

2022

Sustainability Report

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Message from our President

GRI 2-22

Four years ago we launched the Bracell brand, taking on the mission of improving people's lives by developing natural resources sustainably. As a member of RGE group, we are committed to creating value for communities, the climate and our employees and customers. Only then will our results also be positive for the company.

2022 was a landmark year in this journey. We are consistently progressing in our sustainability agenda and making apposite investments in our business and socio-environmental commitments.

The new flexible lines at the Lençóis Paulista (SP) site completed their first year of operations, with positive quality and operational efficiency results thanks to the innovative technologies harnessed by our operation. We increased our specialty sales volume by 30% compared to the previous year at the Bahia site. This meant we were able to serve our customers in Asia, the United States, Europe and Brazil, also facilitated by the solidity and speed of our logistics operation.

At the port of Santos (SP), where we operate in three terminals, we completed phase one of the construction works for the Bracell Port Terminal warehouse.

We are also investing to increase the production capacity of our nurseries, thereby assuring the quality and productivity of our eucalyptus trees, as well as keeping up with the demand for seedling production.

Lastly, we began building our Tissue paper factory at the Lençóis Paulista (SP) site, which will have the capacity to produce Tissue paper, used in the manufacture of toilet paper and paper towels, from 2024. Approximately, 2,000 jobs will be created during the plant's construction and approximately 550 direct jobs when it is operational. In early 2023, Bracell also acquired OL Papéis Ltda., a leading player in the Tissue sector in northeast Brazil, with operations in the states of Bahia and Pernambuco.

Sustainability is a part and parcel of what we do. In 2023, taking another step in this

agenda we will have an ambitious set of long-term sustainability goals aligned with the UN's Sustainable Development Goals (SDGs). This aims to augment our positive impact on the climate, nature and people, further connecting us with the circular bioeconomy and innovation, and spurring business growth.

In 2022 we unveiled our One-for-One Commitment, a groundbreaking biodiversity initiative in the pulp sector, which set a crucial sustainability goal. In the first year of this commitment, we reached a total of 82% of conserved areas, a result verified externally by a third party. We also signed up to TNFD Brazil's Action for Nature Platform, an initiative launched by the Brazilian Business Council for Sustainable Development (CEBDS), created to lead companies to play a leadership role in protecting and managing ecosystems vital to their operations.

Another important result of the year is the carbon stock of our eucalyptus plantations and native vegetation areas set aside for conservation. These areas have an important role in removing CO₂ from the atmosphere,

which in 2022 totalled 43,389,968 tCO₂e. The results are presented in our greenhouse gas inventory (GHG) and in this Sustainability Report, also independently verified externally.

All of these positive highlights have only been possible because we have a team of dedicated people who are constantly evolving. The Bracell Learning Institute opened its doors last year. This is a knowledge hub for technical and leadership training that will bolster Bracell's values whilst providing professional qualification services for the local community, focusing on our business and operations.

Over the course of the year we also moved forward in our diversity and inclusion agenda. We launched our Diversity in Action Program, with four structural pillars: race, gender, people with disabilities and LGBTQIA+. Agendas were discussed with employees in affinity groups last year, attended by Company leaders.

We also conducted salient projects in aid of local communities. Through Bracell Social

we invested more than R\$ 4.4 million into Education, Empowerment and Enhancement programs, benefiting 121,840 people.

These results were only possible because our team of 6,426 employees pulled together in the same direction, committed to and guided by our **T.O.P.I.C.C.** values.

I now take this opportunity to express my gratitude to Per Lindblom, RGE Director, for his contributions to Bracell. After four years as Executive Vice President of Bracell he has assumed a new challenge within our group, bequeathing an important legacy in Brazil.

I am taking the wheel of our Company with unbridled optimism and enthusiasm, confident that our journey will be even more fruitful in the years ahead.

In 2023 we will remain committed to continuing our strategy and maximizing our positive impacts.

Enjoy the report!

Praveen Singhavi

Bracell President

“

In 2023, we will launch an ambitious set of long-term sustainability goals aligned with the UN’s Sustainable Development Goals (SDGs). This aims to augment our positive impact on the climate, nature and people, further connecting us with the circular bioeconomy and innovation, and spurring business growth.

[1](#)[2](#)[3](#)[4](#)[5](#)[6](#)[7](#)[8](#)

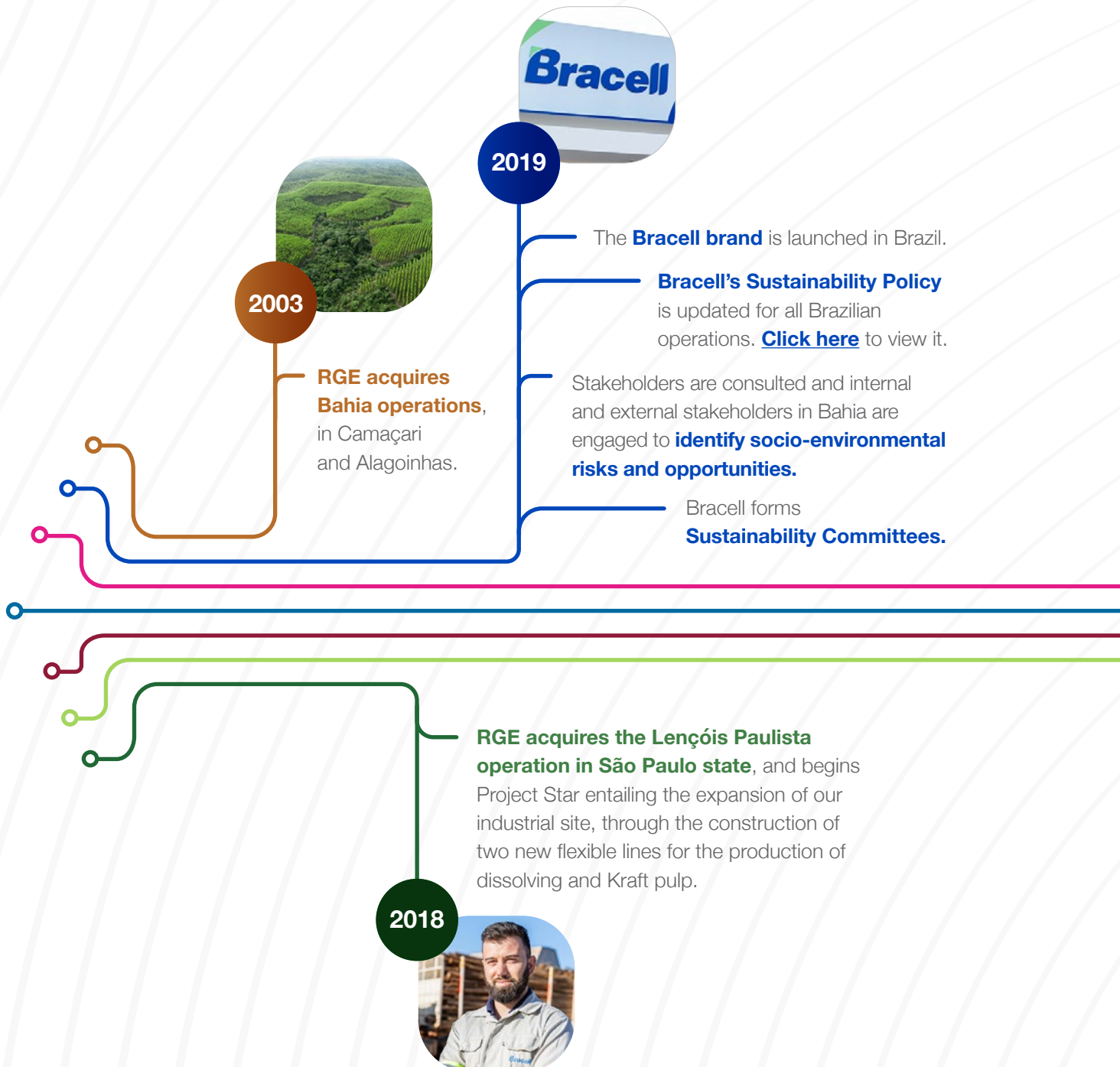
Sustainability **strategy**

GRI 2-22

The Bracell brand was launched in 2019.

A commitment to sustainable development lies at the heart of our business.

In 2022, we celebrated three years of operations and building our sustainability journey, guided by the Bracell [Sustainability Policy](#), Vision, and Strategy.





2021

Bracell becomes a member of the **Brazilian Business Council for Sustainable Development (CEBDS)**.

Launched the Sustainability Vision and Strategy and the short-term roadmap to implement key projects.

Generation of clean electricity for the National Grid - In São Paulo we received approval for commercial energy operation, feeding between 150MW and 180MW into the National Grid, enough to meet the annual requirements of roughly three million people.

Launched a project to develop our Sustainability Strategy and Vision, involving leadership. Surveys are conducted with stakeholders, document analyses are carried out, sustainability megatrends and best practices in the sector are reviewed.

Bracell joins the **United Nations Global Compact**, undertaking to annually disclose the progress made in the company's socio-environmental management, in accordance with the 10 Universal Principles.

Completed a **multistakeholder social and economic assessment** in 16 priority municipalities in Brazil's southeastern state of São Paulo.



Updated a materiality assessment to identify our priority environmental, social and governance topics from the perspective of our internal and external stakeholders.

Published Bracell's Sustainability Report and Disclosures Hub, which complied with the 2021 GRI Standards and was independently assured¹. Reported on our management approach and results across 11 material topics within our Sustainability Strategy.

Launched the One-for-One Commitment through which we pledged to protect, conserve or restore one hectare of native forests for every hectare of eucalyptus plantations by 2025. These protected areas will preserve native Atlantic Forest, *Cerrado* and *Caatinga* biomes in the three states where we operate: São Paulo, Mato Grosso do Sul and Bahia.

2020



2022





2023

We have started to develop long-term socio-environmental goals. This is our commitment to the planet, to society and each and every individual, for a better and more sustainable future.

We want to place Bracell at the forefront of the sustainability movement in Brazil and worldwide.

We set up Working Groups to define Bracell's long-term socio-environmental goals and its respective baseline, so that we can nurture a consensus around quantifiable long-term targets and their respective implementation plans.

Bracell's goals were outlined in the **Brazilian Business Commitment to Biodiversity**, of CEBDS.

Joined two CEBDS programs, in partnership with WBCSD (World Business Council for Sustainable Development): the Action for Nature Platform and the Net Zero Movement².

Bracell **revises and prioritizes its Sustainability Strategy targets**. The prioritization process embraces topics and information of material interest to ESG rating agencies, sustainability indices and our internal and external stakeholders. We also analyzed reference documents and benchmarks for the sector (national and international).

We understand that sustainability is a **journey and everyday our journey progresses further**. To take an important step it is necessary to lay down long-term commitments and goals, which are measurable and will be closely tracked by our senior leadership.

¹ Bracell has been publishing a sustainability report since 2010, reporting social and environmental performance updates in accordance with GRI standards since 2011. The published data denotes operations in Bahia up until 2017. From 2018 the results embrace Bracell's entire operation in Brazil, therefore including operations in São Paulo state and, in 2021 those in Mato Grosso do Sul state. Bracell's Sustainability Reports have been independently audited since 2019. These reports can be seen [here](#).

² The Action for Nature Platform is a program that strives to understand, protect and manage the dependence of participating companies and their impacts on biodiversity, by collectively implementing new frameworks, targets and international legislation. The Net Zero movement is a program that aims to turn corporate climate neutrality targets into reality, by practically supporting the implementation of decarbonization processes.



Sustainability Vision

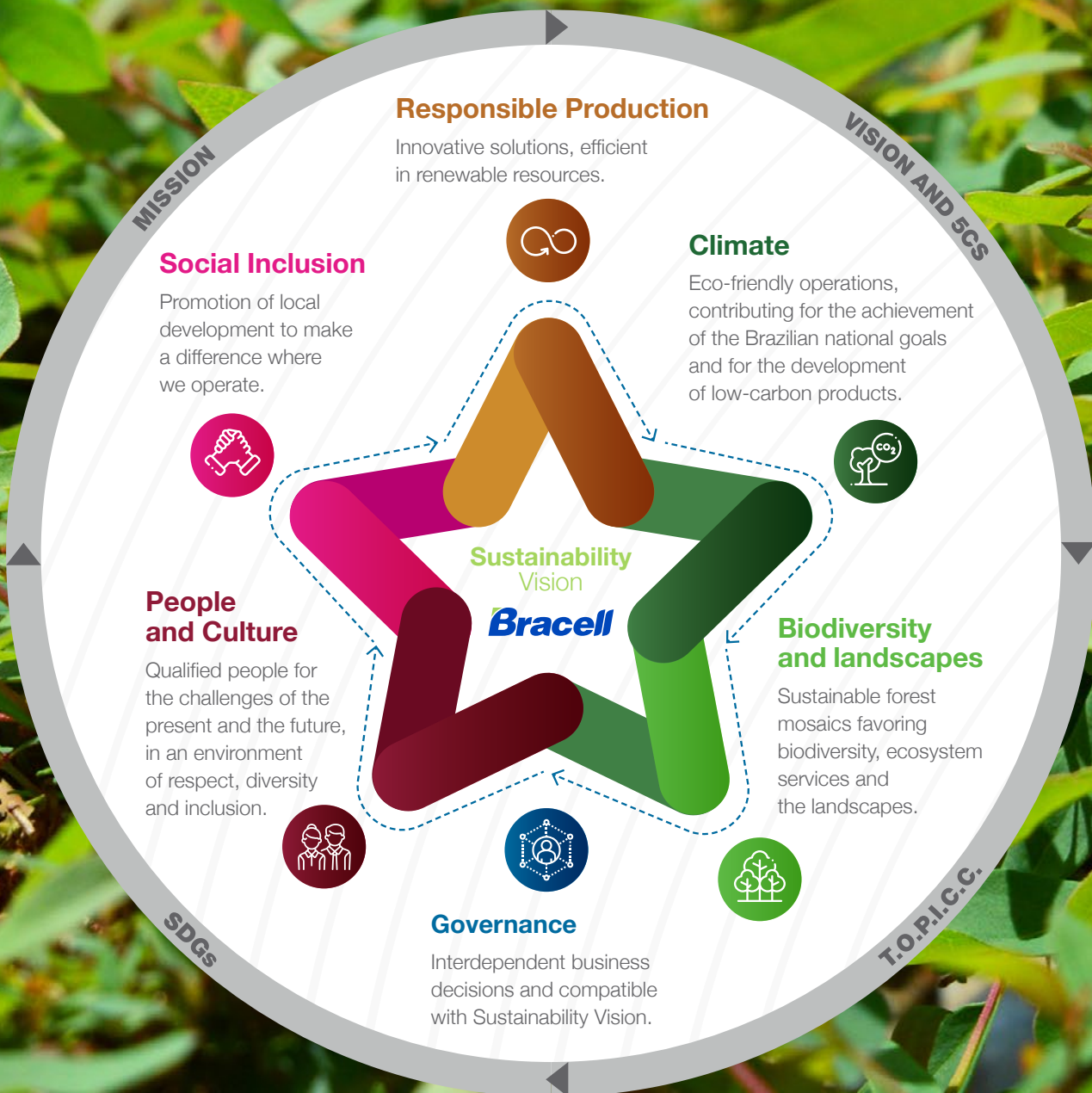
Bracell is committed to being a sustainable business in the circular bioeconomy. We seek to revolutionize the forest-based pulp industry and remain at its forefront, while providing diversified products from responsibly managed, renewable plantations. We believe in creating shared value as well as building impactful and long lasting partnerships, so we may continuously do good for Communities, the Country, the Climate, our Customers and then the Company itself.



Sustainability Strategy

Our Sustainability Strategy is founded upon six pillars covering environmental and social, policy and management practices: Responsible Production, Climate, Governance, Biodiversity and Landscapes, People and Culture, and Social Inclusion.





Material topics GRI 3-1

In 2022, we updated our list of material socio-environmental topics, which are important due to their potential to create positive impacts in our geographies, local communities and the planet, and their extreme importance to our risk management and prevention and mitigation of adverse impacts. In respect of these we have published our management practices and results in this Sustainability Report and in our [Disclosures Hub](#).

The updating process entailed:

- 1 Reviewing industry and company documentation on sustainability, and benchmarking our performance against industry peers.
- 2 Quantitative and qualitative surveys of our leadership team and key stakeholders (employees, suppliers, pulpwood producers, communities, customers, government agencies and trade associations) through interviews and question and answer forms.
- 3 Identifying 11 material social and environmental topics of importance to Bracell (material topics) approved by the Bracell leadership team, which were then included in our new materiality matrix.



Read more at our GRI Disclosures Hub:

GRI 3-2 [Process to determine material topics](#)

List of material topics

GRI 3-2

Sustainability Strategy Pillar	Material topic	GRI Disclosures	SASB Disclosures	SDG ¹	Global Compact ²
People & Culture	Valuing our human capital	404-1, 404-2, 404-3		4, 5, 8, 10	6
	Employee health, safety and well-being	403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-8, 403-9, 403-10		3, 8, 12, 16	
	Diversity, inclusion & equality	2-7, 2-8, 405-1, 405-2, 406-1		3, 5, 8, 10	6
Climate	Energy efficiency	302-1, 302-2, 302-3, 302-4, 302-5	RR-PP-130a.1	7, 8, 12, 13	7, 8, 9
	Climate change ⁴	201-2, 305-1, 305-2, 305-3, 305-4, 305-5	RR-PP-110a.1, RR-PP-110a.2	3, 12, 13, 14, 15	7, 8, 9
Biodiversity and landscapes	Biodiversity	304-1, 304-2, 304-3, 304-4		6, 14, 15	8
Responsible production ³	Screening suppliers using social and environmental criteria	308-1, 308-2, 408-1, 409-1, 414-1, 414-2	RR-PP-430a.1	5, 8, 12, 16	2, 4, 5, 8
	Water stewardship: water and effluents	303-1, 303-2, 303-3, 303-4, 303-5	RR-PP-140a.1, RR-PP-140a.2	6, 12	7, 8
	Human rights in the value chain	410-1			1
Governance	Compliance, ethical conduct, integrity and transparency	2-27, 205-1, 205-2, 205-3, 206-1		12, 16	8, 10
Social Inclusion	Community engagement ⁴	203-1, 203-2, 411-1, 413-1, 413-2		1, 2	1

1. SDGs we support through our material topics, by GRI disclosure.

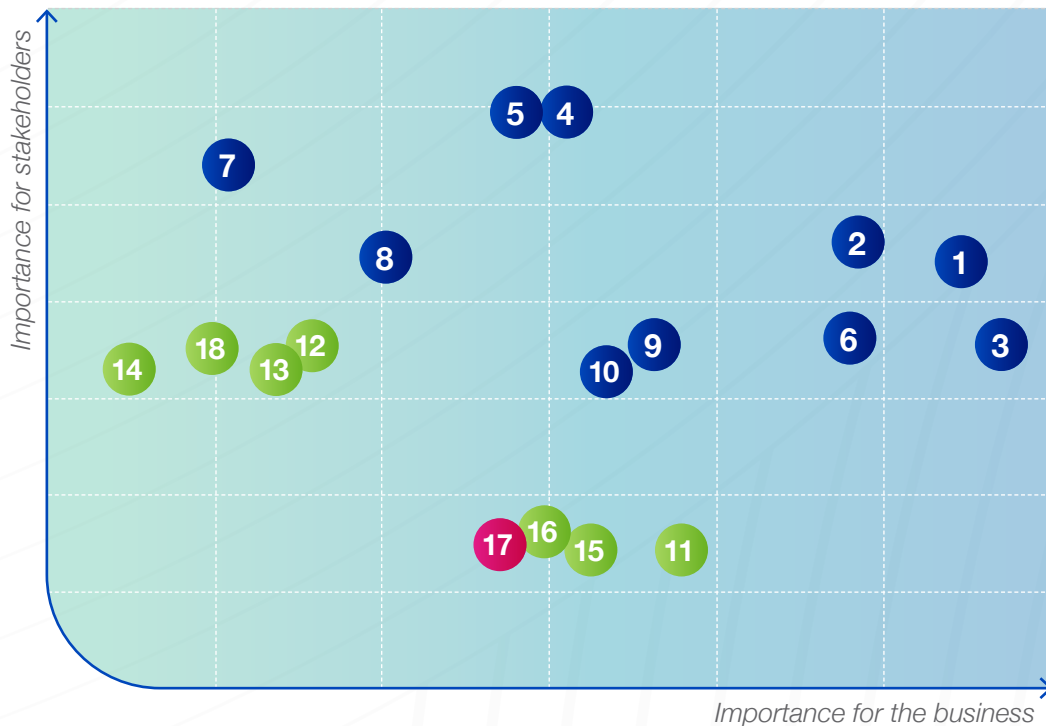
2. Global Compact Principles we uphold as a signatory by addressing our material topics, by GRI disclosure.

3. Although stakeholders have not identified this topic as being material, we continue to report on waste management given the relevance of this topic. This Sustainability Report and the Bracell Disclosures Hub therefore include GRI disclosures 306-1, 306-2, 306-3, 306-4, 306-5 and a corresponding description of our management approach.

4. Although not directly linked to our material topics, GRI disclosures 201-2 (Financial implications and other risks and opportunities due to climate change), 203-1 (Infrastructure investments and services supported) and 203-2 (Significant indirect economic impacts) are related to topics that are strategic for our value chain. For this reason, our management approach and performance for these disclosures have been reported in our 2022 Sustainability Report.

Materiality matrix

- | | |
|---|---|
| 1 Diversity, inclusion & equality | 11 Economic performance and growth |
| 2 Compliance, ethical conduct, integrity and transparency | 12 Anti-corruption practices |
| 3 Biodiversity | 13 Innovation, R&D, technology and new products |
| 4 Climate change | 14 Forestry certification |
| 5 Water stewardship: water and effluents | 15 Improvement of governance practices |
| 6 Employee wellness, health and safety | 16 Job creation and employee development |
| 7 Energy efficiency | 17 Valuing our human capital |
| 8 Screening suppliers using social and environmental criteria | 18 Customer satisfaction, impacts and product quality |
| 9 Human rights in the value chain | |
| 10 Community engagement | |



● Material topic
 ● Non-material topic
 ● Topic promoted to material

Social and environmental commitments

GRI 2-28

We are a member of Brazilian and international trade associations, committees, forums and organizations, where we provide inputs into discussions on important issues within the sustainability agenda.



The United Nations Global Compact

We have been signatories of the Global Compact since 2020 and actively support its Ten Universal Principles and the 2030 Agenda. For information on how our material topics relate to Sustainable Development Goals (SDGs), see our [Disclosures Hub](#). Bracell annually publishes a [Communication on Progress](#) report describing its performance against the Ten Universal Principles. We participate in Global Compact platforms, such as the Action on Human Rights and Action against Corruption. Bracell has been participating in the SDG Ambition program since 2023.



Women's Empowerment Principles (WEPs)

We have been a signatory to the Women's Empowerment Principles (WEPs) since 2020. This is set of guidelines for businesses on promoting gender equality and women's empowerment at the workplace, in the job market and in communities.





Brazilian Business Council for Sustainable Development (CEBDS)

In 2021, Bracell joined CEBDS, a not-for-profit civil association that promotes sustainable development through advocacy to government and civil society, and represents Brazil at the World Business Council for Sustainable Development (WBCSD). We are members of Thematic Chambers on Energy and Climate Change, Biodiversity and Biotechnology, and Social Impact.



Brazilian Forestry Association (IBÁ)

We are members of the Brazilian Forestry Association (Ibá) and participate in multiple working groups and committees – including Climate Change and GHG Inventory, Certifications and Biodiversity.



Rede Mulher Florestal

In January 2023, Bracell joined *Rede Mulher Florestal* (“Women in Forestry Network”), an independent network of female professionals and students in the forestry sector. It operates as a non-governmental, non-profit and non-partisan organization dedicated to fostering discussion around gender equity in forestry.



Read more at our GRI Disclosures Hub:

GRI 2-23 [Policy commitments](#)

GRI 2-28 [Membership associations](#)

Note: we also participate in trade organizations, associations and external committees to accompany and support discussions about social and environmental topics and important sector issues. See the full list in our [Disclosures Hub](#), in disclosure **GRI 2-28**.

Our stakeholder engagement practices

GRI 2-29

Stakeholders are engaged by various teams among our workforce. Institutional stakeholder engagement is carried out by our Institutional Relations team. We help to advance local and regional development through strategic partnerships with governments and private organizations, working closely alongside local communities.

We identify and prioritize our leading stakeholders by analyzing the impact and influence of our industrial and pulpwood operations. We then harness this assessment to develop specific actions to maintain ongoing engagement with our stakeholders.

Employees, customers, local communities, suppliers, government agencies and trade organizations are strategic stakeholders for Bracell.



