



With open arms
for the future

Sustainability
Report

Irani 2018

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Message from the CEO

(102-12, 102-14 and 102-15)

Sustainability is the essence of our business. Planted forests supply our production processes and, in addition to the environmental management practices, were fundamental for us to remove 565,385 tons of CO₂ from the atmosphere in 2018, 4% higher than in 2017, legitimating our Carbon Neutral Company title.

Our processes are integrated and we had as a priority, in 2018, continuous improvement in production, management systems and governance.

We are moving forward in Irani's digital transformation process with the Projeto Simplifique (Simplify Project), which aims to implement SAP S/4HANA as the company's ERP. The go live of the first wave occurred successfully at the turn of the year. We continue to implement the other modules that make up the second wave during 2019. With the implementation of SAP and Kiwiplan - corrugated containerboard packaging plant management system - Irani is prepared for the digital transformation and Industry 4.0 challenges.

With external consulting support, we have deployed our strategic goals for all company levels. We implemented four groups of strategic indicators, organized in trees, from the president to the operational teams. The four

defined trees were financial (EBITDA and NCG - working capital requirement - variation), customer satisfaction, health and safety, and organizational climate. We have also improved our business management processes for Corrugated Containerboard Packaging Business. With this project we have advanced a lot to understand the business profitability challenges, which today represents around 65% of the company's total revenue.

We implemented the Integrity Program and revised our Code of Ethical Conduct to reflect the policies defined by the Program. We disseminate to all our employees and suppliers. This was an important step in improving our governance practices, since it encompasses - within a single program - all relationship policies and expected positions.

The sustainability and innovation committees, two cross-cutting themes with strategic importance for the company, began to operate in a systematic manner, organizing our efforts and enhancing our actions. In the sustainability area, the committee was dedicated to the evaluation and eventual revision of the practices already adopted by the company, highlighting actions to be prioritized, such as voluntary actions in all our units, adding up to 600 hours of volunteer work. We have also evaluated our management practices against international methodologies and parameters such as the Global Reporting Initiative (GRI), the B3's

Corporate Sustainability Index (ISE) and the Global Compact commitments, to which we have been a signatory since 2007. We have updated the socio-environmental impact assessments around the forest areas and industrial units in Santa Catarina and Rio Grande do Sul and are working on action plans to respond to the main demands identified. This work is being extended to the surroundings of our units in São Paulo and Minas Gerais, with completion expected to 2019. In the coming years, we will further align with our practices to the strategic goals of the company and the United Nations Sustainable Development Goals.

Similarly, in the innovation area, efforts have been organized and technology platforms revitalized, delivering greater coherence and momentum to actions. We have also defined priority research lines in the Forest and Resin, Pulp and Paper, Corrugated Cardboard, Environmental and Energy segments, which cover, among other issues, the genetic improvement of Pinus, new process technologies, product innovations and new energy sources.

Message from the CEO

(102-12, 102-14 and 102-15)

We continued to advance our indicators and increased the OCC purchase index under long-term contracts from 83.12% to 85.06%, an essential raw material to produce recycled paper. Our initiatives focusing on circular economy foster not only a new value chain from industrial waste, but also entrepreneurship and employment and income generation for the local community. Besides, they provided, in 2018, savings of R\$ 9.7 million in the disposal of waste to landfill, where they would emit more than 6 thousand tons of greenhouse gases (GHG).

These practices and our management with a focus on sustainability were recognized by 14º Prêmio Brasil Ambiental da Amcham Rio (Brasil Ambiental Award) and by Prêmio ECO® 2018 (ECO Award), from Amcham Brasil. We also received the Troféu Prata do Programa Gaúcho de Qualidade e Produtividade - PGQP - (Silver Trophy of the Gaúcho Quality and Productivity Program), organization that also conferred on us the Sustainability Recognition, Highlight in the Industrial Sector and the Innovation Award 2018. That same year, we received the Prêmio Empresa Cidadã (Citizen Company Award),

from the Associação dos Dirigentes de Vendas e Marketing de Santa Catarina - ADVB/SC (Association of Sales and Marketing Directors of Santa Catarina) and the Troféu e o Certificado de Responsabilidade Social (Social Responsibility Trophy and Certificate) from the Legislative House of Santa Catarina (Alesc).

