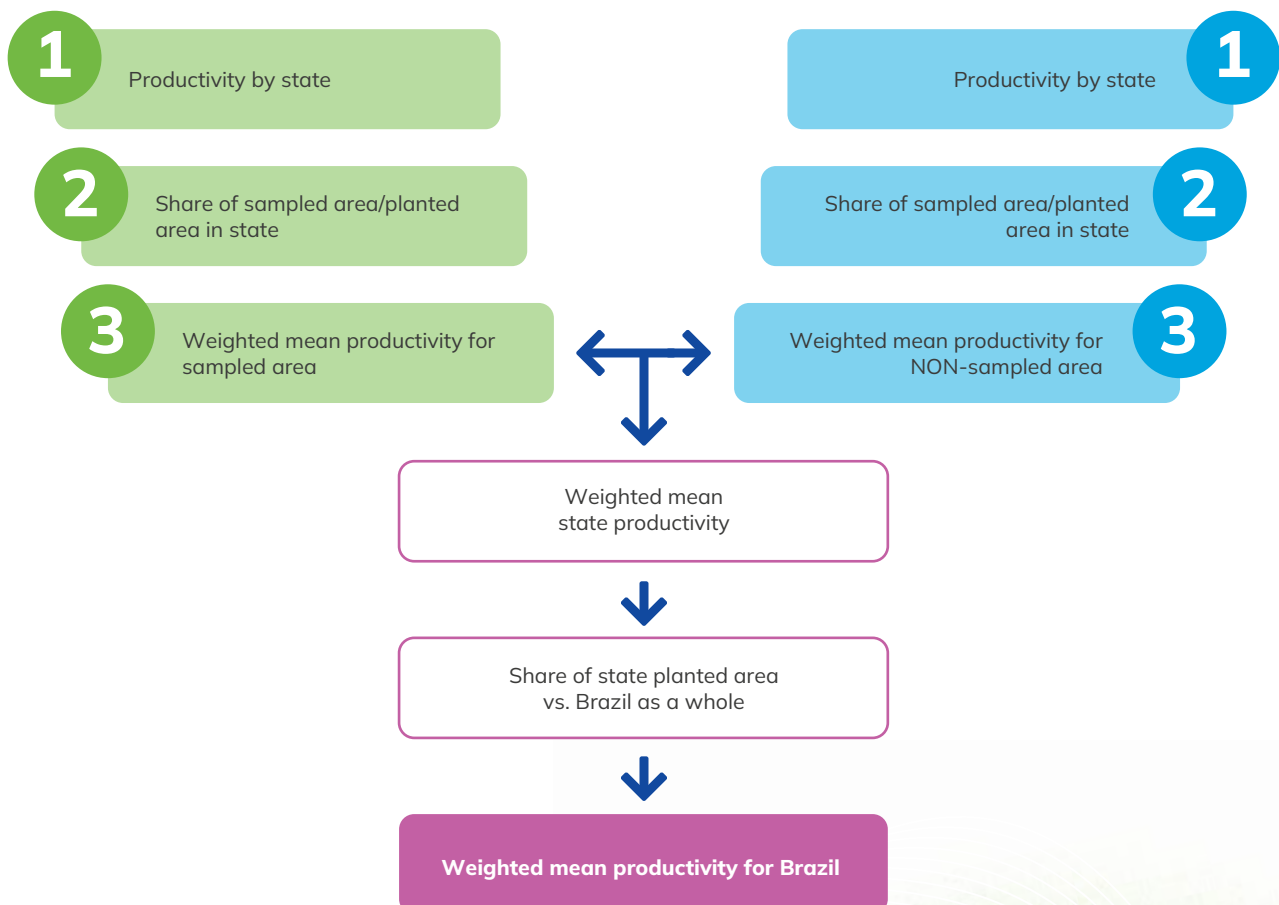
- Forestry: labor, fertilizer, seedlings, herbicides and defenses, leasing, administrative costs and machine hours.
- Harvesting: machinery, fuel, maintenance and labor.
- Transport: machinery, fuel, maintenance and labor.
- Manufacturing costs: inputs, labor and fuel.

# Productivity indicator

This indicator was calculated according to the contribution of the planted area in each state. Weighting was used within each state for sampled data obtained from member companies, and for market data for non-sampled planted area. Including all the states with planted area in the productivity estimate creates a more representative national average.