Read more at our GRI Disclosures Hub:

GRI 2-29 [Approach to stakeholder engagement](#)





2 About Bracell

Bracell is a Brazilian-based, world-leading producer of dissolving pulp, operating in Bahia state since 2003 and São Paulo state since 2018.

We operate mills in industrial districts in Camaçari, Bahia, and Lençóis Paulista, São Paulo, each locally headquartered. We also have forestry operations in these two states as well as in Mato Grosso do Sul and Sergipe states, where we started our operations in 2021 and 2022 respectively.

We are a member of the Royal Golden Eagle (RGE) group of companies. Headquartered in Singapore, RGE is a global, privately owned, diversified enterprise employing over 60,000 people, which has had a presence in Brazil since 2003. **GRI 2-1**



Mission

Improving lives by developing resources sustainably.



Vision

To be a globally leading producer of dissolving pulp, with the best management fully committed to the sustainable use of natural resources; our aim is to consistently create value for the Community, Country, Climate, Customers and the Company.



Core Values

We believe that in order to fulfill our mission and achieve our vision of the future, leaders and employees must always comply with **T.O.P.I.C.C.** values.





T O P

We are aligned
 by our common
 purpose and work
 together as a
**complementary
 Team**



We take
Ownership
 to achieve
 outstanding results
 and seek value
 at all times



We develop
 our **People** to
 grow with us





I

We act with
Integrity
at all times



C

We understand
our **Customers**
and deliver best
value to them



C

We act with zero
complacency
and always strive
for **Continuous
improvement**



Our operations

GRI 2-6



Mills¹

1 in the industrial district of Lençóis Paulista (SP)

1 in the industrial district of Camaçari (BA)



Production capacity in 2022

3 million metric tons of Kraft pulp per year or

2 million metric tons of dissolving pulp per year



Eucalyptus plantations areas situated in:

36 municipalities in the state of Bahia (along the Northern coast and in the Agreste region)

113 municipalities in the state of São Paulo (Midwest region)

9 municipalities in the state of Mato Grosso do Sul

3 municipalities in the state of Sergipe



Nurseries (80 million seedlings per year)

2 in Bahia (1 in Entre Rios e 1 in Inhambupe)

2 in São Paulo (in Lençóis Paulista)



Laboratories

5 forestry R&D labs: 4 in Bahia
1 in São Paulo

2 industrial R&D labs: 1 in Bahia
1 in São Paulo

1 Both our operations are locally headquartered (BA and SP). Our industrial facility in São Paulo was expanded in 2021 with two new flexible lines that can alternate between the production of dissolving and Kraft pulp in response to market demand.





Logistics operations

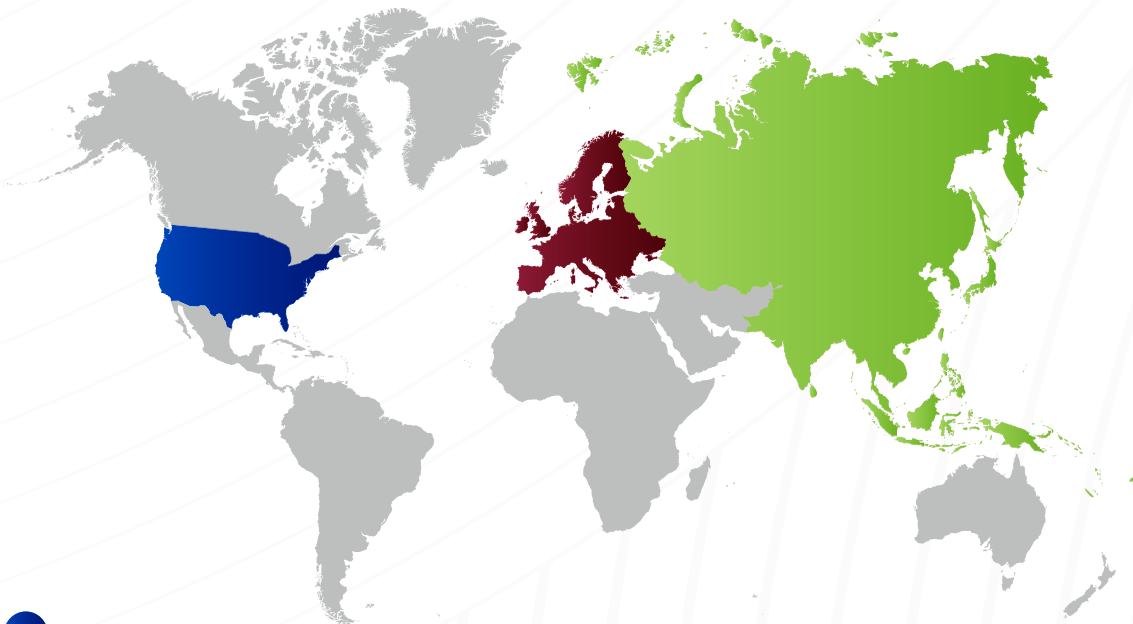
1 truck and rail terminal in Pederneiras (SP)

3 terminals at the Port of Santos (SP):
2 managed by Bracell and
1 operated by a third-party company

1 terminal in the Port of Salvador (BA):
Bracell is responsible for the largest cargo movement in this port



Specialty pulp distribution centers



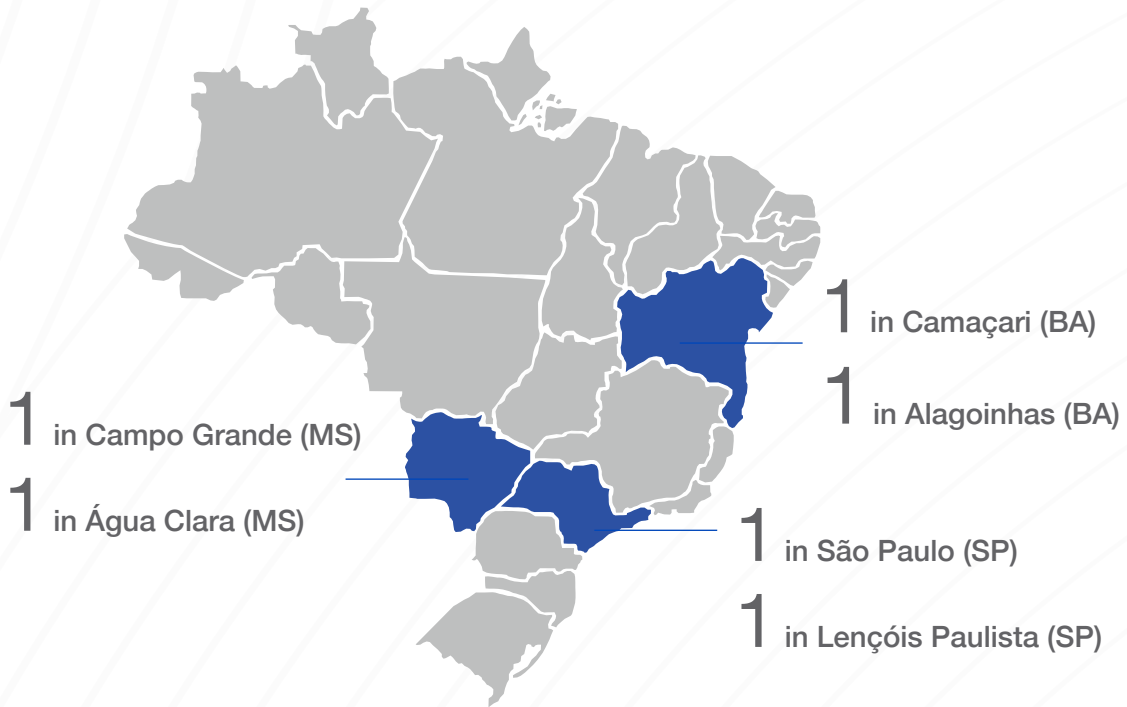
● United States

● Asia

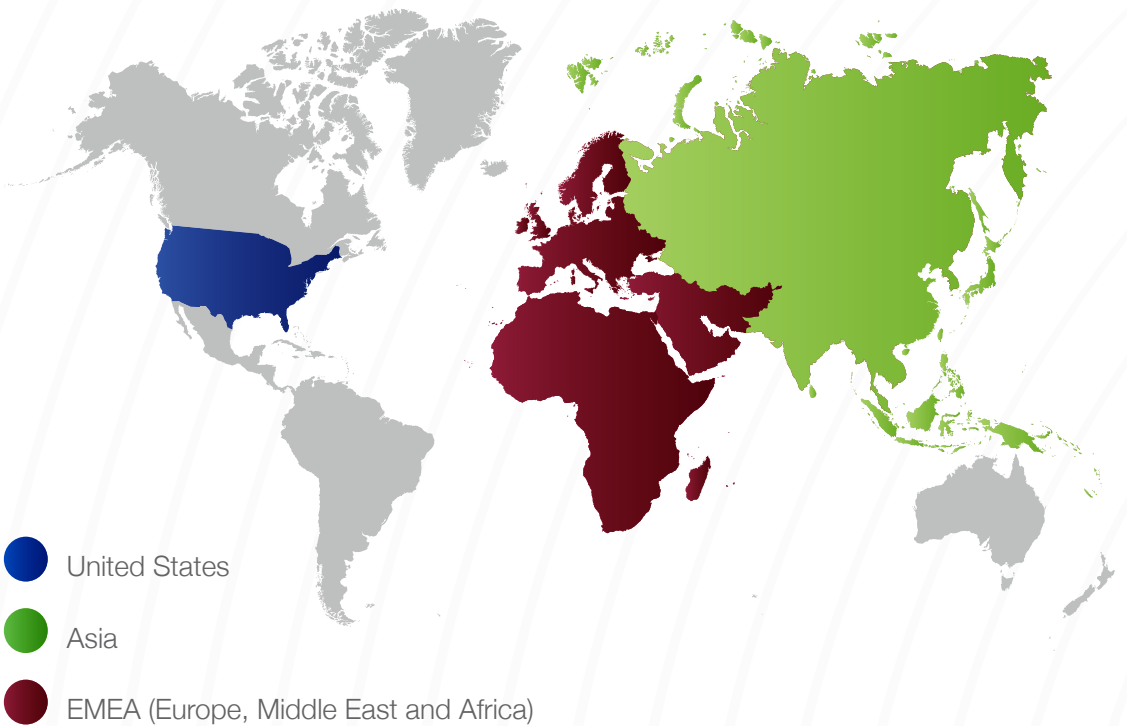
● Europe



Offices



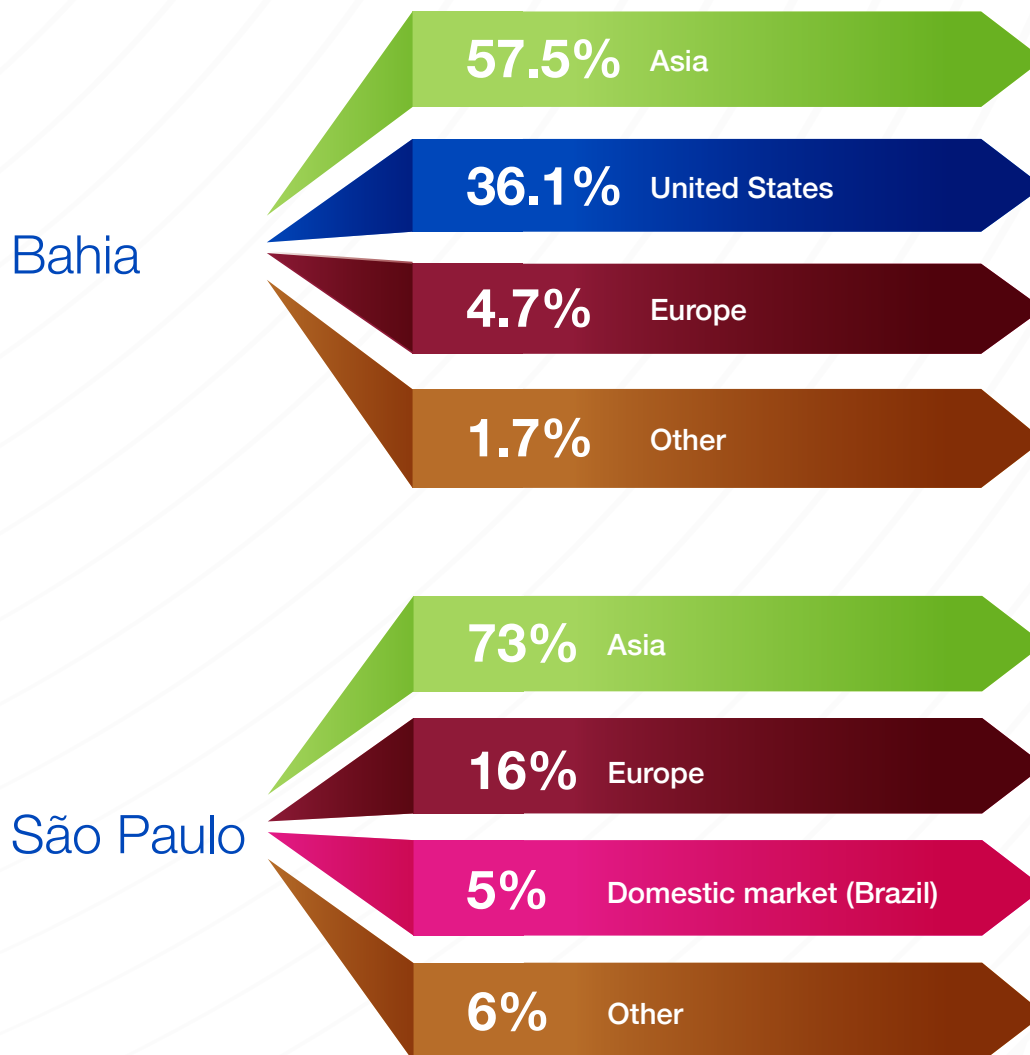
Comercial hubs²



² Bracell operates a trading business in the US.

Main markets destinations in 2022

Percentage of allocated volume



Close relationship with the customer

One of our priorities is to stay close to our customers, so that we can understand their needs and deliver products with better added value. For this, we have strengthened continuously our logistics and relationship structure (Learn more on [page 103](#))

Products and applications

GRI 2-6

We make dissolving and Kraft pulp for sale in Brazil, the Americas, Asia and Europe. Bracell pulp is used to manufacture everyday items for people around the world.



Bleached eucalyptus Kraft pulp is used to manufacture:

- Printing and writing paper
- Toilet paper and paper towels
- Filter paper
- Self-adhesive paper, tapes and packaging



Rayon-grade dissolving pulp, for the manufacture of:

- Viscose and lyocell fibres used in fabrics and nonwovens
- Viscose filaments used in delicate fabrics such as women's underwear
- Wet wipes
- Cosmetic masks
- Cellophane packaging films
- Viscose pads for household and industrial cleaning applications



Specialty-grade dissolving pulp is used to manufacture:

- Cellulose acetate flakes (cigarette filters, textile filament yarns and fibers for nonwovens)
- Pharmaceutical and food products (produced from microcrystalline cellulose)
- Printing inks, specialty inks, enamels and cosmetics (produced from nitrocellulose)
- Industrial filament used to produce tire reinforcements
- Cellulose ethers and artificial sausage casings (specialty applications)

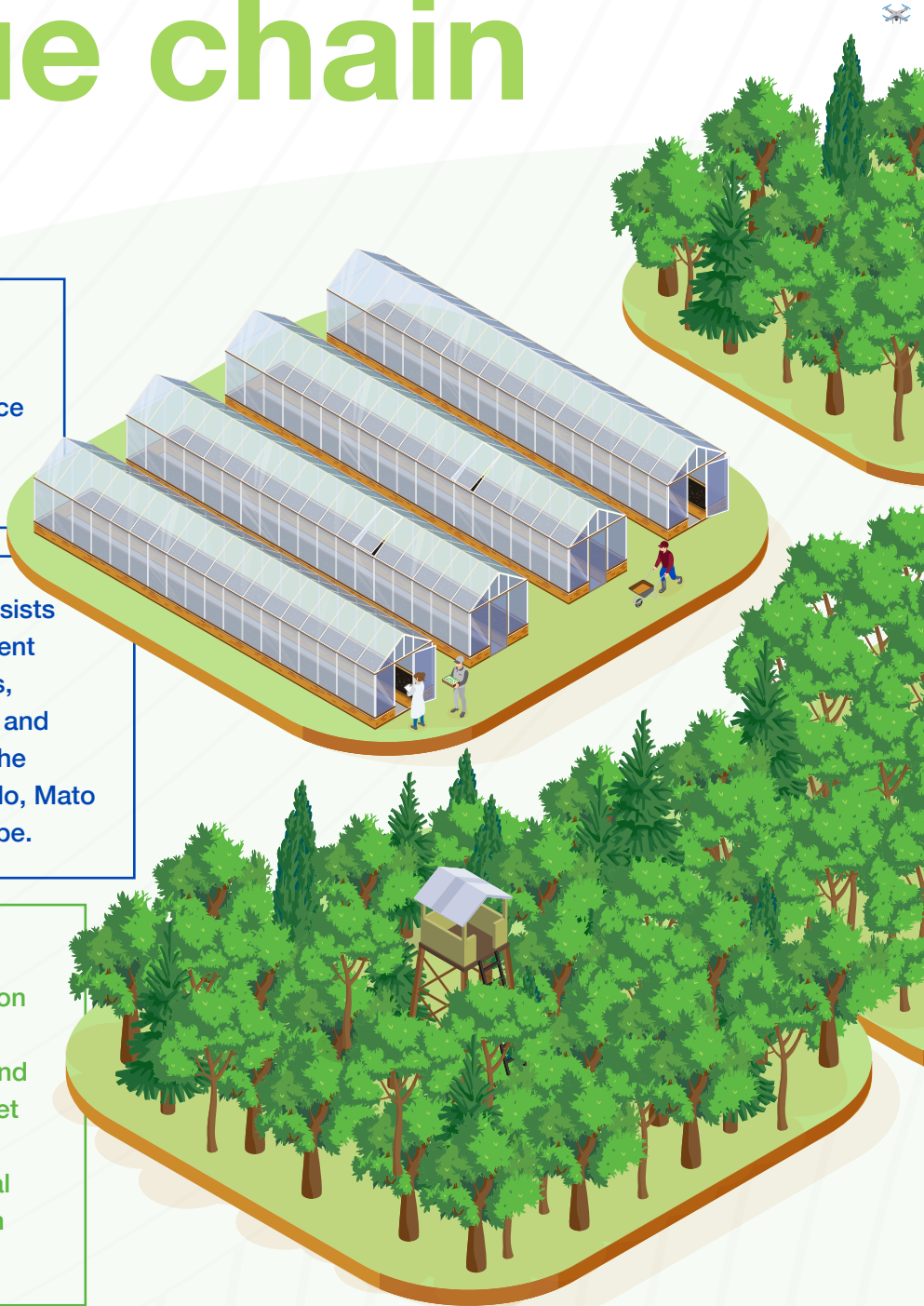
Bracell value chain

Bracell has four eucalyptus seedling nurseries that can produce 80 million seedlings per year.

Our business model consists of sustainable management of eucalyptus plantations, the purchasing of timber and forestry partnerships in the states of Bahia, São Paulo, Mato Grosso do Sul and Sergipe.

We closed the year with 43,389,968 tCO₂e of carbon stock in forest areas (eucalyptus plantations and native vegetation areas set aside for conservation), which have a fundamental role in removing CO₂ from the atmosphere.

Suppliers are monitored by our Contract Management System, platform that onboards contractual documents, checks legally required documents, and verifies any documents that prove compliance with labor and safety laws. The procedures related to certifications monitor compliance to environmental legislation.






Conservation of biodiversity, ecosystem services and landscapes: our eucalyptus timber comes from land previously disturbed by other agricultural activities, i.e., areas on which other crops have already been planted. We plant eucalyptus in forest mosaics, alternating eucalyptus plantations with areas of native forest, set aside for conservation.

Our mills are ISO 9001:2015, ISO 14001:2015, Halal and Kosher certified and our Eucalyptus plantations are Cerflor/ PEFC certified. Every six months, on average, we are audited against International Finance Corporation Standards. We comply with the standards of the International Labour Organisation and the Equator Principles.

We invest in technology, infrastructure and training for all firefighters to prevent and combat forest fires.

One-for-One Commitment: we have pledged to protect, conserve or reclaim one hectare of native forest for every hectare of eucalyptus plantations by 2025— in the states of São Paulo, Mato Grosso do Sul and Bahia. This pledge will help protect areas in the Atlantic Forest, Cerrado and Caatinga biomes. In 2022, we had a total of 82% of conserved areas. That is 0.82 ha of conserved area for each planted hectare. These are areas of native vegetation, legal reserve and permanent preservation.

We hire local suppliers to provide products and services for our pulpwood, industrial, logistics (timber and pulp) and administrative operations.

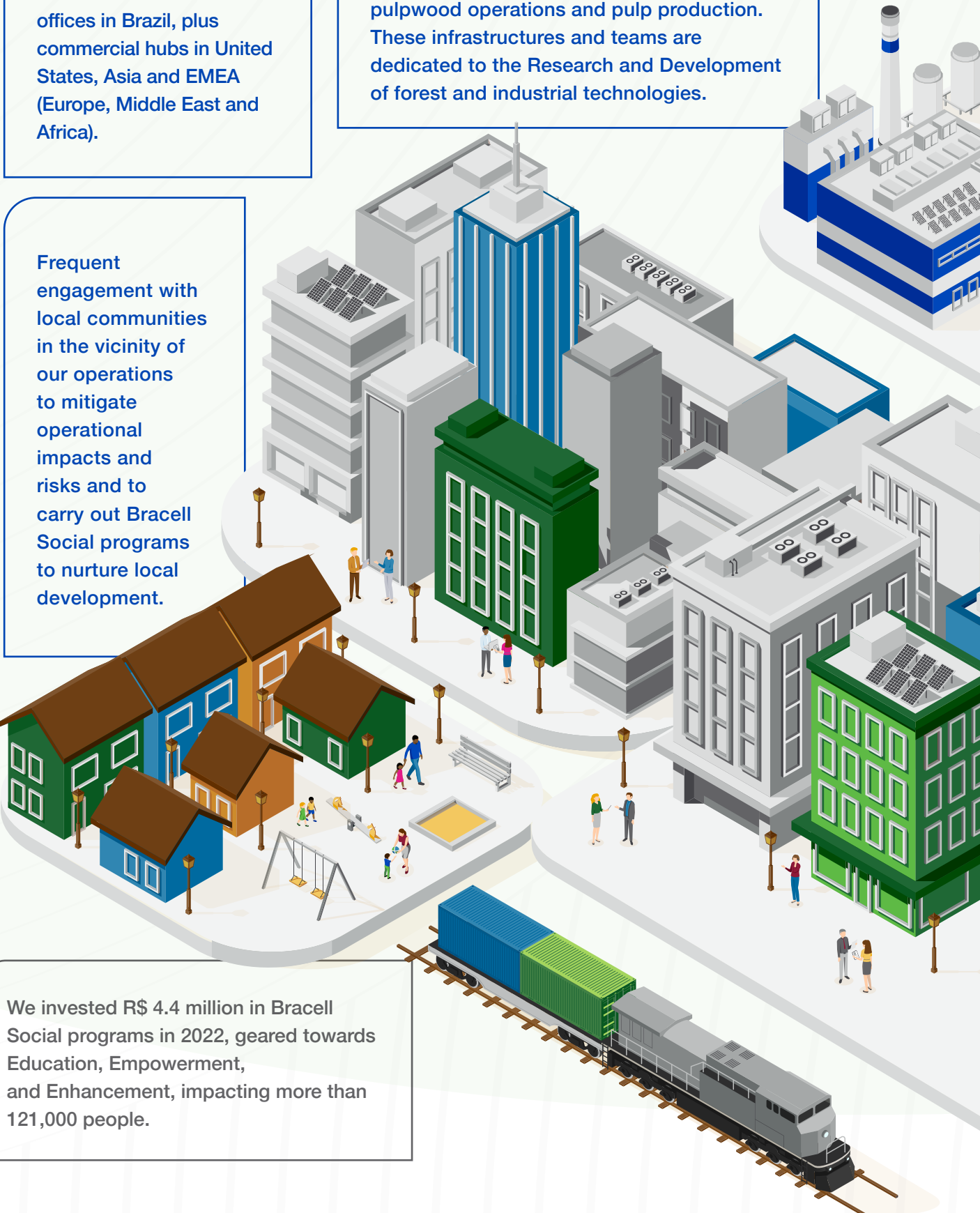
-  Inputs
-  Business Impacts
-  Impacts on the Value Chain

○ Inputs ○ Business Impacts ○ Impacts on the Value Chain

We have 6 administrative offices in Brazil, plus commercial hubs in United States, Asia and EMEA (Europe, Middle East and Africa).

7 Research and Development laboratories for pulpwood operations and pulp production. These infrastructures and teams are dedicated to the Research and Development of forest and industrial technologies.