The year 2018 was featured by the recovery of economic-financial results for Irani. After very hard years for the Brazilian companies due to the strong economic recession, the year 2018 begins to present a reaction, although with a timid GDP growth. Irani, in particular, presented a much higher economic-financial performance than in 2017, as a result of the more favorable economic environment and also of the adjustment programs we have made in recent years. Our EBITDA of R\$ 178 million was 15.4% higher than in the previous year, noting that, in 2017, EBITDA considered standing forest sales. Disregarding this effect, our EBITDA increased by 31.7%

2018 was also the first year of the 2018-2027 strategic planning cycle. Our short-term strategic objectives, fully consistent with the medium- and long-term ones, were conducted as planned. We maintained our focus on the gradual process of financial deleveraging, substantially improved the free cash flow, controlled investments and advanced the indicators that evaluate Irani's economic and financial performance - ROE, ROIC and EBITDA margin.

Finally, we took advantage of the year 2018 to improve our practices, processes and management systems. Irani is increasingly prepared to embark on a new prosperity cycle ahead. We are very optimistic and hopeful that the new government, by setting standards of excellence for the management of the Brazilian state, will contribute decisively to the development of the private sector and its companies. The reforms, the competitiveness and productivity agenda, the further opening up of the Brazilian economy, will bring important challenges for Brazilian companies. By anticipating the professionalization in our management while seeking excellence in our processes, Irani reinforces its purpose, aware that it is only possible to open arms for the future by investing in the present.



SÉRGIO LUIZ COTRIM RIBAS
CEO



Outlook

About Us

(102-1, 102-2, 102-3, 102-4 and 102-7)



Mission

Build value relationships



Vision

Be the best, most profitable, one of the best companies to work for and be among the largest paperboard and corrugated packaging companies



Values

- Life, first of all
- Challenged and valued people
- Customer-focused
- Results-focused
- Integrity
- Cordiality
- Innovation
- Social and environmental responsibility



Certifications

100% OF OUR PLANTS ARE FSC® CERTIFIED

(Forest Stewardship Council)

100% OF OUR PLANTS ARE ISO 14064:2006 CERTIFIED

(Greenhouse gas inventory management system)

100% OF THE CORRUGATED CONTAINERBOARD PACKAGING BUSINESS HAVE ISO 14001:2015 CERTIFICATION

(Environmental management system)

100% OF OUR PLANTS ARE ISO 9001:2015 CERTIFIED

(Quality management)



Employees

Total of 2,286 active employees (85% men and 15% women), challenged climate, which has led us to rank among the best companies to work for according to GPTW® for three years.



Stakeholders

GRI (102-40 and 102-42)

We prioritize the definition of value relations with these publics seeking mutual benefits

- Employees
- Communities
- Government and society
- Suppliers
- Shareholders
- Clients

Many of them are partners or are benefited by our practices aimed at innovation with absolute respect for people and the environment, highlighted in 2018 by important national recognitions such as:

- Prêmio Empresa Cidadã - Advb/Sc (Citizen Company Award)
- Prêmio Qualidade Rs - Pggp (Quality Award)
- Prêmio Brasil Ambiental - Amcham Rio (Brasil Ambiental Award)
- Prêmio Eco® - Amcham do Brasil (Brasil Ambiental Award)
- Troféu e Certificado de Responsabilidade Social - ALESC (Social Responsibility Trophy and Certificate)

Business Profile

(102-40 and 102-42)

The essence of our business comes from planted forests and our businesses are integrated: forestry, paper, corrugated containerboard packaging and resin.

We have 38,940 hectares of land, of which 72% are located in Santa Catarina and 28% in Rio Grande do Sul.



We sell to foreign and domestic market

Paper and Corrugated Containerboard Packaging, Campina da Alegria, Vargem Bonita - SC

Office RS
Porto Alegre - RS



Paper MG,
MG Santa Luzia

Corrugated Containerboard Packaging, SP Indaiatuba

Corrugated Containerboard Packaging SP, Vila Maria
Sao Paulo - SP

Office SC
Joaçaba - SC

Resin RS
Balneário Pinhal - RS

LEGEND



Headquarters



Office



Paper Plant



Corrugated Containerboard Packaging Plant



Resin Plant

Business Profile

(102-40 and 102-42)

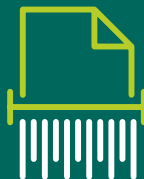
Pinus seedlings cultivated in Santa Catarina in our own nursery, destined to:



Virgin fiber paper production



The unused wood is old in the regional market for **sawmills and lamination mills**



Recycled paper from OCC (Old Corrugated Containerboard) collected in urban centers.