Levantina



# List of CNAE and NCM codes

Table 8

To construct some indicators, the following Brazilian National Classification of Economic Activities (CNAE) and Mercosur Common Nomenclature (NCM) codes were utilized:

CLASS	CODE	DESCRIPTION
2.0	2101	Forest production - planted forests
2.0	2306	Activities to support forest production
2.0	16102	Lumber milling
2.0	16218	Manufacture of laminated wood and plywood sheets, pressboard and particleboard
2.0	16226	Production of wooden structures and carpentry objects for construction
2.0	16234	Manufacture of barrels/casks and wood packaging
2.0	16293	Manufacture of objects made of wood, straw, wicker and woven materials not specified previously, except furniture
2.0	17109	Cellulose and other types of pulp for paper production
2.0	17214	Paper manufacturing
2.0	17222	Cardboard and paperboard manufacturing
2.0	17311	Manufacture of paper packaging
2.0	17320	Manufacture of cardboard and paperboard packaging
2.0	17338	Manufacture of corrugated cardboard sheets and packaging
2.0	17419	Manufacture of products made of paper, card stock, paperboard and corrugated cardboard for commercial and office use
2.0	17427	Manufacture of paper products for domestic and hygiene/sanitary uses
2.0	17494	Manufacture of products from cellulose pulps, paper, card stock, paperboard and corrugated cardboard not previously specified
2.0	31012	Manufacture of furniture (predominantly wood)



PRODUCT	NCM	PRODUCT	NCM	PRODUCT	NCM
Wood Charcoal	44020000	Other	44031100	Paper	48010020
Wood Charcoal	44029000	Other	44031200	Paper	48010030
Woodchips	44012100	Other	44032100	Paper	48010090
Woodchips	44012200	Other	44032200	Paper	48021000
Pulp	47010000	Other	44032600	Paper	48022010
Pulp	47020000	Other	44039800	Paper	48022090
Pulp	47031100	Other	44091000	Paper	48024010
Pulp	47031900	Other	44101210	Paper	48024090
Pulp	47032100	Other	44101290	Paper	48025410
Pulp	47032900	Other	44101911	Paper	48025491
Pulp	47041100	Other	44101919	Paper	48025499
Pulp	47041900	Other	44101991	Paper	48025510
Pulp	47042100	Other	44101992	Paper	48025591
Pulp	47042900	Other	44101999	Paper	48025592
Pulp	47050000	Other	44109000	Paper	48025599
Pulp	47061000	Panels	44101110	Paper	48025610
Pulp	47062000	Panels	44101129	Paper	48025691
Pulp	47063000	Panels	44101190	Paper	48025692
Pulp	47069100	Panels	44111210	Paper	48025693
Pulp	47069200	Panels	44111290	Paper	48025699
Pulp	47069300	Panels	44111310	Paper	48025710
Pulp	47071000	Panels	44111399	Paper	48025791
Pulp	47072000	Panels	44111410	Paper	48025792
Pulp	47073000	Panels	44111490	Paper	48025793
Pulp	47079000	Panels	44119210	Paper	48025799
Plywood	44123900	Panels	44119290	Paper	48025810
Other	44011100	Panels	44119310	Paper	48025891
Other	44013100	Panels	44119390	Paper	48025892
Other	44013900	Panels	44119410	Paper	48025899
Other	44014000	Panels	44119490	Paper	48026110

PRODUCT	NCM	PRODUCT	NCM	PRODUCT	NCM
Paper	48026191	Paper	48051900	Paper	48101482
Paper	48026192	Paper	48052400	Paper	48101489
Paper	48026199	Paper	48052500	Paper	48101490
Paper	48026210	Paper	48053000	Paper	48101910
Paper	48026291	Paper	48054010	Paper	48101981
Paper	48026292	Paper	48054090	Paper	48101982
Paper	48026299	Paper	48055000	Paper	48101989
Paper	48026910	Paper	48059100	Paper	48101990
Paper	48026991	Paper	48059210	Paper	48101991
Paper	48026992	Paper	48059290	Paper	48101999
Paper	48026999	Paper	48059300	Paper	48102210
Paper	48030010	Paper	48061000	Paper	48102290
Paper	48030090	Paper	48062000	Paper	48102910
Paper	48041100	Paper	48063000	Paper	48102990
Paper	48041900	Paper	48064000	Paper	48103110
Paper	48042100	Paper	48070000	Paper	48103190
Paper	48042900	Paper	48081000	Paper	48103210
Paper	48043110	Paper	48084000	Paper	48103290
Paper	48043190	Paper	48089000	Paper	48103910
Paper	48043910	Paper	48092000	Paper	48103990
Paper	48043990	Paper	48099000	Paper	48109210
Paper	48044100	Paper	48101310	Paper	48109290
Paper	48044200	Paper	48101381	Paper	48109910
Paper	48044900	Paper	48101382	Paper	48109990
Paper	48045100	Paper	48101389	Paper	48111010
Paper	48045200	Paper	48101390	Paper	48111090
Paper	48045910	Paper	48101391	Paper	48114110
Paper	48045990	Paper	48101399	Paper	48114190
Paper	48051100	Paper	48101410	Paper	48114910
Paper	48051200	Paper	48101481	Paper	48114990