Frequent engagement with local communities in the vicinity of our operations to mitigate operational impacts and risks and to carry out Bracell Social programs to nurture local development.



We invested R\$ 4.4 million in Bracell Social programs in 2022, geared towards Education, Empowerment, and Enhancement, impacting more than 121,000 people.

6,426 direct employees and 17,867 outsourced workers.

We have two pulp production sites, in Bahia and São Paulo, with an annual production capacity of 2 million metric tons of dissolving pulp or up to 3 million metric tons of Kraft pulp.

We have approval for the commercial energy operation, feeding between 150MW and 180MW into the National Grid, enough to meet the annual requirements of roughly three million people.

Safety: Line 1 in Lençóis Paulista reached the landmark of two years without lost-time injuries, including own and third party employees.

Multimodal logistics using roads, railways and maritime shipping, using company and third-party assets.

Specialty pulp distribution centers in the US, Europe and Asia.

Strategy and performance

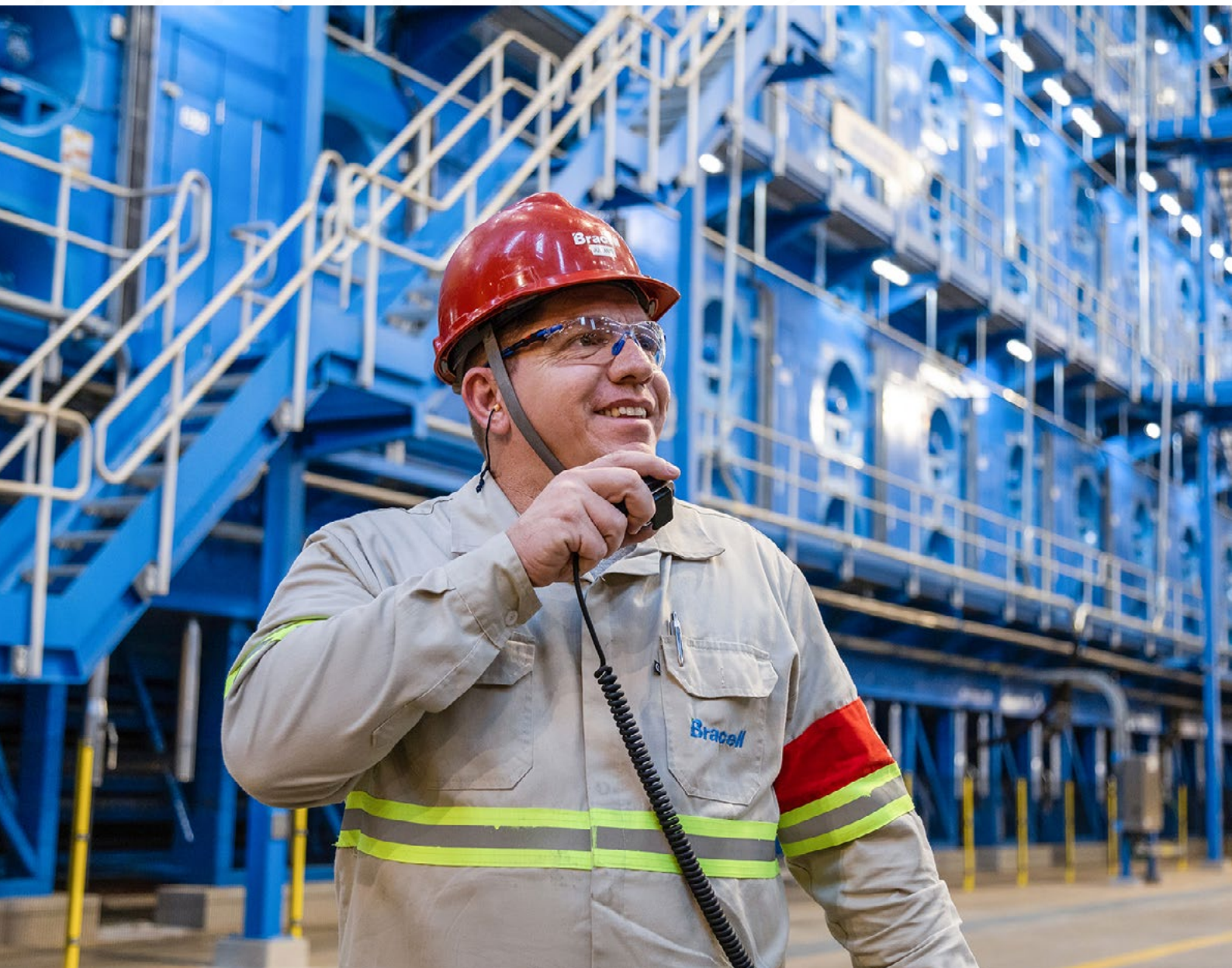
We are committed to our target of being one of the largest dissolving pulp producers in the world, with the best management fully committed to the sustainable use of natural resources creating value for the Community, the Country, the Climate, our Customers and the Company. These principles underpin our business decisions and strongly reflect the values enshrined by our founders.

With two new flexible lines coming on stream at our Lençóis Paulista site in São Paulo in September 2021, we enjoyed record pulp production in 2022. We also achieved our best ever occupational safety result in operations in São Paulo. Line 1 in Lençóis Paulista reached the landmark of two years without lost-time injuries (read more in People and Culture, on [page 48](#)).

Elsewhere, we are investing in a Tissue factory in our São Paulo site in line with the growth we are experiencing in our markets, especially in Latin America. This project will create an estimated 2,000 direct

jobs during the construction stage and approximately 550 permanent jobs once it is up and running. The new factory will have four machines for producing Tissue paper, used in the manufacture of toilet paper and paper towels, with a production capacity of 240,000 metric tons a year. Operations are forecast to start in 2024.

This investment will consume just a small part of the company's pulp production capacity. We remain wholeheartedly committed to serving our customers as a reliable pulp supplier with a lengthy track record in the market.



To ensure we deliver high-quality products to our customers, we ramped up our efforts to attract and retain talents who are both highly skilled and committed to continuous improvement. We provide training and learning programs to enable the constant development of our employees, alongside initiatives guaranteeing a more diverse and inclusive workplace (read more in People and Culture, on [page 48](#)).

Last year we also made substantial progress on our pledge to conserve and preserve biodiversity. We invested in technology to prevent and fight forest fires and upsized our internal team of firefighters. We are also progressing on our One-for-One Commitment and our alignment with the public sector to maximize the program's benefits (read more in Biodiversity and Landscapes on [page 106](#)).

2022

Headlines



Forestry operations

Maintenance of forestry certifications - Cerflor/PEFC in São Paulo and Bahia operations and ISO 14001:2015 in Bahia operations.

Construction of the 8,800 m² workshop - As part of our logistics operation we inaugurated an workshop equipped with the latest automotive maintenance technology.

R&D - Biological pest control through the creation and release of 63 million natural enemies.

Monitoring centre - We implemented control towers with monitoring cameras that reach a radius between 15km and 20km, covering 90% of eucalyptus plantations and conservation areas. The data is collected by the Monitoring centre 24 hours a day, seven days a week, so that we can quickly implement action plans when necessary, for example, in cases of fire.



Mill operations

Tissue Project launch - The new factory will have four machines for the production of Tissue paper, used in the manufacture of toilet paper and paper towels, with a production capacity of 240 thousand tons per year. Operations are expected to start in 2024. The factory will be one of the most modern and sustainable in the world, 100% automated and the only one in Brazil to operate completely free of fossil fuels.

We set a specialty-grade dissolving pulp production record - 480,777 metric tons in 2022 in our operation in Bahia.

Generation of clean electricity for the National Grid - In São Paulo we received approval for commercial energy operation, feeding between 150MW and 180MW into the National Grid, enough to meet the annual requirements of roughly three million people.

Maintenance of ISO 9001 and ISO 14001 certifications -

For our operations in Bahia and Sao Paulo, which now has 100% of its operations certified in accordance with the two standards (lines 1 and 2).

Safety - Line 1 in Lençóis Paulista reached the landmark of two years without lost-time injuries, considering own and third party employees.

Bracell's Port Terminal in Santos - Stage I of the Bracell Port Terminal in Santos was delivered, including the administrative office and the first stage of the warehouse.



Sustainability

Carbon stock - We closed the year with 43,389,968tCO₂e of carbon stock in forestry areas (eucalyptus plantations and native vegetation areas set aside for conservation).

Action for biodiversity - We assumed the One-For-One Commitment in 2022, closing the year with a total of 82% of conserved areas. That is 0.82 ha of conserved area for each planted hectare.

Carbon monitoring in planted forests - Bracell, represented by the R&D Department, is part of the Eucflux-IPEF Cooperative Program, which monitors carbon flux and water in eucalyptus plantations. The flow tower with the equipment that monitors these components is situated in an eucalyptus plantation area, part of Bracell operations, in the municipality of Itatinga (SP). The Program is led by IPEF (Institute of Forestry Research and Studies) and CIRAD (French Agricultural Research Centre for International Development), and was started in 2007. It has several affiliated companies from the pulp sector, including Bracell, and representative institutions from academia, such as the Federal University of Lavras, UNESP (Paulista State University) and the University of São Paulo (Esalq).

Socio-environmental goals - We have started to develop long-term socio-environmental goals, part of the Company's commitment to the planet, to society and to each individual for a better and more sustainable future.

Social investment - We invested more than R\$ 4.4 million in social programs that benefited approximately 121,000 people.

Bracell Learning Institute - We inaugurated our knowledge hub for technical and leadership training, which will reinforce our values. The institute will also have professional qualification actions for the local community.



3 Governance

GRI 2-9

Each business within the Royal Golden Eagle (RGE) Group has its own management systems and controls to ensure compliance with local laws and regulations. Business-specific key performance indicators are compiled on an annual basis to inform decision-making.

RGE has a Board of Directors comprised of executives from the group, and each business group has its own CEO, management teams and boards. RGE Board members are assigned to individual businesses to provide oversight. Bracell's key executives report on business performance and other corporate matters on a weekly basis to the RGE Board of Directors. Bracell's corporate governance model encourages interdependent decision-making in line with our mission and vision, our **T. O. P. I. C. C.** core values, and our Code of Conduct. It also reinforces our sustainability guidelines and our philosophy of creating value for the Community, Country, Climate, Customers, and Company.

Bracell has formed a Steering Committee, comprising members of our senior leadership team, responsible for making strategic decisions, evaluating potential investments, and tracking its social and environmental performance. This committee is advised by the Sustainability and Crisis Committees to identify opportunities and actions to mitigate short-, medium- and long-term impacts.

The new Sustainability Committee merged the previously separate sustainability committees of São Paulo and Bahia,

and includes members from key areas of the business, but no external, independent members. The committee monitors and oversees the implementation of our Sustainability Strategy, managing social and environmental risks and opportunities across the value chain.

In 2022, the Steering Committee approved new guidelines for the development of long-term socio-environmental goals (read more on [page 11](#)).

In addition to its Steering Committee we also have a Crisis Committee for managing unexpected incidents that could impact the image, reputation, operation or stakeholders of Bracell's value chain.

Bracell does not have specific committees for addressing agendas of social groups with low representation, with direct reporting to the Steering Committee. Our Head of Institutional Relations, Social Responsibility and Community Relations is responsible for receiving and addressing concerns from underrepresented social groups. The grievance cases are addressed by the company departments directly involved with the issues that are raised.



Steering Committee (2022)

RGE Director and Executive Vice President of Bracell: Per Lindblom¹ **GRI 2-11**

Senior vice president: Pedro Stefanini²

Vice president, Sustainability and Communications: Marcio Nappo

Director, Bracell Bahia: Guilherme Araújo

Interim Head of Human Resources: Min Chia Chang

Chief Operating Officer (COO): Clinton Clive Van Vught

1 Praveen Singhavi was appointed Bracell President in January 2023.

2 Remained in the position until June 15, 2022.

Note 1: All members of the leadership team hold executive positions.

Note 2: Bracell's senior executives have permanent roles, although the composition of the board may change with business strategy.

Note 3: In Bracell's Steering Committee in 2022 was made up as follows: Men: 83.4%, and Women 16.6%.

Note 4: Bracell does not have independent members on its governance committee.

Bracell has internal policies, processes and procedures to identify actual and potential impacts of its operations, and to mitigate them during all stages thereof. The Sustainability Committee monitors and oversees the implementation of our Sustainability Strategy, managing social and environmental risks and opportunities across the value chain.

Bracell ideally updates its materiality matrix about every two years in order to reflect changes in the company's group of stakeholders and their demands.

Bracell senior leadership participates in the updating and monitoring of the Company's

matrix of social and environmental risks and also validates and approves the material topics prioritized in its materiality assessment, by consulting these internal and external stakeholders. These topics are connected to Bracell's Sustainability Strategy and the procedures and initiatives carried out by the Company in its daily operations.

The heads of strategic operations report on business performance and other corporate matters on a weekly basis to the RGE Executive Board of Directors, and are involved in the development and approval of Sustainability Reports.



Read more at our GRI Disclosures Hub:

GRI 2-10 [Nomination and selection of the highest governance body](#)

GRI 2-12 [Role of the highest governance body in overseeing the management of impacts](#)

GRI 2-14 [Role of the highest governance body in sustainability reporting](#)

GRI 2-16 [Communication of critical concerns](#)

GRI 2-17 [Collective knowledge of the highest governance body](#)

GRI 2-18 [Evaluation of the performance of the highest governance body](#)

Responsible social and environmental management

GRI 2-23

Our operations are managed in accordance with the United Nations (UN) Global Compact's Ten Principles and the UN Women's Empowerment Principles. We also follow the [Equator Principles](#) in managing social and environmental risks in our projects, as well as the standards of the International Labor Organization (ILO).

Our operations are certified to Cerflor/PEFC, ISO 9001:2015 (for our mills in Bahia and São Paulo) and ISO 14001:2015 (for our mills in São Paulo and Bahia, and our forestry operations in Bahia, all of which are covered by our Integrated Management System).



We are audited by the International Finance Corporation (IFC) for compliance with its Performance Standards every six months, on average. This is a condition for receiving project finance for the two new flexible lines in the Lençóis Paulista factory (SP). These external audits assess our management of social and environmental topics, including risks and opportunities, and inform action plans for improvement as necessary.

Our operations in Bahia are also audited for Halal certification, providing assurance that our manufacturing process complies with Islamic ethics, moral, and legal standards; and for Kosher certification, providing assurance that our process quality control and safety comply with Orthodox Jewish dietary laws. **GRI 3-3(205)**

We also undergo client audits as part of the due diligence process for verifying controlled wood. Our forestry, industrial, and sales departments receive and assist independent auditors who assess our management practices and procedures related to compliance with controlled wood (CW) standards.

Additionally, the due diligence process is a part of our pulpwood procurement process, with verification of controlled sources of PEFC standard and under which suppliers complete

forms to ensure our pulpwood is responsibly sourced. As part of this process, suppliers complete a due diligence form on compliance with local, national, and international laws, supported by documentation, field inspection and other evidence. The form also evaluates their practices with regard to: environmental conservation and protection; endangered and protected species; the land tenure and land use rights of indigenous peoples, local communities, or other affected stakeholders; health, labor and safety issues; and anti-corruption.

All suppliers of Bracell's operation are evaluated in terms of documentation and depend on compliance to the parameters required by the certification standards and company procedures to retain their supplier status. The findings of this screening may prevent the relevant supplier from being awarded the contract or stop negotiations from proceeding.

Suppliers are monitored by our Contracts Management System and by industrial and forestry certifications. This platform onboards contractual documents, checks legally required documents, and verifies any documents that prove compliance with labor and safety laws. The procedures related to certifications monitor compliance to environmental legislation.





Ethics, compliance and anti-corruption

GRI 3-3 (205)

Our Code of Conduct is aligned with our Mission, Vision and our **T.O.P.I.C.C.** Core Values. The Code of Conduct sets out guidelines for ethical conduct and embodies our commitment to upholding ethical global business standards and daily practices, as well as setting criteria for ethical behaviour and integrity of employees, suppliers, and in our relations with stakeholders.

We are committed to ensuring our production process and activities comply with local, national and international laws, certifications and regulatory standards,

whilst assuring respect for people, the environment and Bracell's voluntary social and environmental commitments.

We are also committed to guaranteeing compliance with RGE Group's Anti-bribery and Anti-Corruption Policy, prepared based on applicable anti-bribery and anti-Corruption laws and Brazilian legislation. **GRI 205-1**

Our Code of Conduct is shared with all new employees shortly after joining us. We also provide annual self-training course to employees in our RGE's Code Conduct to reinforce its guidelines.

In addition, all employees are trained and informed about Bracell's values, commitments and policies. They also attend training on department-specific technical and operational procedures, following a role-specific training matrix as part of Bracell's Integrated Management System (IMS).

Our internal regulations and commitments also extend to our suppliers. During the onboarding and screening process, suppliers are informed of and assume the commitment to know, understand and respect the [Bracell Procurement Code of Ethics \(COPE\)](#).

Control mechanisms to assure social and environmental compliance and mitigate social, environmental and compliance risks

GRI 205-2

Whilst managing supplier contracts, we request and analyze evidence demonstrating that our business partners are complying with the legislations, technical standards and applicable regulations, certifications, as well as whether they observe Human Rights, Labour Rights and Rights of Children and Adolescents, amongst other requirements. Through the Contract Management System labour and safety documents of the suppliers' employees are monitored. Also compliance with environmental legislation is monitored among industrial and forestry certifications. **GRI 205-2**

In addition, we also have a [Complaints Policy](#), focused on internal processes and aimed at Bracell staff. This document sets out fundamental principles and procedures for reporting and investigating concerns.

Mechanisms for seeking advice and raising concerns

GRI 2-26

Bracell Escuta

All internal and external stakeholders have access to the Bracell Escuta channel for reporting misconduct and noncompliance with laws and regulations, our Code of Conduct and company standards. Bracell Escuta can be accessed by e-mail and an 0800 number.

E-mail

bracell_escuta@bracell.com

Bahia and Sergipe

0800-006-6012

São Paulo and Mato Grosso do Sul

0800-033-3384

Contact us

There is also a Contact Us channel to submit questions, suggestions, compliments and complaints. Calls are referred to the areas responsible for addressing each topic. Whistleblowers receive feedback on the handling of each case. Case investigations and resolutions are documented. Contact Us can be accessed by e-mail and an 0800 number.

Bahia and Sergipe

0800-284-4747

faleconosco@bracell.com

São Paulo and Mato Grosso do Sul

0800-709-1490

faleconoscosp@bracell.com



Risk management

GRI 2-13

The Risk Management Program (PGR) sets out the guidelines for managing social, environmental, operational and business risks. The program uses internationally recognized methodologies and covers information management, training, the use of equipment, use of technology, and emergency response.

Consistent with the precautionary principle approach to risk, our management includes measures to protect the environment and prevent adverse impacts on ecosystems in the locations where we operate. Our Sustainability Strategy - Responsible Production, Climate, Biodiversity and Landscapes - includes programs and indicators managed for this purpose, alongside our goal of creating positive environmental impact in the short-, medium- and long-term. **GRI 2-23**



Measures comprising Bracell's risk and impact mitigation plans

Updated social and environmental matters and impacts

Frequently updating social and environmental matters and impacts, including all operational areas. The aim is to identify, prevent and mitigate any and all negative impacts.

Studies identifying social and environmental risks

Assessments conducted to identify and map out social and environmental risks before initiating any new operation.

Product quality control

Quality analysis and control for our products on health, safety and environmental risks.

Monitoring operations

Regularly monitoring impacts from our operations and activities, and implementing immediate mitigation measures focused on minimizing impacts.



Read more at our GRI Disclosures Hub:

- GRI 2-15 [Conflicts of interest](#)
- GRI 2-27 [Compliance with laws and regulations](#)
- GRI 205-1 [Operations assessed for risks related to corruption](#)
- GRI 205-2 [Communication and training on anti-corruption policies and procedures](#)
- GRI 205-3 [Confirmed incidents of corruption and actions taken](#)
- GRI 415-1 [Political contributions](#)



4 People and culture

Valuing, engaging and nurturing people to grow with us are fundamental principles of Bracell.

We are committed to providing a safe, healthy and productive work environment for all employees. This is how we achieve positive results together and guarantee the sustainability of our business and operations.

As part of our ongoing expansion, in 2022 we continued investing in our efforts to attract and retain talent and bolster our organizational culture, a process carried out in accordance with Bracell's new Corporate Attraction and Selection Policy.

We closed 2022 with 6,426 direct employees – 1,779 in Bahia, 4,255 in São Paulo and 392 in Mato Grosso do Sul. 17,867 outsourced personnel work with us. During the year, we initiated a new Trainee Program cycle and trained and selected harvest operators. **GRI 2-7 / 2-8**

See details about our direct employees and contractors in our [Disclosures Hub](#), in disclosures GRI 2-7 and GRI 2-8.

Hiring in local communities

The Talent Harvest program was a resounding success in 2022. We trained harvest operators in partnership with SENAI, with 100% of the course subsidized by Bracell. The program provided training and subsequent recruitment and selection of operators to join our forest operation.

Trainee Program

In 2022, we held our first unified edition of the Program, selecting 45 trainees. They will undergo a 18-month probation period at Bracell during which they will undergo job rotation. They will work in all the Company's main operating departments, being immersed in our production process - from the pulpwood operation to pulp logistics (learn more about our production process on [page 83](#)).

Training and development

GRI 3-3 (404)

We are expanding our operations and continue focusing our efforts on maintaining a team of professionals capable of meeting the challenges of today and the future, in a corporate culture of sharing expertise.

With the involvement of Bracell leadership, in 2022 we compiled a matrix of our employees' expertise to pursue this goal, which is connected to a skills matrix. This delivery is strategic because it connects technical roles to career paths for forest, industrial, pulp transportation and procurement operations.

The careers path will underpin the development of our employees whilst meeting our business and operational requirements.

We also held Lidera Bracell, a global program of RGE with a focus on corporate guidance for people management, with the aim of developing technical and behavioural leadership skills. In 2022, 29 managers of the operations of Bahia and São Paulo participated.

Bracell launches its training and knowledge hub

Launched in 2022, the Bracell Learning Institute was formed as an employee development network. The courses and training contain:

- Strategic content, aligned with business and operational needs
- Technical and operational content such as workplace safety, legal compliance and audits
- Content to bolster Bracell's values, policies and guidelines
- RGE group training
- Content focused on leadership development and management
- Content for the local community, focusing on qualifying professionals to work in our operations.

The new hub combines technology, innovation and welcoming programs for employees. There are six training rooms, a technology laboratory, reading area, 196-seater auditorium, six meeting rooms, a co-working area with a café, as well as a 72-person amphitheater.



Pictured at the launch of the Bracell Learning Institute. From the left to the right, Per Lindblom (RGE Director and Executive Vice President of Bracell), Anderson Tanoto (RGE Managing Director, member of the RGE Executive Management Board and member of the executive committee of Asia Pacific Resources International Limited - APRIL) and Praveen Singhavi (Bracell President).

Our training programs

GRI 404-2

Bracell carries out training programs to bolster the Company's procedures, processes and values.

Pulp production

Acelera Program: operational training for pulp production.

Mill Manager Development: a focus on potential successors in operations positions.

Human Resources

HR academy: a set of specific training sessions for Human Resources teams.

T.O.P.I.C.C. Values

Core values program: aims to continuously enhance our organizational culture.

Leadership

Leadership Journey: focused on technical and functional capabilities and buy-in to our organizational culture.

Future Leaders Program: training leaders for the development of a systemic vision of different areas.





Practical capacity building and continuous improvement: complementary teams

In 2022, Bracell also focused heavily on building the practical capabilities of multidisciplinary teams.