Recycled paper for sale, with a plant exclusively dedicated in Minas Gerais



Are converted into **corrugated boxes and sheets** that protect our customers' products in Santa Catarina and São Paulo

1st company in the Resin segment to certify the forest management and chain of custody by FSC® and the 1st company in Brazil to produce pitch and turpentine



Management of the planted forests in RS for the extraction of gum resin and resination



The wood is sold in the regional furniture market

Highlights in 2018



Governance

- The dissemination of the Integrity Program and Code of Ethics content was organized in three waves and conducted by our leaders, covering all hierarchical levels
- The Board of Executive Directors was responsible for communicating our Strategic Planning in all units
- Creation of Innovation and Sustainability Committees



Efficiency and Innovation

- Simplify Project completed the first wave with a focus on deploying SAP S/4HANA technology as the primary ERP, involving:
 - more than 120 people
 - more than 650 simulated scenarios
 - over 10,000 steps tested
 - more than 5 thousand hours of face-to-face training
- **R\$ 12 thousand distributed as payment of percentage of the operational result of the ideas enrolled in the Inova Ideas Program**
- Partnerships focused on open innovation for the development of solutions for our products and business



Economic Performance

(102-6)

Net revenue of **R\$ 932.8 million** (increase of 8.6% when compared to 2017)



60% corrugated packaging



30% paperboard packaging



10% Forestry RS and Resins

Adjusted EBITDA of **R\$ 178.3 million** in 2018 with margin of 19.1% (growth of 15.4% in relation to 2017)

Revenue Management Project presented a financial return of approximately **R\$ 7.3 milhões**

Sales



18% External market



82% Internal market

Highlights in 2018



Challenged and valued people

- 59% of openings filled with internal recruitments
- More than R\$ 32 million invested in employees benefits
- Average 25 hours of training per employee
- 94% of employees covered by the Supera Program, receiving periodic performance reviews
- Launch of Irani Corporate Education composed of three theme-based schools (Lidera, Itec and DNA) focused in themes relevant to our business
- Creation of the organizational climate tree and occupational health and safety with indicators periodically monitored by the Board of Executive Directors
- 27 Kaizen weeks motivated our teams to evaluate and solve problems with quick results. Since 2010, 141 continuous improvement projects nature have been carried out
- Involvement of more than 100 leaders in customer focus training



Social and environmental management

- Updating of socio-environmental impacts studies in the communities surrounding the forestry and industrial operations of Irani in SC and RS
- We recovered 79% of the forest area burned in 2017, with intention of planting conclusion still in 2019
- We dedicated 334 hours to environmental education, mobilizing 1,853 people
- We invested R\$ 5,9 million in environmental initiatives that include awareness actions regarding the interaction of business with natural resources
- Over 600 hours of volunteer work focusing on education, citizenship and the environment
- More than R\$ 224 thousand in social investments
- Over 10 thousand seedlings donated to surrounding communities, including native species such as Araucaria, Imbuia and Butiá
- Creation of the Private Natural Heritage Reserve (RPPN) Profª Yara C. Nicoletti in the community of Campina da Alegria, in Vargem Bonita (SC), with 285 hectares
- Our circular economy initiatives have resulted in savings of over R\$ 9 million in landfill waste disposal costs



Production chain

- 883 reviews applied to the composition of the Supplier Performance Index (IDF), involving all purchasing groups
- R\$ 129 million on purchases from suppliers in the surrounding communities



Our
Businesses

Our Businesses

Forestry

Essence of our business, our forest base consists of 38,940 hectares of land, of which 72% located in Santa Catarina and 28% in Rio Grande do Sul. Duly licensed by the appropriate agencies, the areas are certified by the Forest Stewardship Council® (FSC®), showing that our practices are:



Environmentally appropriate

Protect and conserve protected areas and High Conservation Value Areas (HCVAs), adopting the best practices of identification, control, minimization and mitigation of environmental impacts and conservation of biodiversity.