PRODUCT	NCM
Paper	48115110
Paper	48115121
Paper	48115122
Paper	48115123
Paper	48115128
Paper	48115129
Paper	48115130
Paper	48115910
Paper	48115921
Paper	48115922
Paper	48115923
Paper	48115929
Paper	48115930
Paper	48116010
Paper	48116090
Paper	48119010
Paper	48119090
Paper	48120000
Paper	48131000
Paper	48132000
Paper	48139000
Paper	48142000
Paper	48149000
Paper	48162000
Paper	48169010
Paper	48169090
Paper	48171000
Paper	48172000
Paper	48173000
Paper	48181000

PRODUCT	NCM
Paper	48182000
Paper	48183000
Paper	48185000
Paper	48189010
Paper	48189090
Paper	48191000
Paper	48192000
Paper	48193000
Paper	48194000
Paper	48195000
Paper	48196000
Paper	48201000
Paper	48202000
Paper	48203000
Paper	48204000
Paper	48205000
Paper	48209000
Paper	48211000
Paper	48219000
Paper	48221000
Paper	48229000
Paper	48232010
Paper	48232091
Paper	48232099
Paper	48234000
Paper	48236100
Paper	48236900
Paper	48237000
Paper	48239010
Paper	48239020

PRODUCT	NCM
Paper	48239091
Paper	48239099
Laminate flooring	44101121
Laminate flooring	44111391
Lumber	44071000
Lumber	44071100
Lumber	44071900
Lumber	44079990
Wooden furniture	94033000
Wooden furniture	94034000
Wooden furniture	94035000
Wooden furniture	94036000
Wooden furniture	94039010
Wooden furniture	94039100





Suzano;  
Eldorado;  
Freepik.



# 7. ABOUT IBÁ



# ABOUT IBÁ



## Mission

Ibá works to enhance competitiveness in the sector and bring member companies into line with the highest level of science, technology and environmental responsibility throughout the entire production chain for trees, in the search for innovative solutions for the Brazilian and global markets.



## Vision

Planted trees are the future of renewable and recyclable raw materials that are friendly to the environment, biodiversity, and human life. The planted tree industry is the industry of the future.



## Values

Competitiveness  
Continuity  
Innovation  
Responsibility

Irani







# Ibá

The Brazilian Tree Industry (Ibá) is the association responsible for institutional representation of the planted tree production chain, from the fields to the factory. In order to promote products derived from pine, eucalyptus, and other species that are directed toward industrial purposes, Ibá works to defend the interests of the sector. This work takes place together with government officials and agencies, entities from the planted tree production chain, and significant sectors of the economy, social and environmental organizations, universities, schools, consumers, and the press – in Brazil as well as abroad.

The association, which was founded in April 2014, represents roughly 50 companies and nine state forest entities. Planted trees have made Brazil a global reference in the production of pulp and paper, as well as raw materials used in a variety of laminate products and charcoal (used in the steel industry).

Planted trees are also the source of non-timber products including viscose for the textile industry, honey, disinfectants, flavorings, thickeners, solvents, varnishes, glues, synthetic rubber, printing inks, fabrics, waxes and grease, printing paper, sanitary and hygienic papers, diapers, packaging, furniture, pellets, and packing crates.

With advances in innovation and major investments in research and development, there will be a plethora of new products from planted trees, making the bioeconomy a reality.



# 50

Ibá member  
companies

Zig Koch

# Ibá member companies: producers

AB Florestal Empreendimentos Imobiliários,  
Atividades Florestais e Participações Ltda

Adami S/A Madeiras

Arauco Celulose do Brasil S.A

Berneck S/A Painéis e Serrados

Biomás Serviços Ambientais Restauração e  
Carbono S/A

Blendpaper Security Papéis Especiais S/A

BO Paper Brasil Ind de Papéis Ltda.

Bracell SP Celulose Ltda.