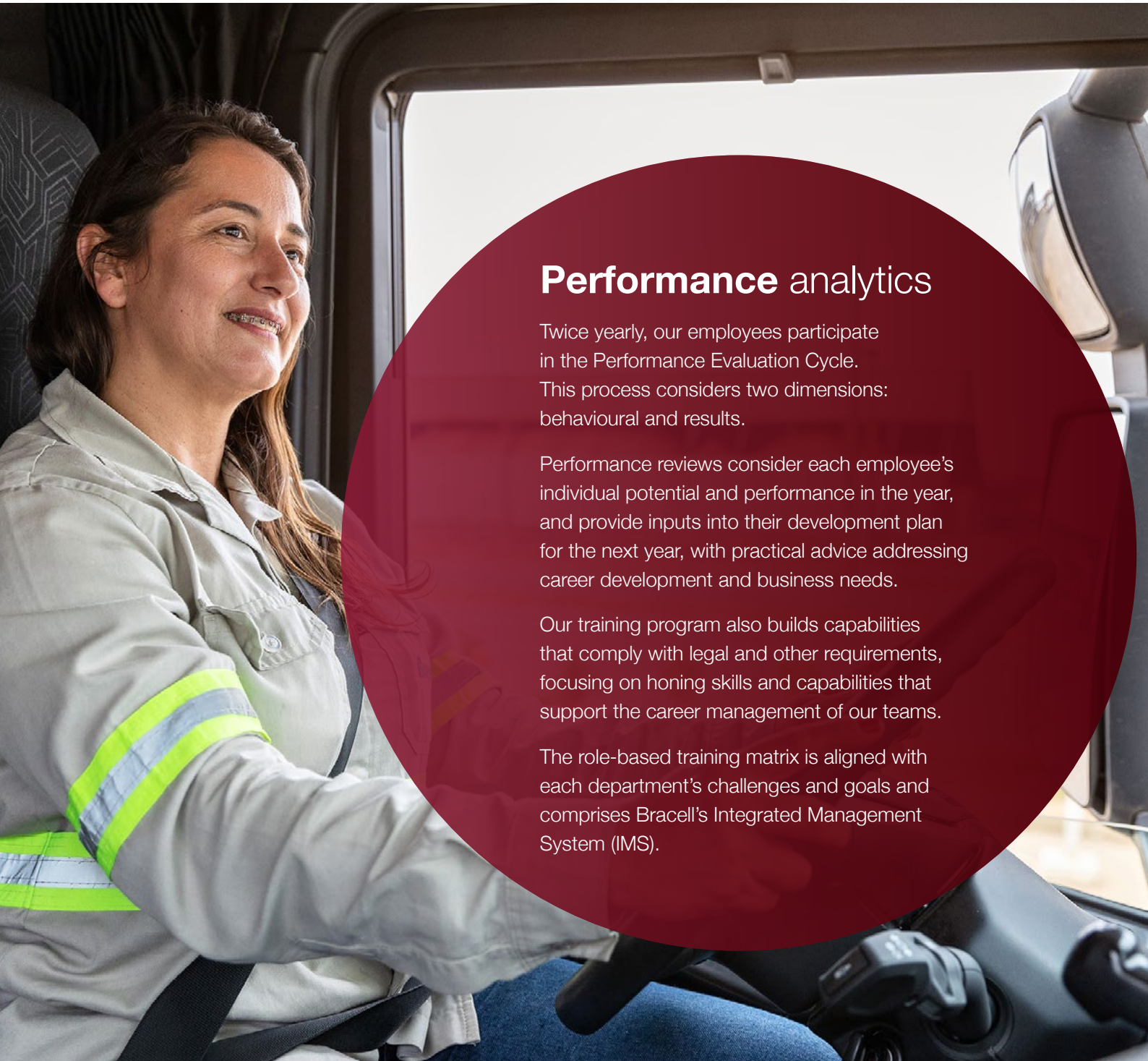
Participating teams carried out projects in order to add quality and efficiency to strategic operations and processes. These projects were assigned priority by our leadership.

There were a total of 21 projects in this format in 2022, spearheaded by Bracell's Business Continuous Improvement

Department (BCID), focused on pulpwood, industrial and logistics operations.

The learning cycles took place in modules, starting with capacity building in the methodology that directed the process improvement, followed by a project implementation period (monitored and controlled) and concluding with the presentation of results to Bracell senior leadership, highlighting the contribution to the operational objectives for the year, including quality and efficiency gains.

Creating value for employees, the business and operations: teams from strategic Bracell departments attend training and learn how to implement practical improvements to pulpwood, industrial and logistics processes.



Performance analytics

Twice yearly, our employees participate in the Performance Evaluation Cycle. This process considers two dimensions: behavioural and results.

Performance reviews consider each employee's individual potential and performance in the year, and provide inputs into their development plan for the next year, with practical advice addressing career development and business needs.

Our training program also builds capabilities that comply with legal and other requirements, focusing on honing skills and capabilities that support the career management of our teams.

The role-based training matrix is aligned with each department's challenges and goals and comprises Bracell's Integrated Management System (IMS).



Read more at our GRI Disclosures Hub:

GRI 404-1 [Average hours of training per year per employee](#)

GRI 404-2 [Transition assistance programs provided to facilitate continued employability and the management of career endings resulting from retirement or termination of employment.](#)

GRI 404-3 [Percentage of employees receiving regular performance and career development reviews](#)

Diversity and inclusion

GRI 3-3 (405)

Bracell's Sustainability Strategy targets diversity and inclusion, in line with the People and Culture pillar. We are signatories to the Women's Empowerment Principles (WEPs) launched by the UN's Global Compact and UN Women, whose guidelines provide advice on promoting gender equality and women's empowerment at the workplace, in the job market and in communities.

We take a zero-tolerance approach to harassment, bullying and violence and take corporate responsibility for protecting human rights, as emphasized in our Code of Conduct and Sustainability Policy. In 2022, there were no reported incidents of discrimination within the Company. **GRI 406-1**

To promote the diversity and inclusion agenda and connect our employees to

our organizational culture, we have a Diversity program in place in Bahia, called *Diversidade em Ação* ("Diversity in Action"), and initiatives in São Paulo and Mato Grosso do Sul.

Closing the gender gap is addressed in regular meetings to increase the number of women in the Company's operational areas and leadership.

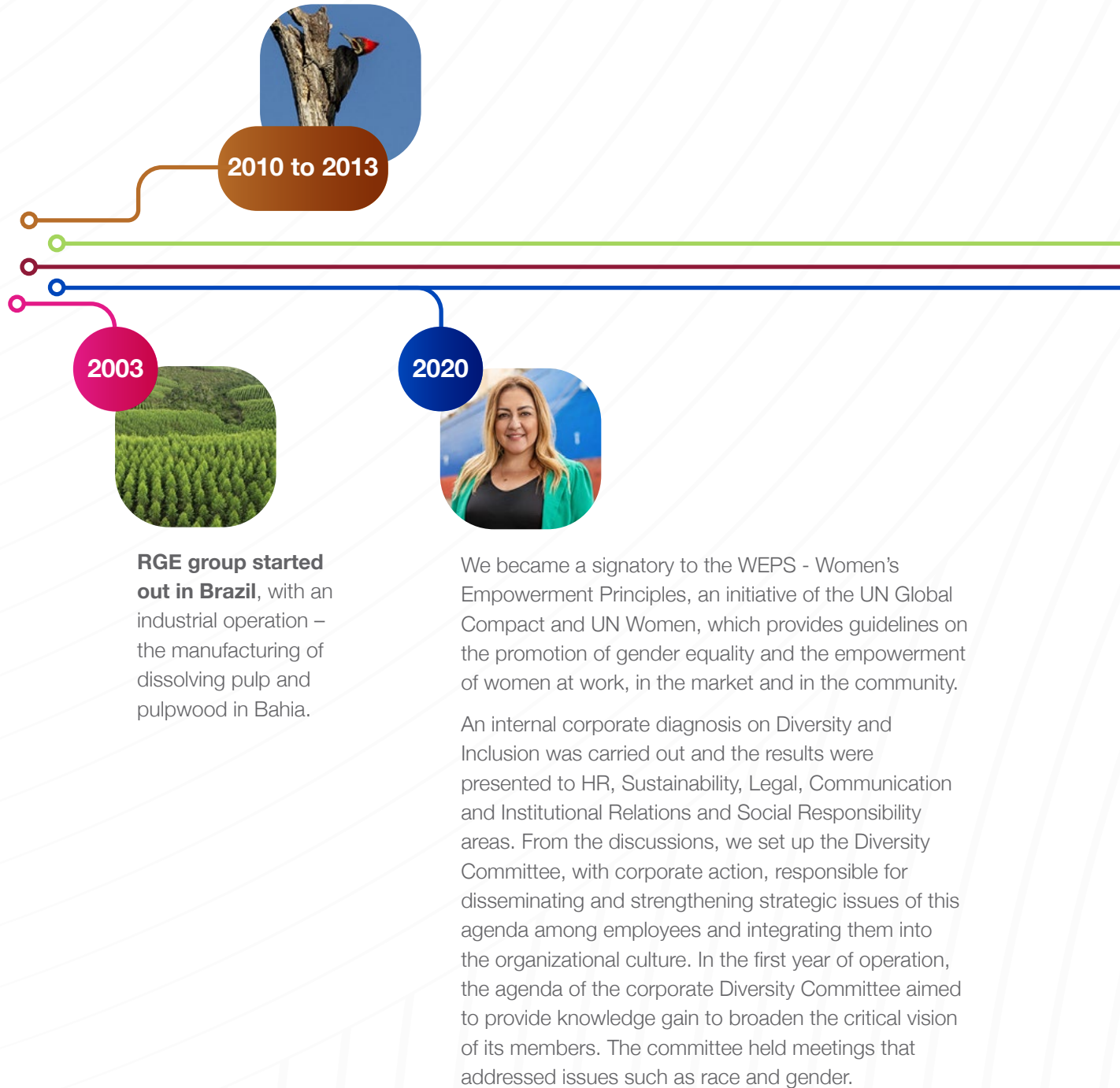
The pulp production and pulpwood sector in general still experience a shortage of female professionals qualified for specific activities, such as the case of forest equipment operators. To address this, we have created women-only operator courses and recruitment and selection processes designed for a female audience.

Women in the forestry sector

In early 2023, Bracell joined *Rede Mulher Florestal* ("Women in Forestry Network"), an independent network of female professionals in the forestry sector, dedicated to fostering discussion around gender equity in forestry.

Diversity and inclusion timeline

The 2012-2013 Sustainability Report, the first prepared in accordance with GRI standards, initiated the monitoring and publication of the number of women in leadership positions and the number of employees by gender. Read more in this [link](#).



We became a signatory to the WEPS - Women's Empowerment Principles, an initiative of the UN Global Compact and UN Women, which provides guidelines on the promotion of gender equality and the empowerment of women at work, in the market and in the community.

An internal corporate diagnosis on Diversity and Inclusion was carried out and the results were presented to HR, Sustainability, Legal, Communication and Institutional Relations and Social Responsibility areas. From the discussions, we set up the Diversity Committee, with corporate action, responsible for disseminating and strengthening strategic issues of this agenda among employees and integrating them into the organizational culture. In the first year of operation, the agenda of the corporate Diversity Committee aimed to provide knowledge gain to broaden the critical vision of its members. The committee held meetings that addressed issues such as race and gender.

An intense internal corporate communication campaign is carried out to raise awareness among employees and third parties on diversity and inclusion.

The ***Diversidade em Ação*** (“Diversity in Action”) program is launched in Bahia and Bracell commits to the goal of increasing the representation of women in forestry and industrial operations by 20% by 2025.

Bahia’s leadership is trained in aspects of diversity. The training was carried out with the support of external consultants.



2021

2022



Recognition for the promotion of racial equality

The Company’s commitment to promote a plural environment and racial equality was awarded with **the Ethnic-Racial Diversity Seal 2020-2021 and Ethical-Racial Diversity Seal 2021-2022**, granted by the Salvador City Hall, through the Municipal Secretariat for Reparation. The certification, which exists since 2007, is granted to organizations committed to strengthening diversity in the workplace.

Bracell holds the Troca de Saberes - Diversity Edition. The Company invited experts on topics such as unconscious bias and the importance of diversity and ethno-racial inclusion in organizations. The leadership of Bahia operations participated in training on diversity and inclusion, held in partnership with the Transcendemos consultancy. We created affinity groups to promote internal changes in organizational culture.

In São Paulo operations, we started planning the Diversity and Inclusion program, in order to launch it in 2023.

Our senior leadership approves the guidelines for the development of long-term socio-environmental goals, which has Diversity and Inclusion as one of its focuses (read more on [page 11](#)).

Closing the gender gap

In Bahia we pledged to increase the share of women in our forestry and mill operations by 20% by 2025.

In São Paulo, our efforts have focused since 2019 on completing the expansion of our site (Project Star) and completing the commissioning of our two new flexible lines at the mill in Lençóis Paulista (SP). Our primary goal in 2021 and 2022 was therefore meeting our immediate demand for workers. Our targets to increase the proportion of women in the workforce are still being devised.

Sustainability Strategy

Bracell's Sustainability Strategy targets diversity and inclusion, in line with the People and Culture pillar. We are signatories to the Women's Empowerment Principles (WEPs) launched by the UN's Global Compact and UN Women, whose guidelines provide advice on promoting gender equality and women's empowerment at the workplace, in the job market and in communities.



Workforce profile

GRI 2-7 / 404-1 / 404-3

6,426 direct employees

1,779 employees in Bahia operations

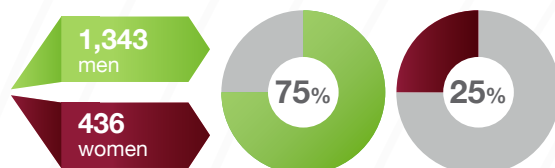
4,255 employees in São Paulo operations

392 employees in Mato Grosso do Sul operations

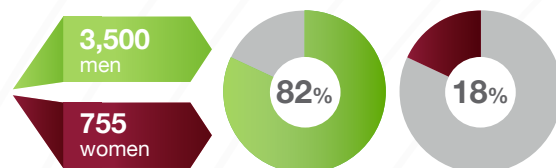


Total workforce profile by state and gender

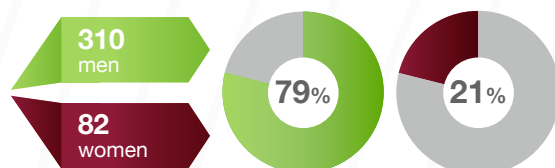
Bahia



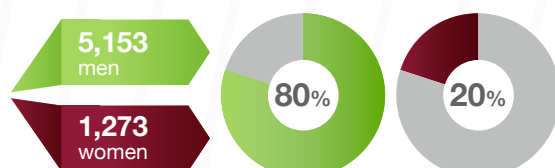
São Paulo



Mato Grosso do Sul

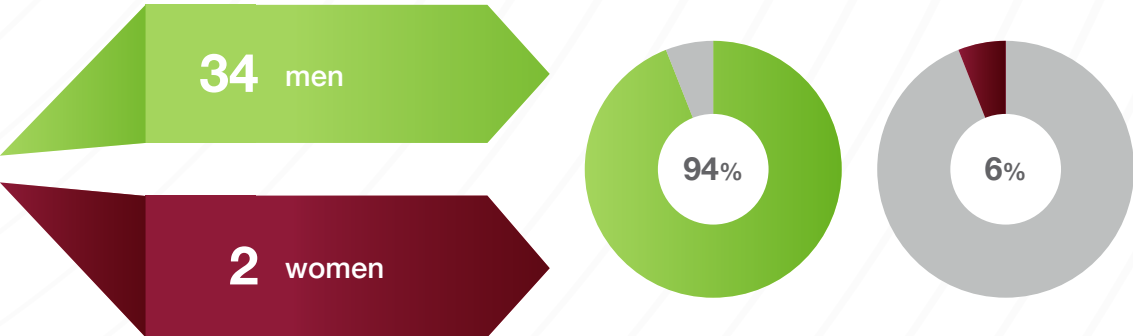


Total workforce profile by gender



Diversity of governance bodies

GRI 405-1

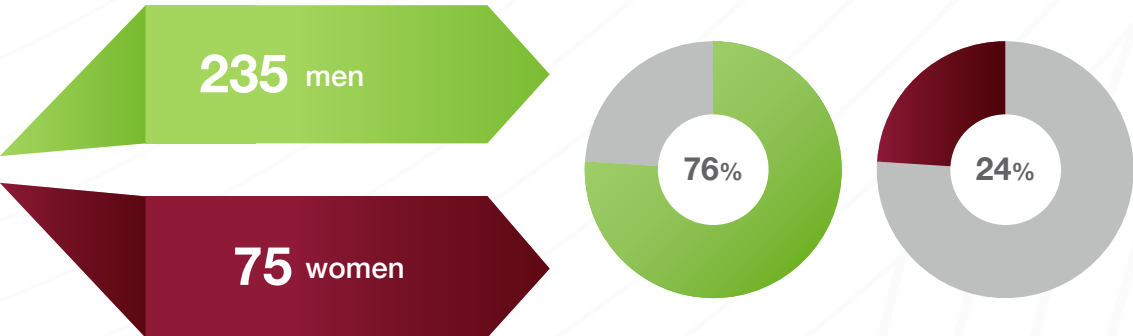


Note 1: considering the position of directors and senior managers.

Note 2: Bracell has also a Steering Committee, comprising members of our senior leadership team, responsible for making strategic decisions, evaluating potential investments, and tracking its social and environmental performance. The governance body consists of 5 men and 1 woman, with the proportion of representativeness of 83.4% of men to 16.6% women in 2022.

Number of men and women in the average leadership

GRI 405-1



Note: managers and coordinators (as) are the considered positions.



Read more at our GRI Disclosures Hub:

- GRI 2-7 [Employees](#)
- GRI 2-8 [Workers who are not employees](#)
- GRI 405-1 [Diversity of governance bodies and employees](#)
- GRI 406-1 [Incidents of discrimination and corrective actions taken](#)

Occupational safety

GRI 3-3 (403)

Ensuring the physical and mental health and safety of our employees and contractors is a priority for Bracell. To achieve this, we track and control risks posed by the activities our people carry out, always acting to limit the occurrence of incidents and accidents. This monitoring produces monthly reports, which are reviewed by our Health and Safety teams.

All areas of our operations have Health and Safety teams, which are responsible for planning and delivering actions that comply with the legislation and mandatory Bracell requirements and guidelines, always with the aim of fostering a safe workplace for our employees.

Our Integrated Occupational Health and Safety Management System follows the Occupational Safety and Medicine Regulatory

Standards required by Brazilian legislation. It complies with the standards ISO 9001, ISO 14001, and Cerflor, and the professionals in charge of this are our own employees, members of the Specialized Occupational Health and Safety Service (SESMT).

Moreover, the Environmental Risk Prevention Program (PGR) and the Occupational Health Surveillance Program (PCMSO) are integrated into the system, specifying standards of conduct and other practical guidelines and procedures for all activities carried out by our direct workers. Our Integrated Policy sets this standard for contractors. **GRI 403-1**

We also have an Emergency Response Plan for incidents in our mills, which operate 24 hours a day around three shifts. We have the Strategic Occupational Safety Plan procedure for pulpwood operations.



Tools and processes we harness to keep our workplace safe

GRI 403-2

- The Risk Management Program creates control and prevention measures for occupational health and safety risks, relying on assessments carried out by a specialized firm that ensures our day-to-day activities are legally compliant.
- We assess all employee functions and activities and then issue a safety hazards report on our operations.
- We strive for the safety of our employees and contractors, and when accidents or incidents do occur, we investigate the root cause to prevent recurrence.
- We continuously develop Occupational Safety Inspection Reports (RIST) to enhance our operations, ensure compliance with occupational safety standards, and bolster our health and safety culture.

Things we do to bolster our occupational health and safety culture

GRI 403-4

Safe Behavior Program

Rolled out in our São Paulo and Bahia mills, this program was created to raise awareness about the importance of safe behavior. We train employees to work as internal auditors, tasked with detecting and eradicating possible risky behaviors, with a view to maximizing our incident and accident prevention practices.

100% Safe Journey

In this program in Bahia, we acknowledge those employees who behave safely at all times and help disseminate the safety culture within our Company. They are awarded bronze, silver or gold buttons.

Toolbox Talks

These talks take place with our staff and contractors before the working day starts. Its objective is to cultivate a continuous exchange and dialog around occupational safety.

Internal Occupational Accident Prevention Week (SIPAT)

At our São Paulo plant, the 2022 SIPAT took on a hybrid format, with in-person activities and the launch of a website to disseminate safety content. In Bahia, SIPAT included the Safety Recognition Program, which rewarded employees who maintained exemplary standards of safe behavior throughout the year.

Health and Safety Campaigns

We disseminate various informative and educational materials to instill the culture of health and safety among our employees and contractors.

Identifying, Reporting, Documenting and Analyzing Events

Our employees and contractors are encouraged to identify, report and document all safety events that occur in our pulpwood operation. We keep a detailed log of these incidents and the action plans carried out to mitigate them. All this information is used in the incident investigation and analysis process.

Inspections

We carry out safety inspections to assess risky behavior and working conditions. We always strive for continuous improvement and to instill a robust work safety culture.

Safety training and engagement

GRI 403-5

All new hires attend safe behavior training as part of their onboarding process subsequent to their recruitment. The training aims to forestall accidents and incidents.

In São Paulo, Bracell provides first-aid training for the forest and mill operation teams, to prepare them to respond to emergencies. Training instructors are members of the health team (doctors, nurses and occupational nursing technicians).

In 2022, Bracell also trained its employees in preventing and fighting forest fires ([learn more on page 112](#)).

Occupational accidents

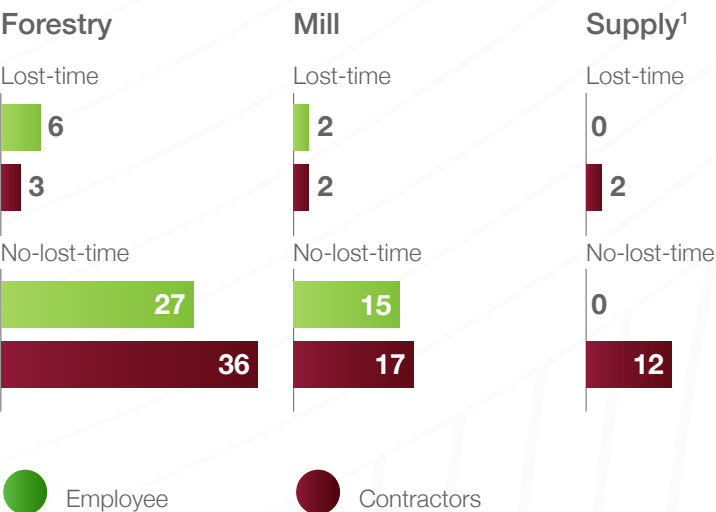
GRI 403-9

In 2022, we suffered two lost-time injuries in Bahia, one of which was a Bracell employee and another one with a third party. There were two no-lost-time injuries, one in the pulpwood operation and another in a mill. Compared to 2021, our operations in Bahia saw 40% fewer accidents with material damages but no lost time.

In São Paulo, the number of lost-time injuries decreased as a result of intensified communication campaigns that reinforced the importance of safe behavior among employees and contractors. The Line 1 operation at the Lençóis Paulista mill, which has been running since Bracell’s foundation in 2019, reached the landmark of two years without lost-time injuries.

Number of injuries by operation

São Paulo



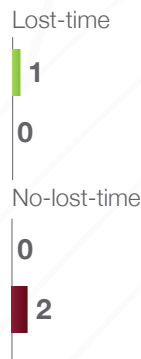
¹ Data includes employees and third parties from pulp transportation operations.

Bahia

Forestry



Mill



Mato Grosso do Sul

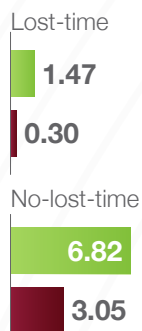
Forestry



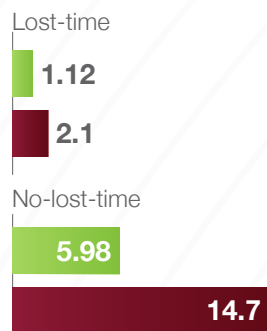
Injury rates by operation

São Paulo

Forestry^{1,2}



Mill



Supply

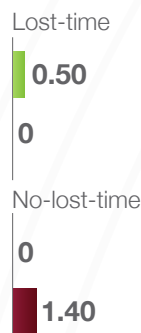


Bahia

Forestry³



Mill⁴



Mato Grosso do Sul

Forestry⁵



There were no fatalities in 2022.



- 1 2022 data for own employees consider 4,104,465.27 hours worked.
- 2 2022 data for third parties consider 13,513,5,990.00 hours worked.
- 3 The rates were calculated based on 1,000,000 hours worked and there was no exclusion of any worker in the GRI disclosure report.
- 4 The rates were calculated based on 1,000,000 hours worked and there was no exclusion of any worker in the GRI disclosure report.
- 5 In Mato Grosso do Sul, Bracell has only forestry operations and has been operating in the region since 2022. In 2022, the rates of the operations of São Paulo and Mato Grosso do Sul were computed together.

Health and well-being

GRI 403-3 / 403-6

Our Health teams monitor all issues related to the health and well-being of our employees and contractors, working to prevent diseases and other issues that may be linked to the activities they carry out at work.

The Bracell medical department includes a team composed of an Occupational Physician, Occupational Nurse and Occupational Health Technicians. They are part of the Specialized Occupational Health and Safety Engineering Services and Specialized Rural Occupational Health and Safety Service (SESMT/SESTR).

Our occupational health service identifies, treats and follows up on the health of our operational employees.



How we take care of our employees' health

Under our Occupational Health Surveillance Program (PCMSO), our employees undergo occupational medical exams according to the risks posed by their professional activities.

We also provide outpatient care with medical and nursing evaluations and refer cases to specialists and the recommended exams in the accredited health insurance network.

Throughout the year, we carry out campaigns to prevent respiratory diseases, dengue fever, sexually transmitted infections, breast and prostate cancer, and flu vaccinations.