Socially Beneficial

Respect the rights of workers and local communities, dialoguing and strengthening our relationship in the region where we operate.



Economically viable

Build markets, adding value and creating equitable access to forest benefits, ensuring the supply of resin and timber from renewable plantations.

Therefore, we ensure forest operations adequacy, biodiversity preservation, compliance with obligations with employees, respect for surrounding communities and we annually publish the Public Summary on Forest Management in Santa Catarina and Rio Grande do Sul, making them available to our relationship at:

<http://www.irani.com.br/en/irani/bussines-area/forestry/>

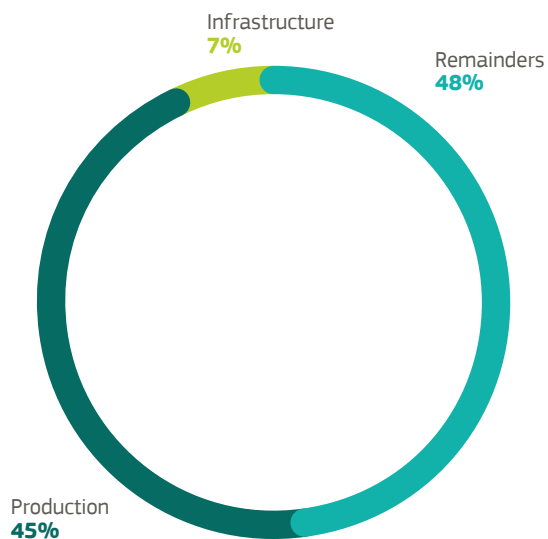


Santa Catarina

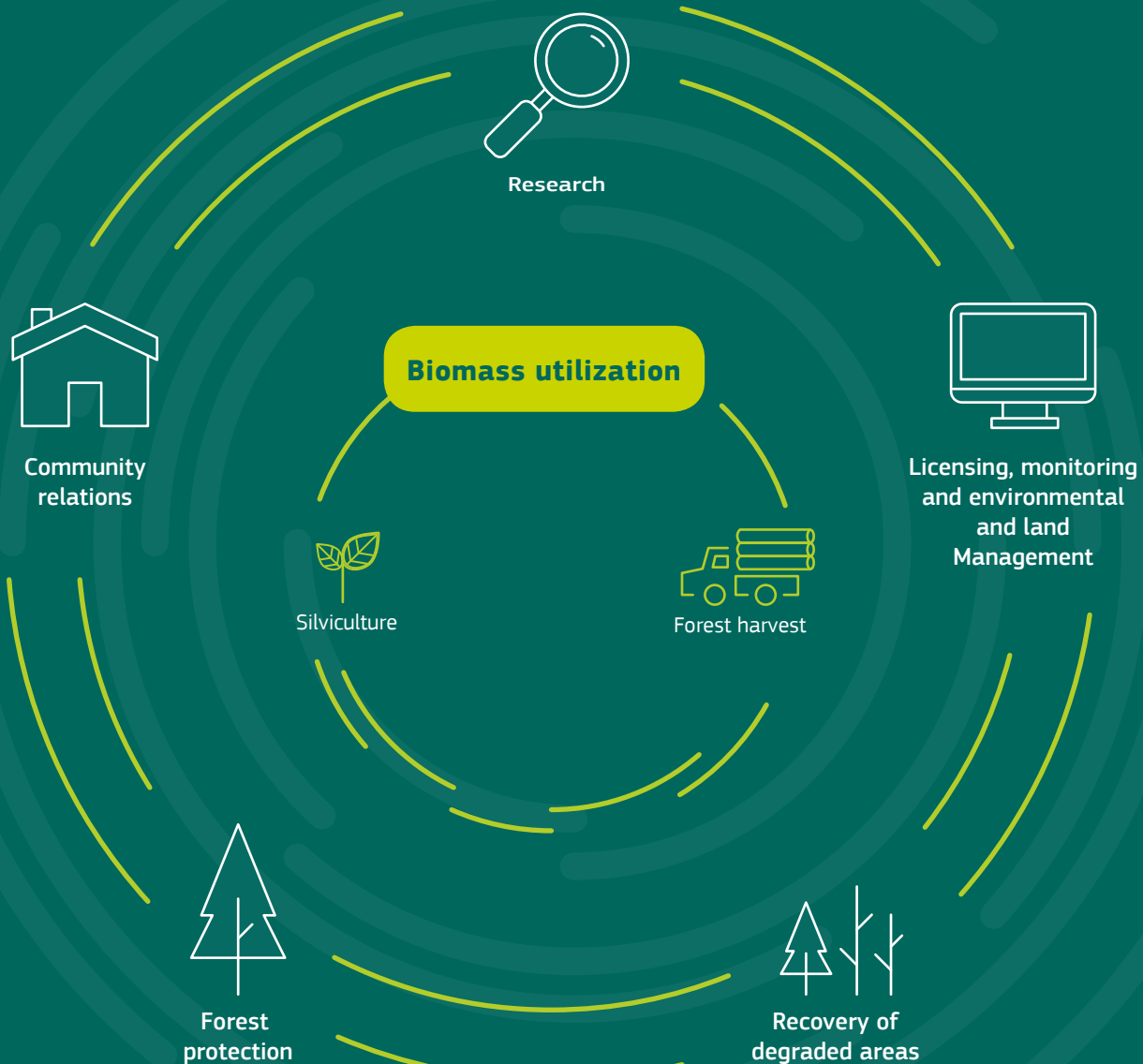
(102-2) The supply of Paper Unit SC - Campina da Alegria with Pinus taeda for pulp production is the main objective of forest activities in Santa Catarina. Eucalyptus biomass is introduced in the energy generation process in the Cogeneration Boiler. In the regional market, we sell reforested wood to veneer mills and sawmills.