Cenibra Celulose Nipo Brasileira S/A

CMPC Celulose Riograndense Ltda

CMPC Iguazu Embalagens Ltda

Copapa Cia Paduana de Papéis

Dexco S/A

Eldorado Brasil Celulose e Papel Ltda

Eucatex S/A Indústria e Comércio

Floraplac MDF Ltda

Forest Paper - Indústria e Comércio de Papel S/A

Gerdau Aços Longos S/A

Greenplac Tecnologia Industrial Ltda

Guararapes Painéis Ltda

Ibema Companhia Brasileira de Papel

Irani Papel e Embalagem S/A

Klabin S/A

LD Celulose S/A

MD Papéis Ltda.

Melhoramentos Florestal S/A

Munksjo Caireiras Ltda.

Norflor Empreendimentos Florestais S/A

Oji Papéis Especiais Ltda

Papirus Indústria de Papel S/A

Penha Papéis e Embalagens Ltda

Placas do Brasil S/A

Plantar S/A Reflorestamentos

RMS do Brasil Adm de Florestas Ltda

Santa Maria Cia. de Papel e Celulose

Santher - Fábrica de Papel Sta. Therezinha S/A

Softys Brasil Ltda

Sonoco do Brasil Ltda.

Stora Enso Brasil Ltda

Suzano S/A

Sylvamo do Brasil Ltda.

Symbiosis Investimentos e Participações S/A

Tarumã Florestal S/A (Lacan)

TRC Agroflorestal Ltda./TRC Agro Para

TTG Brasil Investimentos Florestal Ltda

Unilin do Brasil Revestimentos Ltda

Veracel Celulose S/A

# Collaborating member

Albany Internacional Tecidos Técnicos Ltda

# State associations

Forest Plantation Producers Association of Bahia (ABAF)

Santa Catarina Association of Forest Enterprises (ACR)

Mato Grosso Foresters Association (AREFLORESTA)

Rio Grande do Sul Forest Companies Association (AGEFLOR)

Minas Gerais Association of Forest-Based Industry (AMIF)

Paraná Forest Companies Association (APRE)

São Paulo State Forest Plantation Producers Association (Florestar São Paulo)

Mato Grosso do Sul Planted Forest Producers and Consumers Association (Reflore MS)

Agribusiness Development Center (ES) (CEDAGRO)

# Partnering companies

Brazilian Industry Association of Ferroalloys and Silicon Metal (ABRAFE)

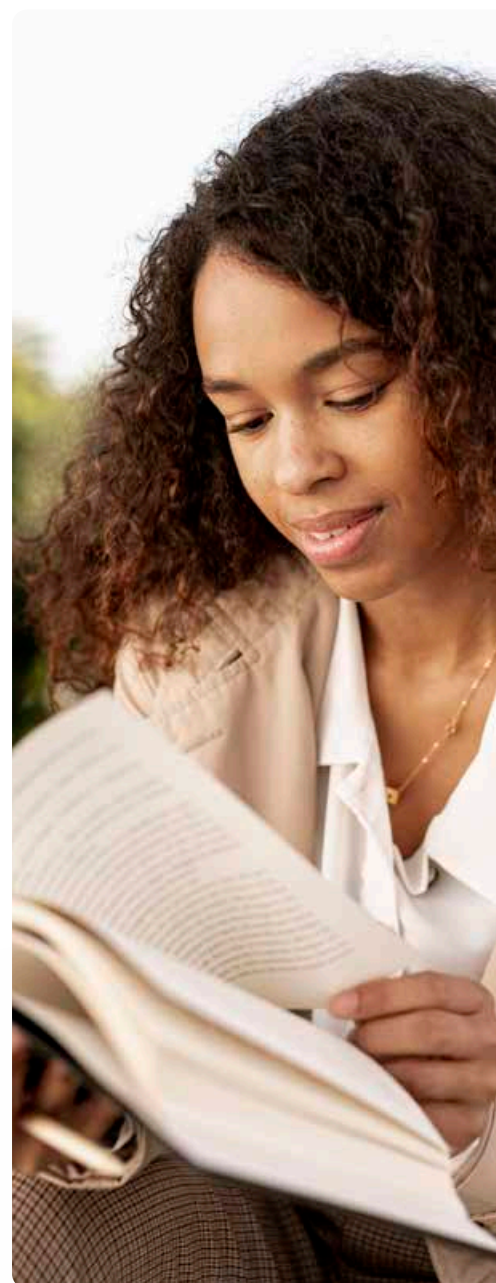
Canopy Remote Sensing Solutions

Futuragene Brasil Tecnologia Ltda

Institute of Forest Research and Studies (IPEF)

Minas Gerais State Iron Industry Federation (SINDIFER)

Society for Forest Studies (SIF)



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Legal, Statistics, Government and Institutional  
Relations, Sustainability and Climate, Taxation,  
and Regional Associations.





brazilian tree industry