Aiming at the well-being of the community, the health and well-being team annually promotes the blood donation campaign, benefiting the region's hemonuclei.

Our employees can also participate in the Challenge Bracell program, which encourages healthy eating habits and regular exercise.

We provide health and dental insurance to all employees and their dependents, with country-wide coverage. In addition, Bracell also has arrangements with pharmacy chains, teaching institutions, as well as entities such as Serviço Social da Indústria (SESI) and others that offer sports and leisure activities.



Read more at our GRI Disclosures Hub:

- GRI 403-1 [**Occupational health and safety management system**](#)
- GRI 403-2 [**Hazard identification, risk assessment, and incident investigation**](#)
- GRI 403-3 [**Occupational health services**](#)
- GRI 403-4 [**Worker participation, consultation, and communication on occupational health and safety**](#)
- GRI 403-5 [**Worker training on occupational health and safety**](#)
- GRI 403-6 [**Promotion of worker health**](#)
- GRI 403-7 [**Prevention and mitigation of occupational health and safety impacts directly linked by business relationships**](#)
- GRI 403-8 [**Workers covered by an occupational health and safety management system**](#)
- GRI 403-9 [**Work-related injuries**](#)
- GRI 403-10 [**Work-related ill health**](#)



5 Social inclusion

Bracell Social

GRI 203-1

Bracell Social is our social investment platform. Through the program, we carry out projects that drive the development of local communities, connecting social inclusion and sustainability so that people can hone their individual skills and have access to opportunities for a better life.

This program reflects our commitment to operating in harmony with neighboring communities, respecting their habits,

customs and traditions, building an environment that fosters mutual trust. This requires us not to rely on preconceived concepts when dealing with communities. Developing this initiative requires the direct involvement of beneficiaries, the government, and other local partners. In this way, we increase the possibility that these initiatives will deliver social transformation, and encourage the sustainable development of each program.

Bracell Social is supported by three pillars - the three Es:



Education

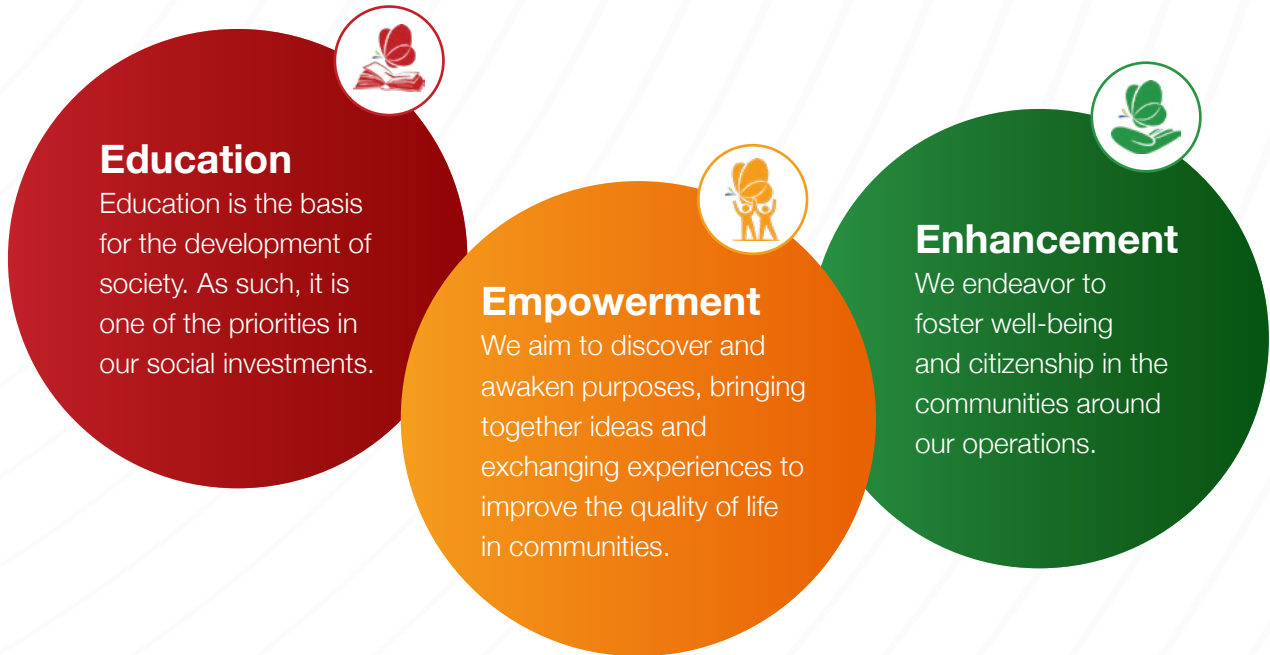


Empowerment



Enhancement

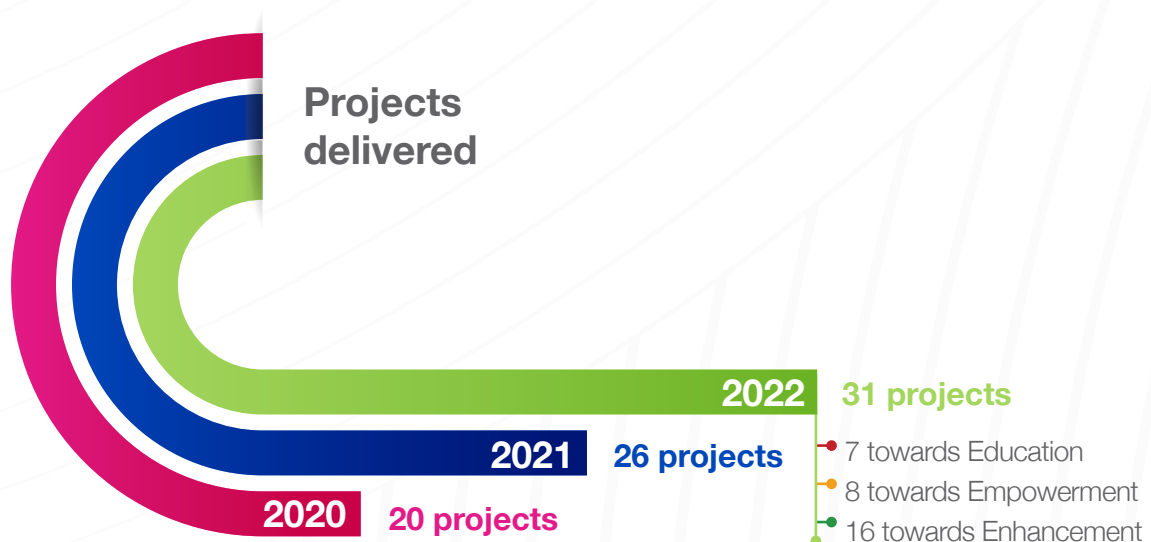
31 social projects took place in 2022, receiving over R\$ 4.4 million, benefiting more than a 121,000 people.



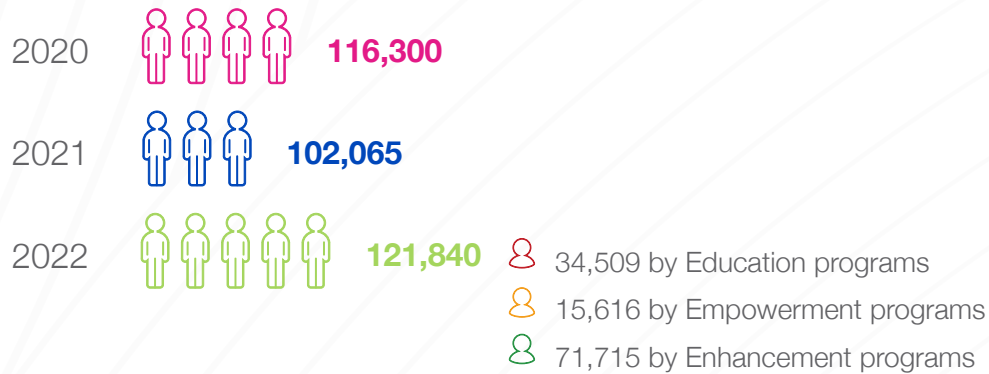
Bracell Social in the last three years

In the last three years we have invested R\$ 11,245,107.58 in programs geared towards Education, Empowerment and Enhancement, in Bahia and São Paulo. From 2020 to 2022, 340,205 people were benefited with Bracell Social programs.

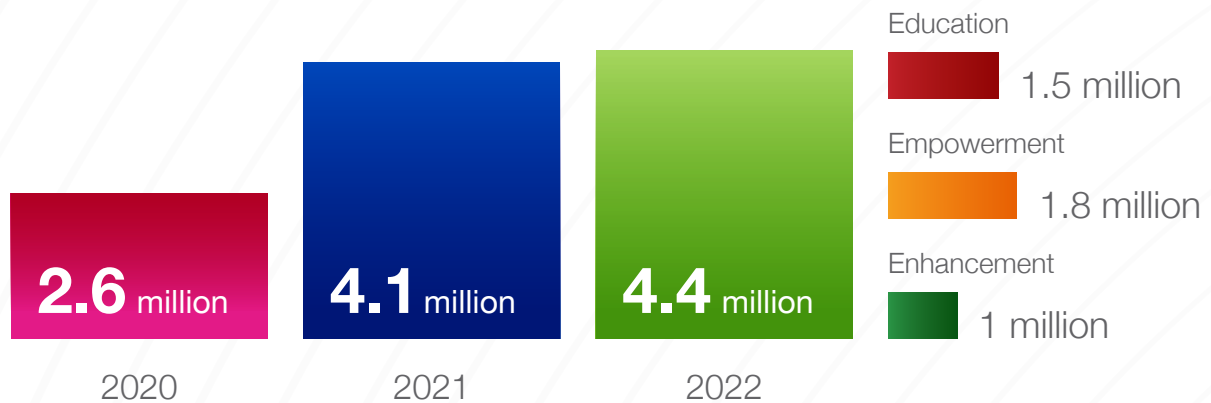
Results



People benefited



Investment (R\$)



Read more at our GRI Disclosures Hub:

GRI 203-1 [Infrastructure investments and services supported](#)

GRI 203-2 [Significant indirect economic impacts](#)

On the following pages see the projects we sponsored in 2022 and their main outcomes. The full list can be seen in Bracell's Disclosures Hub.

Programs by Bracell Social pillar

(3 Es - Education, Empowerment and Enhancement)



Education

Educação Continuada (“Continuing Education” - Bahia)

This focuses on the qualification of public system managers and educators, helping strengthen the Municipal Continued Education Policy - a permanent process to improve the knowledge and practices required for educators to perform their activities.

In 2022, the project was expanded to Santo Amaro, a municipality that we engaged because of the expansion of our operations, totaling 9 participating municipalities for the year.

The were 276 participating schools, 1,801 education professionals impacted, 1,743 people participated in project activities and 21,181 students benefited.

Geração + Ambiente (“Generation + Environment” - Bahia)

The project began in July 2021 to train people to be eco-agents (environmental facilitators) in their communities. The eco-agents attend training for work on social and environmental projects aligned with the UN’s 2030 Agenda and Sustainable Development Goals.

In 2022, we expanded the scope to 245 people in the municipalities of Santo Amaro da Purificação and São Sebastião do Passé.

Among the initiatives developed are the implementation of sustainable social technologies such as banana pits, rainwater harvesting systems and medicinal gardens, among others.

LideraJovem (Youth Leadership) Institute (São Paulo)

We are one of the sponsors of the LideraJovem Institute, a civil society organization that helps adolescents and youth in and around Lençóis Paulista, SP develop life projects and hone their leadership and collaboration skills to prepare them for the job market and the broader challenges of life.

In 2022 six projects took place that directly benefited 3,893 young people and indirectly benefited 116,947 individuals.

The institution also trains adult facilitators in active methodologies to work with young people.



Empowerment

Cultura.Rec (BA)

The Cultura.Rec project is Bracell's first cultural initiative in Bahia state. It was created to help strengthen and make more dynamic the cultural movements and manifestations in the so-called Recôncavo Baiano, mobilizing and strengthening youth and local cultural associations to work together.

In 2022, Cultura.Rec 2.0 continued the process of strengthening groups, collectives and movements led by young people from São Sebastião do Passé and Santo Amaro, encouraging the re-edition of art and culture initiatives aimed at revealing to the territories the cultural potential of the local youth. The project also prioritized the construction of a free public arena with public institutions and other civil society organizations that develop the cultural policies of the municipalities.

Dona Della ("Her Own Boss" - São Paulo)

This program aims to boost women's financial autonomy and female entrepreneurship, assisting women who do not yet have a business but wish to be entrepreneurs, as well as those who lead their own business and seek support to develop their ventures.

In 2022, a diagnosis was conducted with the aim of mapping women entrepreneurs in priority municipalities in which we have forestry operations, with a view to implementing the second edition in 2023.

Fomento a negócios de impacto

("Fostering impactful businesses" - Bahia)

We support ten productive groups by providing technical advice, enabling them to participate in calls for tenders and to consolidate agreements to expand their businesses. The program also provides training in production and product shipment, regularization and certification advice.

One of the highlights of the year was the participation of the Green Pharmacy initiative, from the Cangula community in Alagoinhas, and the Fábrica de Fardamentos initiative, at ExpoFavela 2022 in São Paulo, an event that brought together social investors from around the country. The Green Pharmacy's Soap Center also opened, dedicated to the production and sale of handmade and medicinal soaps. In 2022, the income generated by the productive groups exceeded R\$ 140,000.00, in addition to the R\$ 250,000.00 in funding for the Green Pharmacy Project through a Tender conducted by UNDP Brazil and the Ministry of the Environment.

Mulheres Produtoras (“Women Farmers” - Bahia)

The project’s main activity is training women and young people in organic hydroponic farming, producing more productive foods and increased profitability.

In 2022, five bioponic systems were implemented in communities of Santo Amaro and São Sebastião do Passé.

Also a partnership was formed with the Federal University of Recôncavo Baiano for research on bioponic techniques.

Nós do Campo (“In the Field” - Bahia and São Paulo)

A program to encourage family farming with activities that foster food security, job creation, income, and stronger networks.

Around 417 people were positively impacted in 2022 in Bahia and 106 in São Paulo.

Also, we closed a partnership with the Federal Institute of Bahia (IFBA) in Alagoinhas, to deploy two agroforestry systems.

Polinizadores (“Beekeeping Project” - Bahia and São Paulo)

In partnership with beekeepers and honey producers in the areas where Bracell operates in the states of Bahia and São Paulo, the program aims to contribute to the development of bee keeping and promote the multiple use of eucalyptus forests. The Company authorizes beekeepers to set up hives in suitable forestry areas. The bees use the flowering Eucalyptus and native plants to make honey and other beekeeping products.

In 2022, in Bahia, 67¹ beekeepers participated, generating an income of R\$ 1,061,960.00.

In 2022, in Sao Paulo, 114 beekeepers participated, generating an income of R\$ 75,000.00.

¹ The number of beekeepers refers to the period from September (beginning of the current project cycle) to December 2022. This project cycle continues until June 2023.



Enhancement

Circuito Digital de Artes Bracell Alic ("Bracell Alic Digital Arts Circuit" - São Paulo)

Working with the Lençóis Paulista city government and Associação Lençoense de Incentivo à Cultura [The Lençóis Paulista Association to Incentive Culture], this initiative takes entertainment and culture to city residents, with digital cultural programs and live transmissions via the Adélia Lorenzetti Municipal Theater social networks.

In 2022, **25 plays** were performed at Adélia Lorenzetti Municipal Theater in Lençóis Paulista, benefiting more than **15,000 people** with cultural attractions.

This year, the project included online and in-person attractions.

Enhancement highlights

In 2022, **71,715 people** were benefited from its projects.



Development programs for the local community

GRI 203-2

Part of the Enhancement pillar, in 2022, we resumed community service actions under the Increased Citizenship program. The highlight was the special edition called Increased Citizenship SOS Rainfall, which took food parcels and personal care products to populations blighted by the torrential rains in Bahia in early December. In previous years, the program was focused on helping minimize the adverse impacts of the Covid-19 pandemic on communities in Bahia, located in our operating region. In 2022, we also made donations to these local communities, including food parcels.

Results of Increased Citizenship program

1,004 food parcels

737 personal care kits

13,716 people benefited



Founder's Day

In 2022, the annual Founder's Day campaign mobilized employees through various activities including donations of food, toys, shoes and school kits, in addition to interpersonal interactions through volunteer activities. The last activity was offered for the first time since the beginning of the pandemic. Significant results in collections and beneficiaries were achieved thanks to the solidarity, dedication and passion of our collaborators.

Results of Increased Citizenship program

129 mobilizers working in different areas of Bahia, São Paulo and Mato Grosso do Sul states;

1,048 children sponsored through activities at the units in Bahia, São Paulo and Mato Grosso do Sul;

4,900 volunteers;

2,202 kg of food collected

14 municipalities benefited

11 institutions served

R\$ 22,000.00 raised

Local community engagement

GRI 3-3(413)

Frequent engagement in transparent dialogue with local communities is a priority for Bracell. To achieve this, we conduct various studies to identify the main impacts of our operations on these communities, as well as to understand their needs and concerns. Based on this analysis, we define which actions and channels will be implemented to convey updated information, receive requests or complaints, as well as to mitigate and minimize possible negative impacts and maximize the positive ones.

We maintain this routine for all stakeholders who are or may be impacted by the company's activities. The focus is on preventing the risks to which these stakeholders are exposed.

Our initiatives related to local community relations aim to:

- Enable communities and neighbors to learn about the forest operations that will be carried out near them and the possible risks and positive and negative impacts of these operations;
- Strengthen the bond between communities, neighbors and the company;

- Improve communications between communities, neighbors and the company;
- Strengthen local actions and demands;
- Identify, prevent and minimize potential impacts caused by our operations on these communities and our neighbors;
- Reduce risks associated with possible problems in the community that may affect operations;
- Respond to questions and concerns regarding company activities.

All of Bracell's operations entail relationship actions, impact monitoring, and community development programs aimed at the local community. These initiatives are carried out continuously, before during and after our activities.

For example, before starting to operate in a given region, we conduct a social and economic assessment in neighboring communities within a 500 meter radius, for harvesting and forestry; 100 meters from unpaved transport routes; and three kilometers for pest control activities. **GRI 413-2**



Relations and approximation initiatives with local communities

GRI 413-1

Committees

In Bahia, we formed committees to create positive relationships with local community associations and to maintain closer ties with the leaders in each region. One of our missions is to contribute to public agencies such as Civil Police, Military Police, Public Prosecutions Department and the Judiciary, among others.

Community Census

Our routine includes visiting families and communities surrounding our operations to get to know them better and map out the areas. We evaluate issues related to infrastructure, impacts on traditional communities or Areas of High Social and/or Cultural Conservation Value, as well as surveying the main needs identified.

Impact Zoning Map

Our planting, preservation and forest operation areas in general are mapped, and the surrounding communities are divided according to the degree of influence exerted by our projects. Traditional communities, such as maroon settlements in Bahia state, are duly identified on the map.

Stakeholder map and matrix

We collect the information collected in our community census to define our core stakeholders, i.e., individuals or groups who are directly or indirectly affected by our activities or who may have an interest in a Company project and/or the ability to shape its outcome either positively or negatively. This information is catalogued to determine the stakeholder's profile (government, civil society, NGO, etc.). The 2022 matrix of Bracell's stakeholders in Bahia was larger than in 2021. 1,824 material stakeholders were identified, with 96.38% being favorable (867) and neutral (891).

Meeting communities

We hold initial and operational meetings to keep our stakeholders informed about forest management activities (such as planting, harvesting, transportation, and other initiatives that may impact communities). We also answer questions, log complaints and identify the main demands of the communities. In these meetings, participants receive informative materials about Bracell, along with the company's communication channels.

Operational dialogue in São Paulo and Mato Grosso do Sul

Operational dialogues and the monitoring of operational impacts in the areas of influence of Bracell's forestry operations are conducted directly with the neighbors and communities close to the eucalyptus plantations, following the company's internal Community Relations procedure. People are consulted individually.

Production and distribution of informative material

Dissemination of the Fale Conosco channel (0800-709-1490 in São Paulo and Mato Grosso do Sul and 0800 284 4747 in Bahia), through the operational dialogue kit (folders with information on the forestry cycle, videos with information on eucalyptus cultivation, campaigns against forest fires and public summary of forest management, in addition to key chains and baseball caps).

Interacting with indigenous communities

GRI 411-1

In São Paulo, the Araribá Indigenous community in Avaí (SP) is the only indigenous community located near our forestry operations area - within a radius of three kilometres. The community comprises four villages (Tereguá, Ekeruá, Kopenoti and Nimuendaju) with a population of approximately 600 people.

No cases of violations involving rights of indigenous peoples were registered by the company. There are no indigenous communities close to our mills or eucalyptus forests in Bahia and Mato Grosso do Sul states.

We have a forest fire prevention policy and made significant investments in this area in 2022 (read more on [page 112](#)). To ensure the safety of the Araribá indigenous community and prevent potential impacts from possible fires, we donated 40 firefighting backpacks and 40 fire extinguishers.

We also provided training to form a fire brigade for 28 indigenous people, teaching them how to use the equipment, administer first aid and tackle fire outbreaks.

The action was carried out with the support of the National Foundation for Indigenous Peoples (FUNAI) and the Municipal Government of Avaí.



Read more at our GRI Disclosures Hub:

- GRI 411-1 [Incidents of violations involving rights of indigenous peoples](#)
- GRI 3-3 (413) [Material topics Local community engagement](#)
- GRI 413-1 [Operations with local community engagement, impact assessments, and development programs](#)
- GRI 413-2 [Operations with significant actual or potential negative impacts on local communities](#)



6 Responsible production

We carry out our operations in compliance with environmental regulations, Human Rights, Labor Rights, the Rights of Children and Adolescents, as well as regional, national, and international legislation applicable to our activities.

We also follow Technical and Regulatory Standards, as well as international protocols on sustainability management issues. **GRI 2-27**



Standards, certifications and pledges that underpin our operations



IFC

We are audited against International Finance Corporation Standards (IFC), the global development institution focused on the private sector in developing countries.



Custody chain and controlled wood (CW)

We are audited by customers, who conduct controlled wood (CW) due diligence processes on our operations, meaning they assess our social and environmental management practices and control of eucalyptus wood, from harvesting to transportation to the mill.



Certifications

Our operations are certified to ISO 9001:2015, ISO 14001:2015, Cerflor/PEFC, Halal and Kosher.

Assessment and monitoring of wood suppliers

We also evaluate and monitor our wood suppliers for their compliance with local, national, and international legislation; protection of nature and the environment; treatment of protected and endangered species; compliance with occupational health and safety standards; anti-corruption; and other criteria.

Global Compact Principles

We are signatories of the UN Global Compact and committed to the Ten Universal Principles of the UN Global Compact, which cover Human Rights, Labor, Environment and Anti-Corruption issues.

The UN Women's Empowerment Principles

We are signatories of the UN Women's Empowerment Principles (WEPs).