Distributed in the municipalities of Água Doce, Catanduvas, Vargem Bonita, Ponte Serrada and Irani, the areas' total 27,946.62 hectares of own land and 2,287.63 in partnerships.

Soil use in Santa Catarina (in hectares)



(304-2)



(102-15 and 304-2) Main impacts from Santa Catarina's forest activities, products and services on biodiversity.

1 SEEDLING PRODUCTION

We advanced in obtaining own genetic material in the form of Pinus and Eucalyptus seeds. In 2018, we produced more than 2 million seedlings, 1,944,822 of Pinus and 267,121 of Eucalyptus (75% from our own seeds). The seedlings are grown for a period ranging from 8 to 12 months, until they are ready for planting. Respecting the local ecosystem, we also harvest seeds in native trees, matrices of our forests or of forest areas of the region, to cultivate seedlings in our Nursery. The seedlings of native species have the purpose of recovering degraded areas, enriching the forests in the initial stages with donations to stakeholders in the communities.

2 SOIL PREPARATION

Requires opening grooves using subsoiling techniques. This task is carried out by an outsourced company and, in the steepest areas, a specialized team manually opens pits for planting seedlings.

3 PLANTING

Our planting teams are equipped with special, ergonomically appropriate equipment designed to safely carry out the planting operation, with proper spacing between the seedlings and using correct transportation practices. In 2018, our planting totaled 955 hectares, of which 816 were Pinus and 138 were Eucalyptus.

4 FORESTRY MANAGEMENT

Requires pest control in planted areas. In the Pinus plantations the ant fighting is done 15 to 30 days before the soil preparation process. In the Eucalyptus plantation areas two pre-planting combats are made, the first one 45 days before subsoiling and the second approximately 15 days before planting. The monitoring of these

areas is done with own teams responsible for assessing the need for new combat applications according to premises defined in internal procedures. Control of pests, such as wood wasps, begins as of the fifth year after planting.

5 PATRIMONIAL STRUCTURE AND SURVEILLANCE

We have our own surveillance tower, a fire truck and specific equipment for firefighting. Additionally, our own teams persist in the goal of monitoring 119 points in our forest areas totaling 357 monthly checks. The agreement established with the Environmental Military Police of Concordia also aims at order and safety in the planted areas. For more than 10 years we have had an agreement with the Irani (SC) Volunteer Fire Department, aimed at training our teams to deal with forest occurrences. The brigade has specific hierarchies and responsibilities for its function and a schedule of mandatory trainings, linked to the goals that make up the variable compensation. In 2018, 3 fire outbreaks were registered. Two in partnership areas and one in own area, none of them caused loss in production area.