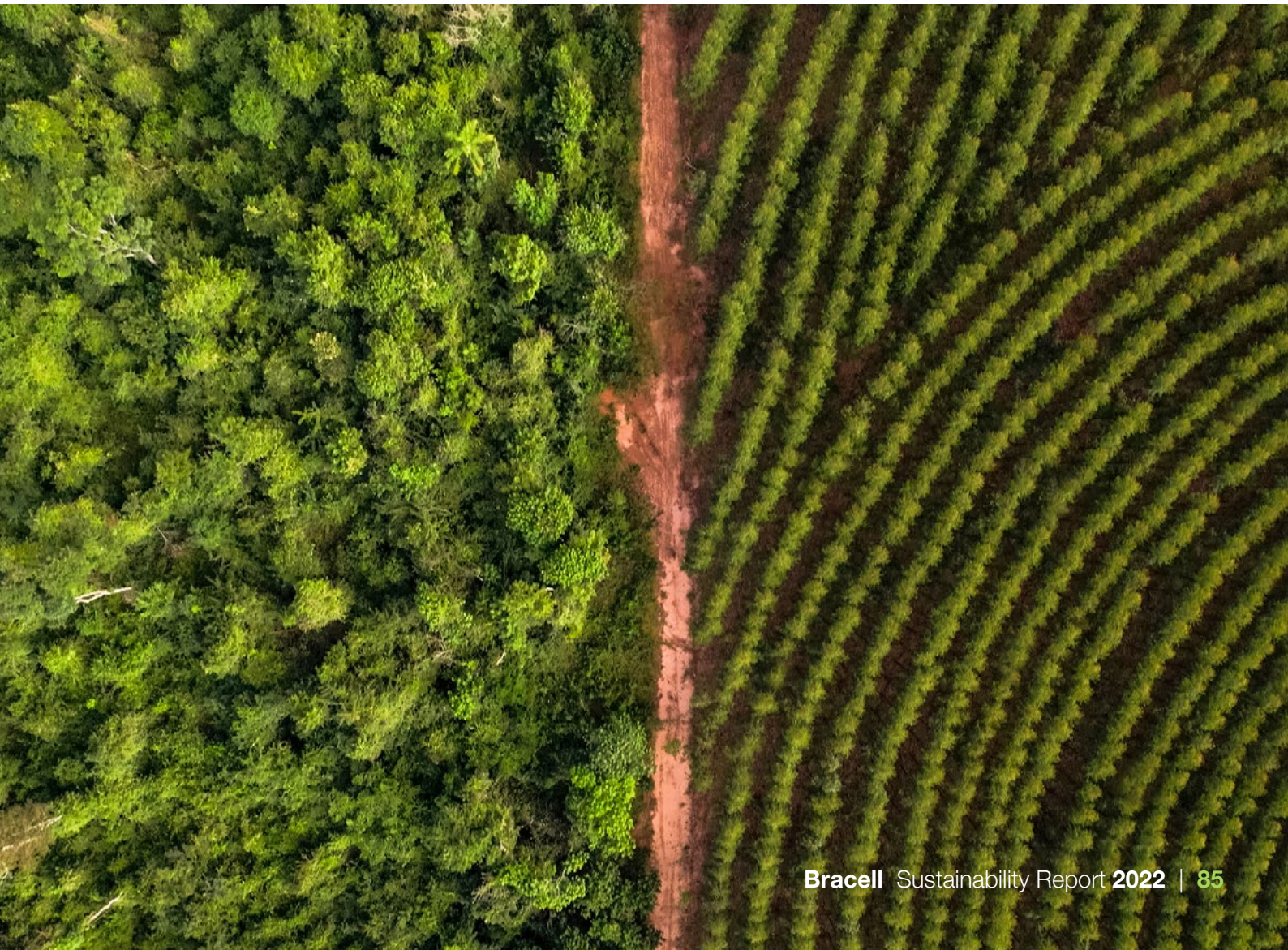
Bracell seeks to augment the positive effects of its operations and activities while mitigating or minimizing negative impacts (read more about our processes to repair negative impacts in the **GRI Disclosures Hub**). GRI 2-25



Our forestry practices

Our mills produce Kraft and dissolving pulp from eucalyptus fiber. The wood we use in this process is 100% sourced from reforestation and has Cerflor/PEFC certification. In Bahia, our eucalyptus forests are also ISO 14001:2015 certified.

In addition to cultivating eucalyptus, we also purchase traceable wood, meaning we control and monitor the wood chain (in accordance with social and environmental laws and standards) from harvesting on the supplier's eucalyptus farm to transportation to our mill. We also carry out the **Cultivate Eucalyptus** development program, which offers specialized technical assistance to forestry producers and partners.



Bracell's eucalyptus cultivation practices

Cultivation of eucalyptus in forest mosaics

We cultivate eucalyptus in forest mosaics, alternating eucalyptus plantations with areas of native forest (Atlantic Forest, Cerrado and Caatinga), supporting biodiversity, and ecosystem and landscape services.

Maintaining post-harvest residue and concentration of organic matter in the soil

We carry out maintenance post-harvest residue (bark, branches and leaves). This allows us to use fewer chemical fertilizers, helping increase organic matter in the soil.

Natural pest control

We use integrated pest and disease management (IPDM). We seek to maintain environmental balance by using natural pest control methods including genetic resistance and the use of natural predators. Chemical pest control is used as a last resort when other methods, either individually or in combination, prove ineffective.

Protecting conservation areas and biodiversity

We have a strict no-deforestation policy and a [commitment to promoting biodiversity](#), lead by Brazilian Business Council for Sustainable Development (CEBDS). We do not operate in conservation areas (permanent preservation areas or legal reserves). Also, we do not operate on peatlands.

Wood sourced from reforestation

Our eucalyptus timber comes from reforestation. We only grow eucalyptus timber on land already used for other agricultural activities, i.e., areas on which other crops have already been planted.



Investment in pulpwood technology and quality

Through the e-Forest project, we continuously invest in technologies that contribute to making our pulpwood operation even more efficient. Our Forestry Operations Development function and the Forestry Quality Management Program (PGQS) add quality and safety to our management practices.

Properties and forestry services are registered in our Forest Management System (SGF), a platform that monitors and manages these data and operations.

We also implement frequent improvements in the portfolio of eucalyptus clones, in nurseries, in forestry practices, harvesting, wood transportation and road maintenance, among other important areas.

In 2022, we ended the year with eucalyptus plantations in 36 cities in Bahia (North Coast and Agreste region), 113 in the Midwest of São Paulo, 9 in Mato Grosso do Sul and 3 in Sergipe.

Monitoring forestry areas

Our pulpwood operation is geo-referenced. The geo-processing system helps to improve eucalyptus plantation yields and harvesting productivity. This platform identifies and records in its database all land use information from Bracell's pulpwood operation areas. These areas are plotted on maps that identify:

- Eucalyptus plantations
- Permanent Conservation Areas (APP), Legal Reserves (RL) and Conservation Areas (native vegetation in addition to APP and RL)
- Areas with water resources
- Areas of great cultural and social importance.

Eucalyptus plantations are monitored using satellites and drones to gather information about the terrain, potential deforestation, fire outbreaks and plantation performance. The monitoring system detects the geometry of the properties, performs detailed 3D inventories which reveal possible plantation gaps and threats to tree growth, while also mapping areas that are hard to access and identifying potential risks and impacts, allowing our teams to act immediately to prevent or mitigate them.

Pulp production

We have two mills in Brazil, one located in the Camaçari industrial district (Bahia) and another in the Lençóis Paulista industrial district (São Paulo). The São Paulo mill was built using the most optimal technologies, according to the “Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and

Board, 2015”¹. The two new flexible lines operating in Lençóis Paulista boast the most innovative technology in the industry and have been in operation since September 2021. We are also self-sufficient in energy generation at both the São Paulo and Bahia mills (read more in the Climate chapter, on [page 116](#)). **GRI 2-24**

We have eucalyptus plantations in Bahia, São Paulo, Mato Grosso do Sul and Sergipe. Our mills have the capacity to produce 3 million metric tons of Kraft pulp and 2 million metric tons of dissolving pulp a year.

In 2022, employees in Bahia and Sao Paulo attended a training course for internal auditors on ISO 9001:2015 and 14001:2015 standards. The course was administered by a specialized firm and guided by the Integrated Management System (IMS) team. The goal was to train professionals to conduct internal audits focussing on continuous improvement and to prepare operations for the recertification process. This multidisciplinary team will undergo further development training together with the IMS team to monitor and conduct audits on industrial processes.

¹ Bracell commissioned a study, carried out by an independent third party, which found the Lençóis Paulista mill was compliant with the leading and best available technologies in the market, according to the “Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board, 2015”, adopted by the European Commission. The review compared its BAT findings with the mill’s future pulp lines when in normal operation.

Research and Development (R&D)

We are committed to continuously improving our operations with quality and excellence, which is why we invest in technological development. We have infrastructure and dedicated forestry and industrial R&D teams in São Paulo and Bahia. Learn about the areas our studies and research target below.



Forestry Research and Development

We operate on three major fronts to ensure the sustainable supply of wood in the medium and long term and, consequently, the continuity of the business:



Classic genetic enhancement

Continuous development of new eucalyptus clones, superior in productivity, resistance to pests and diseases, and wood quality. We also conduct research with alternative species and studies to increase the efficiency of cloning (quality, quantity and cost of seedlings).



Forestry management

Continuous improvement of climate zoning processes, conservation, soil preparation and fertilization, and sustainable control of pests, diseases and weeds.



Forestry extension

Technical assistance and technology transfer for forestry operations.



Industrial Research and Development

The Industrial R&D practice is committed to adding positive value to our products, based on the benefits and differentials of the pulp we manufacture (read more about our products and their applications on [page 29](#)).

For this reason, we hold frequent technical meetings for exchanging samples and testing methods. This process has allowed us to develop a variety of personalized product classes in cooperation with our customers.

In 2022, we conducted studies to produce Lyocell, a cellulose fiber renowned for its sustainability and used in fabric manufacturing.

Throughout the year, Bracell and RGE Group's R&D teams maintained frequent contact to intensify the analysis for dissolving pulp production processes, with a focus on improving the quality and efficiency of the manufacturing process.

Another highlight of the year is the consolidation of Bracell as one of the largest producers of Kraft pulp in the world. The stability of the properties of our pulp has positioned us as a reference in quality and good performance in paper machines of different types, such as printing and writing papers, papers for sanitary purposes, packaging and special papers.

We conducted industrial research and studies with the aim of:



Expanding the productivity and quality of our products, in a way that meets the needs of our customers.



Identifying the best use of laboratory and industrial technologies available on the market.



Evaluate the quality of the wood of plantations that will supply the factory and potential impacts on the productive process and on the quality of the products.



Optimizing pulp production and identifying new product opportunities.



Support forestry R&D in the evaluation of wood quality associated with the development of new clones and forestry practices.



To improve production processes, providing gains in competitiveness through solutions focused on quality, productivity and cost.

Human rights

We reinforced the commitment in our regulations to respect and uphold human rights. We are signatories to the United Nations' Global Compact and annually report on the progress made in our management practices and results related to the 10 Universal Principles of the Global Compact, which include:

- 1 Principle 1:**
 Businesses should support and respect the protection of internationally proclaimed Human Rights
- 2 Principle 2:**
 Businesses should make sure that they are not complicit in human rights abuses
- 4 Principle 4:**
 The elimination of all forms of forced and compulsory labor
- 5 Principle 5:**
 The effective abolition of child labor; and
- 6 Principle 6:**
 The elimination of discrimination in respect of employment and occupation.

Bracell's COP (Communication on Progress) to UN Global Compact can be viewed [here](#).



In addition, our legal department participates in internal forums to provide guidance or identify potential non-conformities. The team partners with the internal audit department, identifying root causes in complaints and providing legal guidance on how to handle cases.

We also have control mechanisms in place to mitigate the risk of child, forced or compulsory labor in our value chain whilst assuring compliance with Human Rights, the Rights of Children and Adolescents and Labour Rights.

Suppliers are approved and hired in accordance with our Code of Conduct and Procurement Code of Ethics³, with the requirement that they commit to complying with the guidelines established in these documents (read more about our supplier management on [page 95](#)).

The Company's Security department is committed to respecting and fostering human rights in our operations and throughout Bracell's value chain. This commitment covers the conduct and relationships with stakeholders such as contractors, suppliers and neighboring communities. Contractors hired to work in security must maintain a valid Brazilian Security Guard License, which means their training courses are up to date. In order to maintain operational excellence, these agents undergo systematic training in pulpwood and mill areas. All professionals (100%) undergo Human Rights training every two years in accordance with Brazilian legislation. **GRI 410-1**

In 2022, there were no reports of social or environmental impacts involving suppliers of inputs and materials, and engaged in forestry operations. Similarly, no such reports were made in 2019, 2020 and 2021. **GRI 408-1 / 409-1**

³ Our Code of Conduct and Procurement Code of Ethics can be seen here
<https://www.bracell.com/institucional/governanca-e-certificacoes>.

Supplier management

GRI 3-3, 204-1, 308-1, 308-2, 414-1, 414-2

We drive economic activity in our geographies and source local suppliers to provide products and services for our pulpwood, industrial, logistics (timber and pulp) and administrative operations.

We select 100% of our suppliers in accordance with local, national and international laws, technical and regulatory standards and certifications that address social and environmental management and processes. This rule applies to new suppliers procured in 2022.

All Bracell suppliers (100%) undergo a qualification process to assess their conditions, which include presenting documents proving compliance with environmental legislation, compliance with

environmental and operational licenses, as well as those required by the supplier's economic activity.

These factors are monitored throughout the management of supplier contracts, and suppliers are periodically asked to update their documentation.

All suppliers are screened and must meet a minimum score to retain their supplier status. The findings from screening may prevent the relevant supplier from being awarded the contract or the negotiations from proceeding.

Through the Contract Management System we monitor the delivery of documents of the suppliers' employees required by law.

In the screening process, suppliers learn about and commit to respect Bracell's **Code of Conduct** and **Procurement Code of Ethics**, which reinforce our commitment to Human Rights and Sustainability.



Read more at our GRI Disclosures Hub:

GRI 414-1 [New suppliers that were screened using social criteria](#)

GRI 414-2 [Negative social impacts in the supply chain and actions taken](#)

Water and effluents

GRI 3-3 (303)

Bracell's Sustainability Policy and Water Monitoring Program set out our water and effluent management guidelines.

The water we consume in our operations comes from our own deep wells or from surface water bodies in rivers and streams. We use these water bodies under the authorization of government agencies and meet all the criteria defined by the respective environmental agencies that issue the licenses.

In pulpwood operations, we use water in the production of seedlings, plantation

irrigations and road construction and maintenance. We use water on firefighting and when the application of pesticides is needed.

In the pulp manufacturing process, we have water consumption targets established according to the water efficiency baseline considered for the production of dissolving pulp. These targets consider the water consumed in the production process and in office areas, with limits established based on equipment capability and ensuring compliance with water withdrawal volumes authorized by the responsible agency.



Actions for responsible water use



Preservation of water resources



Recovery of springs and environmental preservation

In partnership with the government and local community members, we carry out actions such as planting native species, engaging the entire community in rehabilitating riparian vegetation, and awareness-raising and educational activities.



Recovering native forest

We recover native forest in Legal Reserves, Permanent Preservation Areas (APPs), and other conservation areas.



Weather monitoring

We have specific infrastructure and protocols for monitoring climate and water availability in the regions where we operate, including at the basin level. Annually we update our climate zoning in order to identify the areas with the highest water availability for eucalyptus planting.



Participation in river basin committees

We follow and make contributions to discussions on drainage basins.





Treatment of effluents



Treatment of industrial wastewater

In Bahia, the factory's wastewater is directed to the internal treatment system, which includes a sedimentation process. The organic effluent is sent to CETREL, a company located in the Camaçari Industrial District (BA), responsible for secondary biological treatment, in which more than 97% of organic load is removed. After secondary treatment, the treated wastewater is then released into the ocean through an outlet.



Tertiary effluent treatment

We are the first company in São Paulo state to carry out tertiary effluent treatment. In our site in São Paulo, approximately 95% of rainwater harvested from the Tietê River is returned as effluent treated over three stages.





Water intensity⁵ in our Bahia operations is currently 5.29 m³ of water per metric ton of pulp produced.



Water intensity in our São Paulo operations is 1.1 m³ of water per metric ton of pulp produced.



Regarding water withdraw, the total volume captured by Bracell, considering mill and forestry operations, was 71,659,843.85 m³.

5 Difference between water withdrawn and treated effluent discharged



Read more at our GRI Disclosures Hub:

GRI 303-1 [Interactions with water as a shared resource](#)

GRI 303-2 [Management of water discharge related impacts](#)

GRI 303-3 [Water withdrawal](#)

GRI 303-4 [Water discharge](#)

GRI 303-5 [Water consumption](#)



Waste Material

GRI 3-3 (306)

We strictly comply with Brazil's National Waste Management Policy (PNRS) through our Waste Management Plan (PGRS). Our goal is to reduce the generation of waste materials and maximize recycling and/or reuse. We also have a Waste to Value Policy through which we work to reduce, reuse and recycle waste.

In pulpwood operations, we use post-harvest residue to enhance the concentration of organic matter in the soil. This allows the areas where new eucalyptus seedlings will be planted to maintain healthy soil nutrition indicators (read more about our forest management practices on [page 85](#)).

In the pulp production process, non-hazardous waste is generated from the following activities:



Chipping

Preparing and chipping eucalyptus logs produces wood waste such as bark, fines, and short logs, which have no use in pulp production *per se*.



Brown pulp screening

For the production of pulp, the pulp is mechanically screened after cooking the woodchips, separating out sand and wood knots.



Chemical recovery

DREGS are generated during the causticizing process, in the filtration of the green liquor, and GRITS are generated during the production of white liquor, after the green liquor reacts with burnt lime. Primary sludge is generated in the Effluent Treatment process, which is extracted from the Settler.



Hazardous waste is also produced by the following activities:



Lubrication workshop

Used oil from industrial equipment is fully collected for shipment to a specialized company for treatment.



Medical waste

Includes waste materials generated by medical care administered to mill employees, sent for specific treatment and disposal carried out by a specialized company.



Waste segregation

All office areas generate several types of standard waste, such as plastics, paper, metal, wood, and organic materials, which are internally segregated for recycling.

Employee awareness raising and training initiatives help to avoid improper waste segregation.

The selective collection indicator is one of the KPIs monitored by the Integrated Management System (IMS), periodically disclosed to employees throughout the year for performance monitoring.



Read more at our GRI Disclosures Hub:

GRI 306-1 [Waste generation and significant waste-related impacts](#)

GRI 306-2 [Management of significant waste-related impacts](#)

GRI 306-3 [Waste generated](#)

GRI 306-4 [Waste diverted from disposal](#)

GRI 306-5 [Waste directed to disposal](#)

Logistics

Bracell's pulp logistics is multimodal. We deliver our products to customers in Brazil and abroad by road, rail, and sea, in ships and containers. Using multiple means of shipping reduces costs while increasing efficiency and safety, generating a lower environmental impact by emitting a considerably smaller volume of greenhouse gases (GHGs).

To ensure flow and safety, our Logistics Center monitors the entire operation on a 24/7 basis. From this Center we can

monitor processes such as pulp loading at the mill, road and rail transport, and port operations. In addition, 100% of our own trucks are equipped with fatigue monitoring devices. We maintain various safety and risk management processes with the aim of ensuring and maintaining driver and cargo safety.

Focusing on products, we carry out several initiatives to control transport quality and continuously improve our operation.

Our operations in practice

São Paulo



Part of the production from the Lençóis Paulista (SP) mill is transported domestically by truck.



For export, the pulp is transported by truck to the railroad terminal in Pederneiras, from where it then travels by train to the Port of Santos. The truck fleet is 100% owned by the Company. In rail transport, the wagons belong to Bracell, and the locomotives belong to the rail operator that operates under concession.



Bracell has three terminals at the Port of Santos, two of which are managed by the company and one operated by a contractor.



The pulp is then loaded onto ships for export. The largest volume is transported by break bulk ships (vessels prepared for pulp transportation). The remainder is transported in containers.

Bahia



The pulp is trucked by a haulage firm to the Port of Salvador.



Bracell is the single largest user of cargo services at the Port of Salvador.



The pulp is then loaded onto ships for export. Approximately 30% of the product is shipped by vessel and 70% is loaded into containers.

Our performance in 2022



We set a record in the volume of pulp transported in São Paulo, a consequence of the increase in production at our Lençóis Paulista site.



Stage I of the Bracell Port Terminal was delivered, including the administrative office and the first stage of the warehouse.



Bracell will operate at one of the terminals at the Port of Santos for 25 years. We are also building our own pulp shipment terminal on the Macuco public quay line. The new facilities are expected to be ready by June 2023. At Port of Santos, we have installed an operations simulator that is used for recruitment, selection and training of ship operators and crane operators.



In our Bahia operations, we beat a new production record and increased the volume of sales of specialties by 30% compared to the previous year. In this way, we ensured to serve our customers in Asia, the United States, Europe and Brazil, also as a result of the robustness and speed of our logistics operations.



We will incorporate electric forklifts to our operation that use renewable energy generated at the Lençóis Paulista plant (SP). In January 2023, we rented an electric truck for testing, an unprecedented initiative in this type of operation with heavy vehicles (trucks over 40 tons). The estimate is that we will avoid the emission of 132 thousand kilograms of CO₂eq per year.

Our forestry logistics

In a year that saw increased pulp production, our forest logistics operations also grew in order to keep up with the demand of our mills. We expanded our truck fleet, which today represents 25% of the total fleet of 400 vehicles in our operations, responsible for the transport of 40% of the volume of wood that supplies the Lençóis Paulista (SP) mill.

Our logistics centre operates 24 hours a day for flow control and operational safety. All of the vehicles in our own fleet have fatigue cameras, with monitoring of any deviation of behaviour and fatigue.

We are also structuring our skills development programs to train our own drivers in loading, harvesting and wood yard operations, among others. The outsourced companies that make up our fleet also provide training to their employees.

We also purchased wood from the state of Alagoas, to meet our industrial production requirements.

We inaugurated an 8,800 m² workshop, equipped with the latest automotive maintenance technology. Through our Maintenance Planning and Control System (PCM), combined with the reliability department, we strengthened our capacity in this area, reducing costs and gaining productivity and quality.



Biodiversity and landscapes

GRI 3-3

Forests are essential to our business

because we produce pulp from eucalyptus fiber and they are important to the planet because of their biodiversity.

That's why we have conservation practices and programs, starting with planting in forest mosaics, meaning our eucalyptus plantations are located between areas of native vegetation from the Caatinga, Cerrado and Atlantic Forest biomes.

We accordingly strive for the conservation and/or recovery of forest areas and fauna and flora species, preventing deforestation and nurturing biodiversity in our geographies (read more about our forestry practices in Responsible Production on [page 85](#)).

Impact Management

We aim to augment the positive effects of our operations and activities while mitigating and/or minimizing negative impacts. To achieve this, we:

- Maintain an updated survey of environmental issues and impacts, including all operational areas
- Identify and assess environmental impacts before commencing operations
- Execute strategic and agile actions to prevent and/or mitigate potential impacts from our activities and operations
- Evaluate our products in terms of environmental risks.



Environmental Monitoring Program

Our Environmental Monitoring Program follows practices and recommendations adopted by researchers and complies with forest management certifications. Through monitoring, we enrich our knowledge of the biodiversity in our geographies. For example, we gather information on species present in those areas and identify the level of preservation therein.

Our monitoring also aims to identify endemic (animal or plant species that occur only in a particular area or geographic region), rare, threatened or endangered species.

At the same time, we work to protect High Conservation Value (HCV) areas. We thereby protect the environmental and cultural value of these areas while working to prevent and/or minimize potential impacts from our pulpwood operations (read more about our forestry practices in Responsible Production on [page 85](#)). We also signed a partnership with the São Paulo Forestry Foundation to sponsor conservation actions in seven Conservation Units, totalling 66,000 hectares. The Forest Foundation is part of the Secretariat of Environment, Infrastructure and Logistics that manages the conservation units in the state of São Paulo.

One-for-One Commitment

In the first quarter of 2022, we launched our One-for-One Commitment, in which we pledged to conserve one hectare of native forests for every hectare of eucalyptus plantations. These protected areas will prioritize native Atlantic Forest, Cerrado and Caatinga vegetation in the three states where we operate: São Paulo, Mato Grosso do Sul and Bahia. This target should be achieved by the end of 2025.

If the Company's eucalyptus plantations grow after 2025, the conserved areas will also be expanded proportionally, thereby sustaining our One-for-One Commitment.

The commitment will expand our conservation area, boosting the protection and promotion of biodiversity and ecosystem services.

By 2022, considering the scope of the One-for-One Commitment, we closed the year with a total of 82% of conserved areas. That is 0.82 ha of conserved area for each planted hectare. Throughout 2022, we continued our meetings with public sector authorities to present our commitment and its benefits for biodiversity conservation and its benefits for the states and the country.

Floresta Sempre Viva (“Evergreen Forest”)

Committed to the sustainable development of its geographies, Bracell understands that protecting the environment and biodiversity is not only an ethical issue, but also the core of its commitment to its relationship with society and essential for business sustainability.

Evergreen Forest was thus created to bring the essence of the forest to society, often so distant from those who live in more urbanized regions, and that was what the project gave the public in 2022.

Originating from a book of the same name, the sensory exhibition Evergreen Forest had more than 30 panels using augmented reality materials, photos, videos, aromas, and sounds of the fauna, flora and watercourses documented in the Bracell environmental conservation areas on the north coast of Bahia.

The full exhibition took place at the Bahia Shopping mall, one of the busiest areas in the state capital, at e-Agro, an innovation, agribusiness technology and business fair, and at the Bahia Book Biennial 2022, the main literature and culture event in the Northeast.

In addition, Evergreen Forest launched a new website (<https://florestasempreviva.com.br/>) and used multiple channels to disseminate informative materials. The objective was to document Bracell’s efforts and commitment to environmental protection, to strengthen partnerships - especially with the government - and to present plain and simple information about the planted forest business and its impacts on the environment.

Olho no Bicho (Eye on the Animal)

We ran the Olho no Bicho program, encouraging pulpwood teams to record and identify the species they encounter in their daily activities. These records have helped us increase our knowledge and understand the habits of the animals that inhabit our forests.



Commitment to promoting biodiversity

In 2022, Bracell signed up to TNFD Brazil's Action for Nature Platform, an initiative launched by the Brazilian Business Council for Sustainable Development (CEBDS), an organization representing WBCSD in Brazil, and led by over 100 large companies. The CEBDS initiative parallels the WBCSD's platform of the same name, which was created to encourage companies to play a leadership role in protecting and managing ecosystems vital to their operations.

The TNFD Brazil - Nature Action Platform aims to drive accountability and real change

in the perception and management of natural resources in the regions on which these companies depend and impact. This will be done by setting science-based targets and sharing guidance for positive and consistent action in aid of nature.

In addition to actively contributing to the biodiversity agenda, we also disseminate our biodiversity conservation goals and action plan as part of the Brazilian Business Commitment to Biodiversity, another CEBDS initiative. These goals are as follows:

- 1 Have Biodiversity as a pillar of our Sustainability Strategy
- 2 Manage risks and prevent biodiversity impacts
- 3 Promote biodiversity in the supply chain
- 4 Carry out R&D projects in biodiversity conservation
- 5 Monitor fauna and flora
- 6 Disseminate biodiversity data
- 7 Disseminate biodiversity knowledge
- 8 Have a biodiversity conservation and recovery plan
- 9 Conduct biodiversity promotion initiatives in partnership with stakeholders.

Read more
[in this link.](#)

How we conserve and preserve biodiversity

Mutual Cooperation Agreement on Biodiversity

We signed an agreement with the Bahia State Environment Department (Sema) for actions to protect biodiversity in areas of Atlantic Forest in the state, such as the Subaé Canyons and the Subaúma river basin.

Sponsorship with the Forest Foundation

Our partnership with the Forest Foundation, subordinated to the São Paulo State Environmental Office, aims to support actions to protect 66,000 hectares of native forests, including crucial areas of the Atlantic Forest and São Paulo Cerrado.

Joining the Friend of the Atlantic Forest program

This is an initiative of the National Council of the Atlantic Forest Biosphere Reserve (RBMA). It awarded us a seal that "identifies organizations that contribute to the conservation and sustainable use" of this biome. The recognition takes into account our actions and support for RBMA initiatives, which is linked to UNESCO's Man and the Biosphere Program.

Atlantic Rainforest Restoration Pact

We joined this movement, which aims to restore 15 million hectares by 2050 in the Atlantic Forest biome.

Partnership with the SOS Mata Atlântica NGO

Through this partnership, we committed to actions aimed at restoring 30 hectares of forest in Permanent Preservation Areas and Legal Reserves. This way we will contribute to forming ecological corridors, fostering and preserving biodiversity, as well as improving water quality.

Workshop on Ecosystem Services

In 2022, our employees attended a workshop on Ecosystem Services, conducted by an external specialized consultancy firm. We used this to conduct a preliminary assessment of ecosystem services that are most important to the Company, evaluating positive and negative impacts. Four ecosystem services were prioritized: climate change regulation, water quality, pollination, and biodiversity.

Prevention of forest fires

We invest in technologies, have a 24-hour monitoring center and train our firefighters to preserve the environment and prevent forest fires.

We have a practice for preventing and fighting forest fires with the goal of preserving the environment, the well-being of local communities, and creating positive environmental value for the planet.

Our forest fires prevention and firefighting teams are comprised of our own employees. They participated in training programs throughout the year to combat forest fires. The training involved:



Strategic actions



Use of equipment



Defensive driving of vehicles adapted to combat fire outbreaks



Use of a helicopter to support firefighting



Best practices for interacting with the local community.

Strategically, and in line with our values, we hired the teams locally, so our firefighters live in the towns where our forest bases are located. In periods of drought, our brigades teams support the forestry activities, environment and quality, a synergy that contributes to greater care with forests and for the reduction of operating costs.

We also deployed an action plan to improve operational efficiency, allowing teams to act preventively or quickly in cases of fire outbreaks. As a result, in our forestry areas in São Paulo there was a 97% reduction in fire incidence compared to 2021.

In 2022, we signed a Technical Cooperation Agreement with the State of Bahia, through the Secretary of the Environment (SEMA) and with the intervention of the Institute of the Environment and Water Resources (INEMA), to plan and execute actions to prevent and reduce forest fires. Also in 2022, in Bahia operations, we recorded the lowest rate of fires since 2011, as a result of the ability of the forest fire prevention team to act quickly when identifying fire signs and the direct involvement of local communities, mainly through the registration of occurrences by the number 0800 284 4747.



In 2022, we carried out the following actions to prevent and combat forest fires:



We created fire risk maps, identifying their main causes, including causes related to weather conditions, such as low rainfall.



We installed control towers with high-resolution cameras that cover 90% of our planted forests and conservation areas in a radius of between 15km and 20km.



We have a Monitoring Center that receives and processes the collected data 24 hours a day, seven days a week, so that we can swiftly roll out our action plans when necessary.



We deployed itinerant teams that operate aboard 4x4 trucks equipped to fight fires.



We provided dedicated firefighting trucks.



We provided a helicopter for support.



We provided drones to assist in operation planning.



We have an integrated monitoring center that operates 24 hours a day to identify forest fire outbreaks.



In the event of fire outbreaks, this impressive array of structures allows teams to quickly arrive at the scene to get to work.

Friends of the Forest

Our prevention actions include the Friends of the Forest Program that distributes kits to local communities to provide important information about preventing forest fires and to give a platform to the channel for reporting fire outbreaks and other situations that may represent a fire risk.

Under the Program, we also give educational lectures, train community members and government agency officials in charge of conservation areas.

Bracell closed 2022 with a significant reduction in the total areas affected by forest fires compared to previous years, considering

operational data from the states of São Paulo and Bahia.

The total affected areas have been reducing over the years. In 2022, more than 1,625 outbreaks of fires were registered. In Bahia, there were 573 fire outbreaks registered in eucalyptus plantation areas and 536 in neighboring areas where firefighters acted in partnership to fight the fire. In São Paulo, there were 516 occurrences, of which 468 were in neighboring areas and 48 in forest areas. Of these, the municipalities of Bauru, Botucatu and Agudos recorded the highest concentrations of fire outbreaks.



Firefighting training in conservation areas

As part of the One-for-One Program, Bracell administered firefighting training at the Botanical Garden, which is part of the Bauru Ecological Station (EEc) in São Paulo state. Participants included staff from the Botanical Garden and the Zoo (both run by the Municipal Environment Office - SEMMA), and Civil Defense, as well as firefighters from the São Paulo Forestry Foundation, one of Bracell's partner organizations in the One-for-One Program, and the fire department.

Through the One-for-One Program, Bracell built firebreaks (a natural barrier against fires) in the conservation units EEc Barreiro Rico (Anhembi), EEc Sebastião Aleixo e Jardim Botânico (Bauru), EEc Caetus (Gália) e EEc Santa Bárbara (Águas de Santa Bárbara), all in São Paulo state (read more about our One-for-One Commitment on [page 108](#)).

We also conducted firefighting training in these units and delivered handheld equipment used by the brigades. With the São Paulo Forestry Foundation, Bracell also carries out actions to monitor fauna and flora and control invasive species in two state parks, Nascentes do Paranapanema and Carlos Botelho.

Bracell also proposed a project for a suspension bridge for primates to cross roads without risk of being run over and to avoid isolation between areas. Studies and recommendations were also made for the control of invasive species impact on local biodiversity. We also carry out monitoring of the fauna, with the use of recorders and trap cameras, contributing to the identification of species and monitoring of environmental quality indicators in protected areas.



Read more at our GRI Disclosures Hub:

- GRI 304-1 [**Operational sites owned, leased or managed in or adjacent to protected areas and areas of high biodiversity value outside protected areas**](#)
- GRI 304-2 [**Significant impacts of activities, products, and services on biodiversity**](#)
- GRI 304-3 [**Habitats protected or restored**](#)
- GRI 304-4 [**IUCN Red List species and national conservation list species with habitats in areas affected by the organization's operations**](#)



8 Climate

GRI 3-3

Our operations strive to positively impact the climate.

Aligned with the Paris Agreement, we have adopted measures aimed at helping limit the global average temperature increase to within 2°C compared to pre-industrial levels. We also invest in initiatives that endeavor to limit this increase to 1.5°C compared to pre-industrial levels.

We develop operational solutions based on the circular bioeconomy. Our operations pursue the efficient use of water and energy, monitor the quality of our effluents and sub-drainage basins and conduct climate zoning studies evaluating indicators such as rainfall, with the aim of hosting our eucalyptus

plantations in regions with higher rainfall levels. We also have policies and procedures to preserve and foster ecosystem biodiversity in our geographies. These are vital topics, intimately connected to the Climate agenda, and are priorities for Bracell (see more in the Responsible Production, Biodiversity and Landscapes sections on [pages 82 and 106](#) respectively).

Climate is one of the pillars of our Sustainability Strategy. Our materiality study consulted strategic stakeholders and identified the following topics as priorities:



Climate change

Planning, policies and initiatives to mitigate emissions, establishing low-carbon production and adapting to a warmer planet.



Energy efficiency

Efficient use of energy, prioritizing clean (renewable) sources.

The practices presented in the next page address these priorities.

Our mills are energy self-sufficient

The steam that powers the turbo generators for energy production is produced by the recovery boiler. This process is used at both our Bahia and our São Paulo mills.

We occasionally use electricity from the national grid during plant shutdowns for maintenance for example, in our forest areas and at our nurseries. Other fuels are consumed in energy generators in field operations.

At the São Paulo site, we have the Internal Energy Conservation Committee (CICE), that works to improve energy efficiency in our milling processes.

In 2022, energy consumption totaled 7,290,122.60 GJ, with 456,500.52 GJ consisting of purchased energy. During the year, our energy generation totaled 10,159,338.27 GJ, and 3,212,967.94 GJ was sold.



Renewable energy generation and trading

We invest in technologies to prioritize the use of renewable energy in our operations.

The two new flexible lines at the Lençóis Paulista (SP) site were built using the best technologies on the market and boast the most innovative solutions in the sector, according to a study conducted by an independent third party. This study had as its reference the document “Best Available Techniques (BAT) Reference Document for the Production of Pulp, Paper and Board, 2015”, adopted by the European Commission (see more on [page 89](#)).

Our two lines are powered by on-site energy. Biomass-fueled boilers use eucalyptus waste and other substances from the dissolving pulp production process, including black liquor, to generate renewable electricity.

Bracell received the approval from the National Electric System Operator (ONS) and the National Electricity Regulatory Agency (Aneel) on December 31, 2021 to commence the commercial operation of its thermoelectric plant (440kV substation), with an installed capacity of 409,307MW, which generates clean, 100% renewable energy through turbo generators (TGs).

The energy generated is sufficient to serve the mill’s needs, and the surplus of between 150MW to 180MW is sold through the national grid. This green, high-quality electricity can supply power to 750,000 homes or around 3 million people.

The Bahia site also generates energy from renewable sources such as wood components and black liquor generated in the production of dissolving pulp. The energy generated powers the mill, and any surplus is sold. 3,212,967.94 GJ was sold in 2022.

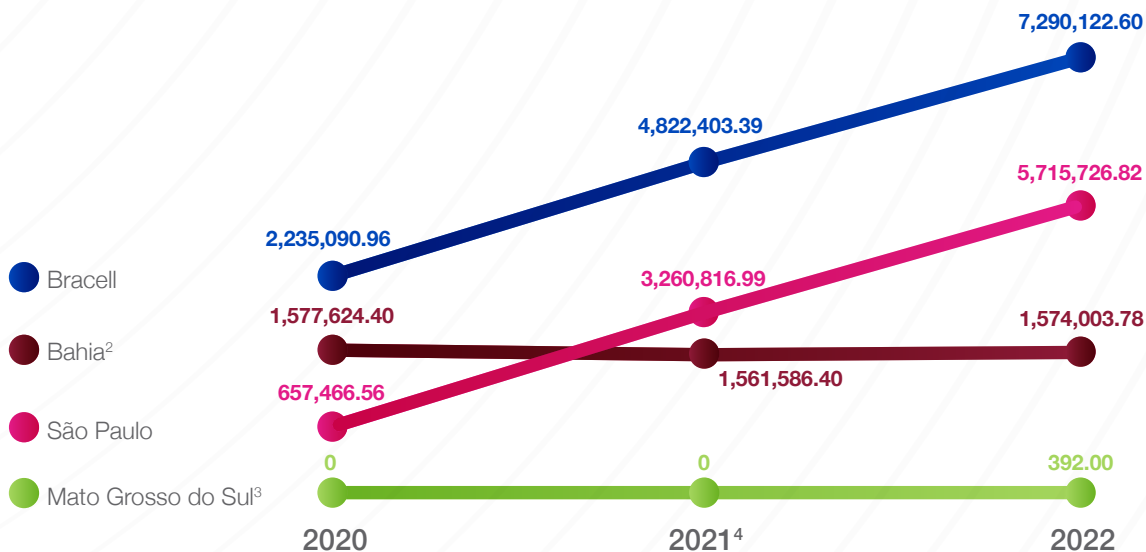


Read more in our Disclosures Hub:

- GRI 3-3 (302) [Material topic Energy](#)
- GRI 302-1 [Energy consumption within the organization](#)
- GRI 302-2 [Energy consumption outside of the organization](#)
- GRI 302-3 [Energy intensity](#)
- GRI 302-4 [Reduction of energy consumption](#)
- GRI 302-5 [Reductions in energy requirements of products and services](#)



Historical energy consumption within the organization¹ (GJ)



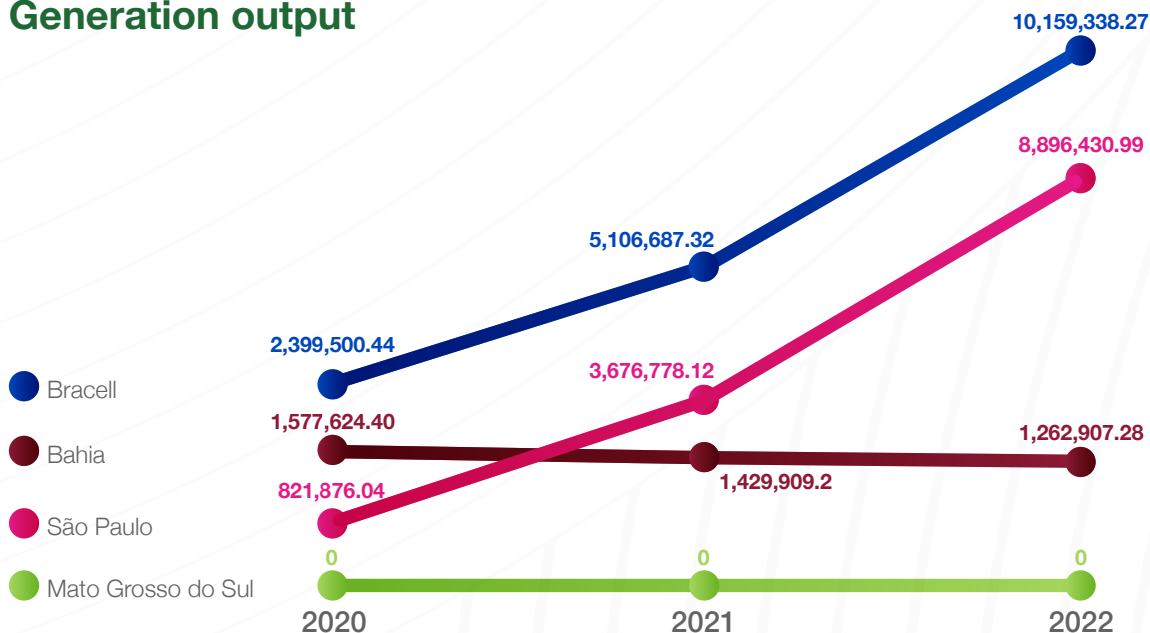
1 The calculation considered the conversion of fuel consumption to GJ in accordance with the GHG Protocol. Data about electricity purchased from the grid includes electricity bill readings and does not include energy consumed within the mill. Reports from the mills and operational sites of the São Paulo plant, issued by the Company's business area, were also taken into account. The conversion factors used are those of the GHG Protocol, IPCC, and National Energy Balance + MCTIC (Grid).

2 The total consumption of non-renewable fuel sources includes consumption of natural gas and liquefied petroleum gas (LPG). The total consumption of renewable sources includes black liquor.

3 Bracell only began operating in Mato Grosso do Sul in 2021. In this region, the Company only has forestry activities and no milling operation.

4 Correction of data reported in the 2021 Sustainability Report. **GRI 2-4**

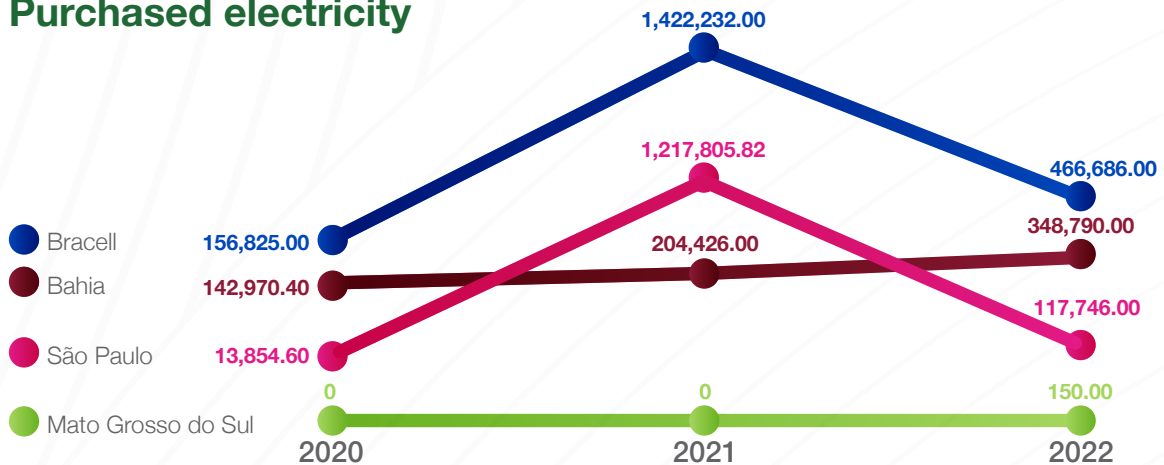
Generation output



Note 1: Correction of data reported in the 2021 Sustainability Report. **GRI 2-4**

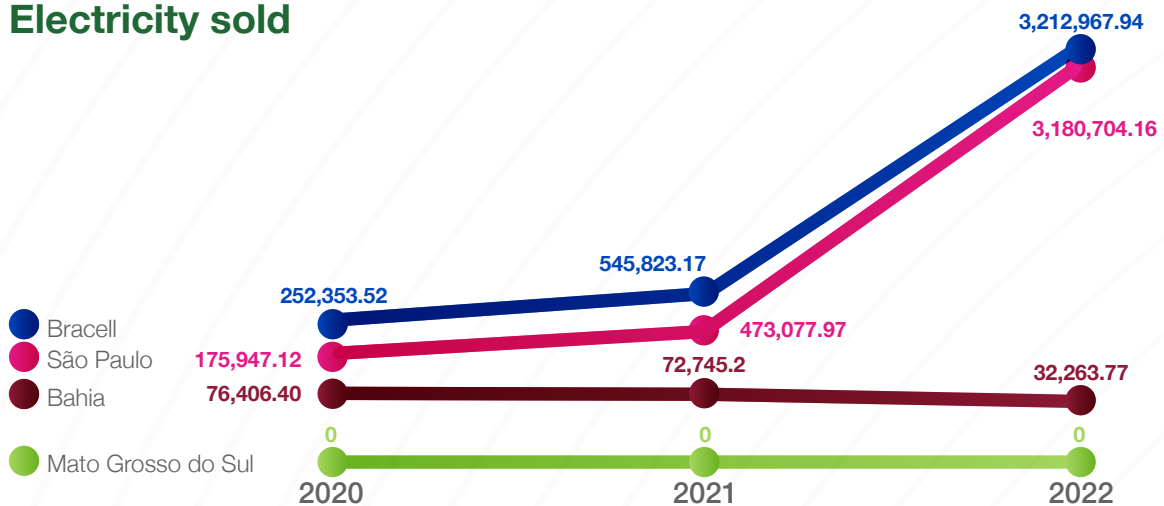
Note 2: In 2020, we reported our energy consumption in MWh. From 2021, we opted to present this information in GJ, the standard most frequently adopted for reporting this GRI content. **GRI 2-4**

Purchased electricity



Note: Correction of data reported in the 2021 Sustainability Report. GRI 2-4

Electricity sold



Acquisition of electric trucks and forklifts

We will incorporate electric forklifts to our operation that use renewable energy generated at the Lençóis Paulista (SP) mill. In January 2023, we rented an electric truck for testing, an unprecedented initiative in this type operation with heavy vehicles (trucks over 40 tons). We expect to avoid the emission of 132 thousand kilograms of CO₂eq per year. The electric truck will be used to transport pulp between the plant located in Lençóis Paulista (SP) until the Intermodal Terminal in Pederneiras (SP), going through roads like the Juliano Lorenzetti (LEP-060), the Osni Mateus (SP-261) and the municipal access road, in Pederneiras. This truck will also be supplied with energy generated at the Lençóis Paulista plant. Investments in equipment are part of the plan for solutions to reduce fossil fuel emissions in our operations.

Carbon stock

We closed the year with 43,389,968 tCO₂e of carbon stock in forest areas (eucalyptus plantations and areas of native vegetation set aside for conservation), which have a fundamental role in removing CO₂ from the atmosphere.

In 2022, our carbon balance was 4,039,103 tCO₂e. During the year, our direct emissions accounted for 614,673 tCO₂e (Scope 1) and 5,258 tCO₂e (Scope 2). The indirect emissions (Scope 3) totaled 935,183 tCO₂e ([read more about our carbon inventory in GRI Content 305-5](#)), with the largest volume of emissions corresponding to the increase in pulp exports (T&D Downstream - Scope 3), which totaled 789,886 tCO₂e for the year.

The increase in emissions compared to 2021 is mainly the consequence of the increase in volume of pulp production after the start-up of operations of the two new flexible lines at the Lençóis Paulista (SP) site. Considering our operations in Bahia and São Paulo, we have, since September 2021, installed capacity to produce 2 million metric tons of dissolving pulp per year, or up to 3 million metric tons of Kraft pulp per year.

In 2022, we set a record in the production of dissolving pulp in Bahia. We produced 480,777 metric tons.

During the year, we set a record for the volume of pulp transported in São Paulo, a consequence of the increase production at the Lençóis Paulista site.

Carbon stocks in forestry areas (tCO₂e)

Stock in planted forestry areas
32,540,594

Stock in areas of native vegetation
10,849,374

Total forest carbon stock
43,389,968



It is important to highlight that of the total balance (4,039,103 tonCO₂e), around 245,272 tonCO₂e comes from fossil fuels and 3,793,831 from biogenic LULUCF emissions.

When we analyse the emissions per ton of pulp produced, the total (S1+S2+S3) was 0.4551 tCO₂e/ton in 2022. When compared to the emissions per ton of pulp in 2021, which amounted to 0.4932 tCO₂e/ton, we had a reduction of 8%. When we analyze the direct emissions (Scope 1 + Scope 2) per ton of pulp, we had a 41% reduction, being 0.3099 tCO₂e/ton in 2021 and 0.1814 tCO₂e/ton in 2022.

The use of renewable energy generated in our mills and the use of renewable fuels to replace fossil fuels also contributed to the positive results in the reduction of direct emissions.

Regarding biogenic emissions, the total corresponds to 10,432,234 tCO₂e. The emissions of biogenic origins come from the use of renewable fuels such as biomass and black liquor and from changes in soil use, besides the management of planted forests through the cutting of eucalyptus.

Carbon balance (tCO₂e) ^{1,2}

GRI 305-1, 305-2, 305-3

Emissions	2020	2021	2022
Total (S1 + S2 + S3)	342,384	636,549	1,555,114
Scope 1	339,032	365,172	614,673
Scope 2	3,352	35,283	5,258
Scope 3	Not accounted for	236,094	935,183
LULUCF: Biogenic emissions	0	0	3,793,831 ⁴
Removals	-4,401,975	-5,970,852	-1,309,842³
Balance	-4,059,591⁵	-5,334,303	4,039,103

1. The Balance calculation includes - Scope 1 + Scope 2 + Scope 3 + Biogenic emissions LULUCF - Removals.
2. In compliance with the Brazilian GHG Protocol Programme and the Brazilian Technical Standards Association ISO 14064 standard.
3. Biogenic removals LULUCF.
4. Biogenic emissions LULUCF: in our scope, represents the biogenic emissions from forestry management, such as harvesting of eucalyptus plantations.
5. Rectification of the amount reported in the 2021 and 2020 reporting cycles. **GRI 2-4**

Total verified emissions across the organization - Operational Control Approach

The increase in emissions in 2022 is a consequence of the increase in volume of our pulp production and the respective increase in pulp transport and export operations.

With the start-up of the new flexible lines at the Lençóis Paulista (SP) site in September 2021, we expanded our total annual installed capacity to 2 million metric tons of dissolving pulp or up to 3 million metric tons of Kraft pulp.

In the year, we set a record in dissolving pulp manufacturing, with production of 480,777 metric tons at our Bahia mill. We also set a record for the volume of pulp transported in São Paulo.

We reduced emissions (Scope 1, 2 and 3) by 8% per ton of pulp, which totalled 0.4932 tCO₂e/ton in 2022.

Regarding the reduction of direct emissions, the use of renewable energy generated in our factories and the replacement of fossil fuels contributed to the result.



We compile our greenhouse gas (GHG) emissions inventory in accordance with the GHG Protocol and the UN Intergovernmental Panel on Climate Change (IPCC).

GHG emissions in metric tons of CO₂ equivalent (tCO₂e)

GHG	Scope 1	Scope 2 Location-based approach	Scope 2 Purchase choice-based approach	Scope 3 (If applicable)
CO ₂	477,674.627	5,258.355	-	920,172.965
CH ₄	56,191.882	-	-	1,336.620
N ₂ O	77,671.098	-	-	13,673.677
HFCs	3,134.442	-	-	-
PFCs	-	-	-	-
SF ₆	0.579	-	-	-
NF ₃	-	-	-	-
TOTAL	614,672.629	5,258.355	-	935,183.261
Biogenic CO ₂	10,415,840.846	-	-	16,393.519

Consult the data for 2021 in the [Disclosures Hub](#).



Read more in our Disclosures Hub:

GRI 3-3 (305) [Material topic Climate](#)

GRI 305-1 [Direct \(Scope 1\) GHG emissions](#)

GRI 305-2 [Energy indirect \(Scope 2\) GHG emissions](#)

GRI 305-3 [Other indirect \(Scope 3\) GHG emissions](#)

GRI 305-4 [GHG emissions intensity](#)

GRI 305-5 [Reduction of GHG emissions](#)

About the report

Our 2022 Sustainability Report shows the progress made on our commitments, policies and work towards continuing our sustainability journey. This document embodies our commitment to transparency and continuous improvement in disclosing the Company's socio-environmental information.

This edition covers the period January 01, 2022 to December 31, 2022, and includes our operations in the states of São Paulo, Bahia, Mato Grosso do Sul and Sergipe. (Bracell SP Celulose Ltda. and Bracell Bahia Specialty Celulose S.A.). **GRI 2-1, 2-2, 2-3**

The disclosures presented address the economic, environmental, social and governance topics viewed as material by our stakeholders—employees, suppliers, local communities, customers and government agencies. The list of topics was produced in a materiality assessment in early 2022.

This report has been prepared in accordance with the Global Reporting Initiative (GRI) Standards 2021. It also describes the progress we have achieved on our commitments in support of the United Nations (UN) Sustainable Development Goals (SDGs).

A more detailed version of our disclosures within each of these frameworks and commitments can be found on the [Bracell Disclosures Hub](#).

Suggestions, queries and criticism are all welcome. To contact Bracell, please send your message by email to faleconosco@bracell.com (Bahia and Sergipe operations) and faleconoscosp@bracell.com (São Paulo and Mato Grosso do Sul operations). **GRI 2-3**

GRI content index

Statement of use: Bracell has reported in accordance with the GRI Standards for the period January 1st to December 31st, 2022.

GRI 1 used: GRI 1: Foundation 2021

GRI standard/ other source	Disclosure	Location	Omission			
			Requirement(s) Omitted	Reason	Explanation	
GRI 2: General Disclosures 2021	General Disclosures					
	2-1 Organizational details	21 , 126				
	2-2 Entities included in the organization's sustainability reporting	126				
	2-3 Reporting period, frequency and contact point	126				
	2-4 Restatements of information	120 , 121 , 123				
	2-5 External assurance	141				
	2-6 Activities, value chain and other business relationships	24 , 29				
	2-7 Employees	49 , 59 , 60				
	2-8 Workers who are not employees	49 , 60				
	2-9 Governance structure and composition	38				
	2-10 Nominating and selecting the highest governance body	40				
	2-11 Chair of the highest governance body	40				
2-12 Role of the highest governance body in overseeing the management of impacts	40					

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-13 Delegation of responsibility for managing impacts	46			
	2-14 Role of the highest governance body in sustainability reporting	40			
	2-15 Conflicts of interest	47			
	2-16 Communication of critical concerns	40			
	2-17 Collective knowledge of the highest governance body	40			
	2-18 Evaluation of the performance of the highest governance body	40			
	2-19 Remuneration policies	-	All of the requirements	Confidentiality restrictions	Bracell's financial information is confidential, so it is not disclosed.
	2-20 Process to determine remuneration	-	All of the requirements	Confidentiality restrictions	Bracell's financial information is confidential, so it is not disclosed.
	2-21 Annual total compensation ratio	-	All of the requirements	Confidentiality restrictions	Bracell's financial information is confidential, so it is not disclosed.
	2-22 Statement on sustainable development strategy	4 , 8			
	2-23 Policy commitments	18 , 41 , 46			
	2-24 Embedding policy commitments	89			
	2-25 Processes to remediate negative impacts	84			
	2-26 Mechanisms for seeking advice and raising concerns	45			
	2-27 Compliance with laws and regulations	47 , 83			
	2-28 Membership associations	17 , 18			
	2-29 Approach to stakeholder engagement	19			

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
GRI 2: General Disclosures 2021	2-30 Collective bargaining agreements	In Bahia, all employees up to management level, including managers, are covered by collective agreements. Levels above this are not therefore covered by collective bargaining agreements. In São Paulo and Mato Grosso do Sul, all employees up to coordination level are covered by collective agreements. Employees above are not covered by collective bargaining agreements.			

Material topics

GRI 3: Material Topics 2021	3-1 Process to determine material topics	14
	3-2 List of material topics	16

Screening suppliers using social and environmental criteria

GRI 3: Material Topics 2021	3-3 Management of material topic	95
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	95
GRI 308: Supplier Environmental Assessment 201	308-1 New suppliers that were screened using environmental criteria	95
	308-2 Negative environmental impacts in the supply chain and actions taken	95
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	95
	414-2 Negative social impacts in the supply chain and actions taken	95

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
SASB	RR-PP-430a.1: Percentage of wood fiber sourced from (1) third-party certified forestlands and percentage to each standard and (2) meeting other fiber sourcing standards and percentage to each standard	In São Paulo operations, 65% of the wood received at the mill for pulp production came from forests that have the Forest Certification seal (Cerflor) and 35% are certified by the Program of Endorsement of Forestry Certifications (PEFC). In Bahia, this number reaches 60%. In the PEFC “controlled” category are 40% of the suppliers of operations in Bahia.	-	-	-
	RR-PP-430a.2: Amount of recycled and recovered fiber procured	-	All of the requirements	Not applicable	Disclosure referring to the paper sector only

Employee health, safety and well-being

GRI 3: Material Topics 2021	3-3 Management of material topic	61 , 66
	403-1 -Occupational health and safety management system	61 , 67
	403-2 - Hazard identification, risk assessment, and incident investigation	62 , 67
	403-3 - Occupational health services	66 , 67
	403-4 - Worker participation, consultation, and communication on occupational health and safety	62 , 67
	403-5 - Worker training on occupational health and safety	64 , 67
	403-6 - Promotion of worker health	66 , 67
	403-7 - Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	67
	403-8 - Workers covered by an occupational health and safety management system	67
	403-9 - Work-related injuries	64 , 67
GRI 403: Occupational Health and Safety 2018	403-10 - Work-related ill health	67

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
Biodiversity					
GRI 3: Material Topics 2021	3-3 Management of material topic	<u>106</u>			
GRI 304 - Biodiversity 2016	304-1 - Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	<u>115</u>			
	304-2 - Significant impacts of activities, products and services on biodiversity	<u>115</u>			
GRI 304 - Biodiversity 2016	304-3 - Habitats protected or restored	<u>115</u>			
	304-4 - IUCN Red List species and national conservation list species with habitats in areas affected by operations	<u>115</u>			
Compliance, ethical conduct, integrity and transparency					
GRI 3: Material Topics 2021	3-3 Management of material topic	<u>43</u>			
GRI 205: Anti-corruption 2016	205-1 Operations assessed for risks related to corruption	<u>43, 47</u>			
	205-2 Communication and training about anti- corruption policies and procedures	<u>44, 47</u>			
	205-3 Confirmed incidents of corruption and actions taken	<u>47</u>			
GRI 206: Anti- competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	-	All of the requirements	Not applicable	The theme is managed by Bracell through the Code of Conduct, Code of Ethics for Purchasing and other internal regulations, however, it was not pointed out as material in the stakeholder consultation, carried out in 2022
Human rights in the value chain					
GRI 3: Material Topics 2021	3-3 Management of material topic	<u>55</u>			

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	55 , 60			
GRI 408: Child Labor 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	94			
GRI 409: Forced or Compulsory Labor	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	94			
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	94			
Diversity, inclusion & equality					
GRI 3: Material Topics 2021	3-3 Management of material topic	55			
GRI 202: Market Presence 2016	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	-	All of the requirements	Confidentiality restrictions	For strategic reasons, Bracell does not disclose compensation information
	202-2 Proportion of senior management hired from the local community	-	All of the requirements	Confidentiality restrictions	For strategic reasons, Bracell does not disclose compensation information
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	60			
	405-2 Ratio of basic salary and remuneration of women to men	-	All of the requirements	Confidentiality restrictions	For strategic reasons, Bracell does not disclose compensation information
Energy efficiency					
GRI 3: Material Topics 2021	3-3 Management of material topic	119			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	119			
	302-2 Energy consumption outside of the organization	119			
	302-3 Energy intensity	119			
	302-4 Reduction of energy consumption	119			
	302-5 Reductions in energy requirements of products and services	119			

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
SASB	RR-PP-130a.1: (1) Total energy consumed, (2) Percentage grid electricity, (3) Percentage from biomass, (4) Percentage from other renewable energy.	In 2022, the total energy consumed was 7,290,122.60 GJ. 466,686 GJ were purchased from the national GRID. The energy generated from eucalyptus biomass was 8,896,430.99 GJ. There was also a generation of 1,262,907.28 GJ steam that feeds the turbogenerators for energy production. Read more in the Disclosures Hub , under the Climate item.			

Water stewardship: water and effluents

GRI 3: Material Topics 2021	3-3 Management of material topic	96			
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	99			
	303-2 Management of water discharge-related impacts	99			
	303-3 - Water withdrawal	99			
	303-4 Water discharge	99			
	303-5 Water consumption	99			
SASB	RR-PP-140a.1: (1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	In 2022, the total water captured was 71,659,843.85 m ³ . The total water consumed in the year was 7,606,166.11 m ³ . More information in the Disclosures Hub , in the item Responsible Production, in content GRI 3-3 Water management and GRI 303-1 Interactions with water as a shared resource.			
	RR-PP-140a.3: Description of water management risks and discussion of strategies and practices to mitigate those risks	Information available in the Disclosures Hub , in the item Responsible Production, in content GRI 3-3 Water management and GRI 303-1 Interactions with water as a shared resource.			

Climate change

GRI 3: Material Topics 2021	3-3 Management of material topic	116			
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GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
GRI 201: Economic Performance 2016	201-2 Financial implications and other risks and opportunities due to climate change	15			
	305-1 Direct (Scope 1) GHG emissions	123, 125			
GRI 305: Emissions 2016	305-2 Energy indirect (Scope 2) GHG emissions	123, 125			
	305-3 Other indirect (Scope 3) GHG emissions	123, 125			
	305-4 GHG emissions intensity	125			
	305-5 Reduction of GHG emissions	122, 125			
	306-1 Waste generation and significant waste-related impacts	15, 102			
GRI 306: Waste 2020	306-2 Management of significant waste-related impacts	15, 102			
	306-3 Waste generated	15, 102			
	306-4 Waste diverted from disposal	15, 102			
	306-5 Waste directed to disposal	15, 102			
SASB	RR-PP-110a.1: Gross global scope 1 emissions	Scope 1 emissions (direct emissions) totalled 614,673 tCO ₂ e. More information in the Climate item, in the Disclosures Hub .			
	RR-PP-110a.2: Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Information available in the Disclosures Hub , in the Climate item, GRI 3-3 Emissions.			
	RR-PP-120a.1: Atmospheric emissions of the following pollutants: (1) NO _x (except N ₂ O), (2) SO ₂ , (3) Volatile organic compounds (VOCs), (4) Particulate matter (PM) and (5) Hazardous air pollutants (HAPs)	This is not a material topic for Bracell			

GRI standard/ other source	Disclosure	Location	Omission		
			Requirement(s) Omitted	Reason	Explanation
Community engagement					
GRI 3: Material Topics 2021	3-3 Management of material topic	78			
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	15, 69, 71			
	203-2 Significant indirect economic impacts	15, 71, 76			
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	81			
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	79, 81			
	413-2 Operations with significant actual and potential negative impacts on local communities	78, 81			
Valuing our human capital					
GRI 3: Material Topics 2021	3-3 Management of material topic	50			
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Data available at the Disclosures Hub, on People and Culture section.			
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Data available at the Disclosures Hub, on People and Culture section.			
	401-3 Parental leave	Data available at the Disclosures Hub, on People and Culture section.			
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	54, 59			
	404-2 Programs for upgrading employee skills and transition assistance programs	52, 54			
	404-3 Percentage of employees receiving regular performance and career development reviews	54, 59			

Verification Statement of GHG Inventory

Verification Statement Nº 17/2023

This Verification Statement documents that BVQI DO BRASIL SOCIEDADE CERTIFICADORA LTDA carried out the verification activities in accordance with the Verification Specifications of the Brazilian GHG Protocol Program and the ABNT NBR ISO 14064-3:2007 standard.

Inventory Organization:	BRACELL SP CELULOSE LTDA
CNPJ:	53.943.098/0001-87
Address:	Juliano Lorenzetti Highway, Km 4, CEP: 18685-901 – Lençóis Paulista – Sao Paulo – Brazil.
Accountable:	João Carlos Augusti
E-mail:	jaugusti@bracell.com

The greenhouse gas (GHG) emissions reported by the Inventory Organization in its emissions inventory, from January 1 to December 31, 2022, are verifiable and comply with the requirements of the Brazilian GHG Protocol Program, detailed in the Specifications of the Brazilian GHG Protocol Program for Accounting, Quantification and Publication of Corporate Inventories of Greenhouse Gas Emissions (EPB).

Level of Assurance

The Verification Body (OV) has given the following level of confidence to the verification process:

X	Verification with limited level of assurance
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“There is no indication that the inventor organization’s GHG inventory for the year 2022 is not materially correct, is not a fair representation of GHG data and information and was not prepared in accordance with the EPB.”

The limitations of the verification process were: the minimum number of visits was made, as well as all the categories of the scopes verified, with limitation in the sampling of emission sources by category.

Scope of Verification

The inventory for the year 2022 of the inventory organization was verified within the following scope:

Organizational Approach	Operating Limits
X Operational control	X Scopo 1
	X Scopo 2 – location-based approach
Share Approach	Scopo 2 – market-based approach
	X Scopo 3

The following were excluded from verification: there were no exclusions of scopes and categories of emissions.

Installations Visited

Installation	Relationship with the Holding Company	Address	Date of visit
BRACELL São Paulo	Unit	Juliano Lorenzetti Highway, Km 4, CEP: 18685-901 – Lençóis Paulista – São Paulo – Brazil	23/03/2023
BRACELL Bahia	Unit	Alfa Street, 1033, AIN – Industrial Complex of Camaçari CEP 42810-290 – Camaçari – Bahia, Brazil	03/04/2023

Total emissions verified across the organization - Operational Control approach

GHG emission in tons of CO ₂ equivalent (tons CO ₂ e) Global Corporate Inventory				
GHG	Scopo 1	Scopo 2 Location-based	Scopo 2 Marked based	Scopo 3 (if applicable)
CO ₂	477,674.627	5,258.355	-	920,172.965
CH ₄	56,191.882	-	-	1,336.620
N ₂ O	77,671.098	-	-	13,673.677
HFCs	3,134.442	-	-	-
PFCs	-	-	-	-
SF ₆	0.579	-	-	-
NF ₃	-	-	-	-
TOTAL	614,672.629	5,258.355	-	935,183.261
CO ₂ biogenic	10,415,840.846	-	-	16,393.519

Total removals verified across the organization - Operational Control Approach

Removal of biogenic CO ₂ (tons CO ₂ e)				
GHG	Scopo 1	Scopo 2 Location-based	Scopo 2 Marked based	Scopo 3 (if applicable)
CO ₂ biogênico	-1.309.842,414	-	-	

Other greenhouse gases not covered by the Kyoto Protocol (tCO₂e)

GHG	Emissions tCO ₂ e
HFC – 22, HCFC – 141B	2,627.662

Anthropogenic and biogenic emissions LULUCF (tCO₂e)

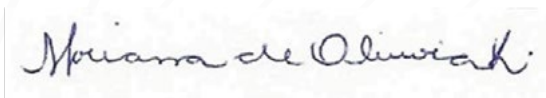
Scopo 1	Anthropogenic emissions	614,672.629 tCO ₂ e
	Biogenic Emissions LULUCF	3,793,830.803 tCO ₂ e
	Biogenic Removals LULUCF	-1,309,842.414 tCO ₂ e
	Total Scope 1:	3,098,661.02 tCO ₂ e
Scopo 2	Total Scope 2:	5,258.355 tCO ₂ e
Scopo 3	Total Scope 3:	935,183.261 tCO ₂ e
	Total balance: S1 + S2 + S3	4,039,102.634 tCO ₂ e

Carbon stocks in forest areas (tCO₂e)

Carbon stocks in planted forest areas	32,540,594.219 tCO ₂ e
Carbon stocks in native forest areas	10,849,374.147 tCO ₂ e
Total forest carbon stock	43,389,968.366 tCO ₂ e

Conflict of Interest

I, Mariana de Oliveira Klein, certify that no conflict of interest exists between the Inventorying Organization and BVQI DO BRASIL SOCIEDADE CERTIFICADORA LTDA, or any of the individuals who are members of the verification team involved in the verification of the inventory, as defined in chapter 3.2.1 of the Verification Specifications of the Brazilian GHG Protocol Program.

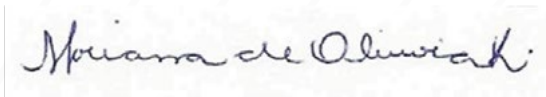


Mariana de Oliveira Klein, Lead Auditor

Date: 05/09/2023

Conclusion

As responsible for the GHG inventory verification activities of the inventory organization, we certify that the information contained in this document is true.



Mariana de Oliveira Klein, Lead Auditor

Date: 05/09/2023

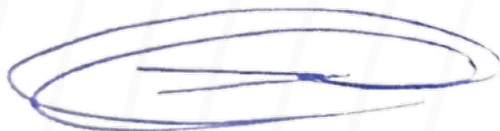


Geiza Costa, Independent Reviewer

Date: 05/09/2023

Review (if applicable)

Version:	01
Date:	05/09/2023
Justification:	Emission



Francisco Martins De Almeida Rollo - Technical Manager Local Office: Piaui Street, 435, Santa Paula - 09541-150 - Sao Caetano do Sul – SP - Brazil



Declaration of the comprehensive achievement pertaining the **Environmental Bracell's Project One to One in Brazil**

Simetria PSE SS Ltda asserts that the Bracell's Environmental Project One to One has accomplished, on the mark date of December, 31st/2022, the whole result of 82%. This overall achievement encompasses all the Brazilian territories in which Bracell presently maneuvers its forest operations (states of Bahia, Sergipe, São Paulo and Mato Grosso do Sul).

Such assertion is based upon audits primarily performed so as to comprises inspection of forest areas, examination of documents and geo processing data, whose reports, as well as audit criteria, has been formally acknowledged and clarified altogether with Bracell's management.

Furthermore, this assessment conclusion has associated to itself a materiality conveyed as an attained sampling uncertainty, concerning the areas covered and reviewed, not greater than 1% for a specified confidence coefficient of 95%, as well as a proportion Binomial parameter stipulated as 50%, admitting maximum variance of 25% in terms of worst case design for dimensioning the audit sampling scale, which was planned and effectively carried out, with due care and diligence.

São Paulo, April 26th/2023.



Alexandre Bruno Moreno de Carvalho
Former Owner and Director

Assurance statement for the Sustainability Report

GRI 2-5

Assurance Statement – Bureau Veritas

Introduction

Bureau Veritas Certification Brasil (Bureau Veritas) was engaged by Bracell to conduct an independent verification of its 2022 Sustainability Report (hereinafter referred to as the Report).

The information published in the Report is the sole responsibility of Bracell's management. Our responsibility is defined according to the scope below.

Scope of Work

The scope of this verification covered:

1. The Global Reporting Initiative™ Standards and Principles¹ for Sustainability Reporting and refers to accountability for the period from January 1 to December 31, 2022, also encompassing the Sustainability Accounting Standards Board (SASB) Indicators.

Responsibilities of Bracell and Bureau Veritas

The preparation, presentation and content of the Report are the sole responsibility of Bracell's administration. Bureau Veritas is responsible for providing an independent opinion to Stakeholders, in accordance with the scope of work defined in this statement.

Methodology

The verification included the following activities:

1. Interviews with those responsible for the material themes and content of the Report;
2. Remote audits encompassing the:

Two factories in the Industrial Complex of Camaçari (BA) and in the industrial district of Lençóis Paulista (SP), where its headquarters and forestry operations are located, in addition to forestry operations in Mato Grosso do Sul and Sergipe.

1. Materiality, Inclusion of Stakeholders, Context of Sustainability, Completeness, Balance, Comparability, Accuracy, Timeliness, Clarity and Reliability

3. Remote verification of corporate and operational processes (verification of material indicators GRI and SASB - sampling of information);
4. Analysis of documentary evidence provided by Bracell for the period covered by the Report (2022);
5. Evaluation of the systems used for data compilation;
6. Analysis of engagement activities with interested parties (stakeholders) developed by Bracell;
7. Evaluation of the system used to determine the material themes presented in the Report, considering the context of sustainability and the scope of the published information.

The verification level adopted was Limited, in accordance with the requirements of the ISAE 3000² standard, incorporated into Bureau Veritas' internal verification protocols, which brings certain restrictions with regard to data accuracy.

Exclusions and Limitations

Any assessment of information related to:

- Activities outside the reporting period;
- Position statements (expressions of opinion, belief, goals or future intentions) by Bracell;
- Accuracy of economic and financial data contained in this Report, extracted from financial statements, verified by independent auditors;
- Inventory of greenhouse gas (GHG) emissions.

The following limitations have been applied to this check:

- The reliability of the data was verified on a sample basis, exclusively in the light of information and data related to the material topics presented in the Report;
- The economic information presented in the Report was specifically verified against the GRI Balance and Completeness principles.

Opinion on the Report and the Verification Process

- The Bracell Report comprises a complete edition, available on the company's website. The scope of our verification reached the 2022 data and indicators on the material topics presented in this publication.
- Bracell presents its Report based on the material themes reviewed in a materiality study carried out in 2022. In our understanding, the themes continue to reflect the impacts of Bracell's activities in a balanced way.
- In our understanding, the Bracell Sustainability Report presents the impacts of the company's activities in a balanced manner;
- The Bracell demonstrated an adequate data collection and compilation method in relation to the GRI Reliability Principle;
- The inconsistencies found in the Report were adjusted during the process and were satisfactorily corrected.

² 2. International Standard on Assurance Engagements 3000 – Assurance Engagements other than Audits or Reviews of Historical Financial Information.

Conclusion

As a result of our verification process, we have concluded that:

- The information provided in the Report is balanced, consistent and reliable;
- Bracell established appropriate systems for collecting, compiling and analyzing quantitative and qualitative data used in the Report;
- The Report is adhere to the Principles for defining the content and quality of the GRI Standard for sustainability reporting.

Declaration of Independence and Impartiality

Bureau Veritas Certification is an independent professional services firm specializing in Quality, Health, Safety, Social and Environmental Management, with more than 190 years' experience in independent assessment.

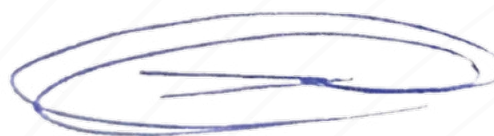
Bureau Veritas has implemented and enforces a Code of Ethics throughout its business to ensure that its employees maintain the highest standards in their day-to-day activities. We are mindful of prevention with regard specifically to conflict of interest.

The verification team does not have any other link with Bracell, other than the independent verification of the Sustainability Report. We understand that there is no conflict between other services performed by Bureau Veritas and this verification performed by our team.

The team that carried out this verification for Bracell has extensive knowledge in verifying information and systems, involving environmental, social, health, safety and ethics issues, which combined with experience in these areas, allows us to have a clear understanding of the presentation and verification of good corporate responsibility practices.

Contact

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Credits

General coordination

Bracell – Sustainability Department

GRI Consulting

rpt.sustentabilidade

Content, editorial coordination and design

Juntos | Approach Comunicação – approach.com.br

Photos

Bracell archive

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