6 RESEARCH, HEALTH AND SAFETY AND ENVIRONMENT

Responsible for georeferencing activities, updating the forest registration database and forest inventory, our Forestry Planning team actively engages in silviculture and harvesting activities guiding operational and socioenvironmental impact prevention aspects. Safety culture is encouraged by the Relato de Saúde e Segurança Ocupacional e de Meio Ambiente - SSOMA (Occupational and Environmental Health and Safety Report), or simply, a tool to identify deviations and generate data to take corrective actions, minimizing risks and improving working environment conditions. It also assists in monitoring the environmental impacts generated by forest operations and in monitoring the local fauna. Since implementation of this practice, in 2014, we recorded more than 272 observed deviations in occupational health and safety that were dealt with during critical analysis meetings, while 464 field observations of animals were registered.

7 ROAD MAINTENANCE

Roads are maintained before planting and harvesting operations and / or whenever necessary for the transportation of timber and safe use of the surrounding community. Maintenance is

prioritized in areas where environmental impacts such as erosion are more critical, near permanent preservation areas (APPs) or water sources.

8 HARVEST AND TRANSPORTATION

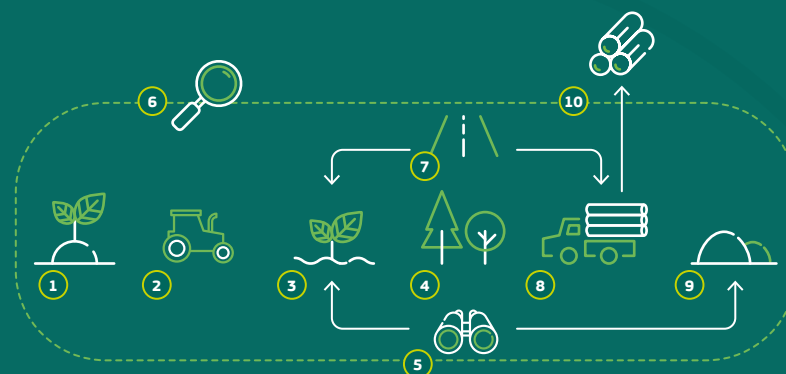
The harvest occurs when a planted area reaches 15 years. It is a mechanized process, operated by a service provider responsible for the cutting, dragging, routing and loading. The transportation is carried out by a wood and wood chip service provider for the production of biomass, a source of energy for the cogeneration boiler installed in the Vargem Bonita Units. The loglets measure between 8 cm - 28cm and are used for the production of wood chips, beginning the productive process of the Paper. In 2018, 483,768 tons of timber were sent to the process.

9 WOODCHIP PRODUCTION FOR BIOMASS

In 2017, this process was primed and comprises two fronts, the use of Pinus waste and the full use of Eucalyptus. From Pinus we used the branches, tree tips and wood remains from the process. The Eucalyptus, on the other hand, it is necessary to be cut and dried in bundles for approximately three months with intense monitoring of the humidity level of the wood until it reaches levels of excellence to be chopped in the form of wood chips for feeding the Energy Cogeneration Boiler in Vargem Bonita (SC).

10 SALES

(102-7.v) In the regional market, we resell reforested logs to lamination mills and sawmills. Logs are pieces of trunks that are over 28cm in diameter, which we sell to laminating mills and sawmills. In 2018, the sales volume was approximately 35 thousand tons.



With the acquisition of specific equipment and structures in the order of R\$ 680 thousand, we have advanced the insourcing of the eucalyptus chipping. We continued our work focusing on the energy efficiency gains of the forest raw material and performance, reducing the percentage of sawdust with the chip used for power generation and lower moisture indexes.

Investments were made in the renovation of harvesting machinery and equipment, which contributed significantly to our efforts to increase productivity, with improvements in compliance, quality, and occupational health and safety rates.

The accomplishment of two kaizens to work reutilization of Pinus chipping and maintenance of forestry exemplify some of these actions. We also evolved legalization of our landholdings certified by the Instituto Nacional de Colonização e Reforma Agrária - INCRA (National Institute of Colonization and Agrarian Reform), concluding 2018 with 90% of properties registered.



The Future We Want

- Promote the continuous improvement in compliance, quality and occupational health and safety in operations indicators.
- Start and consolidate the third shift of the own activity of chipping of Pinus waste and Eucalyptus (biomass) in the field with gains of productivity and cost reduction.
- Complete the land regularization of properties certified by INCRA.

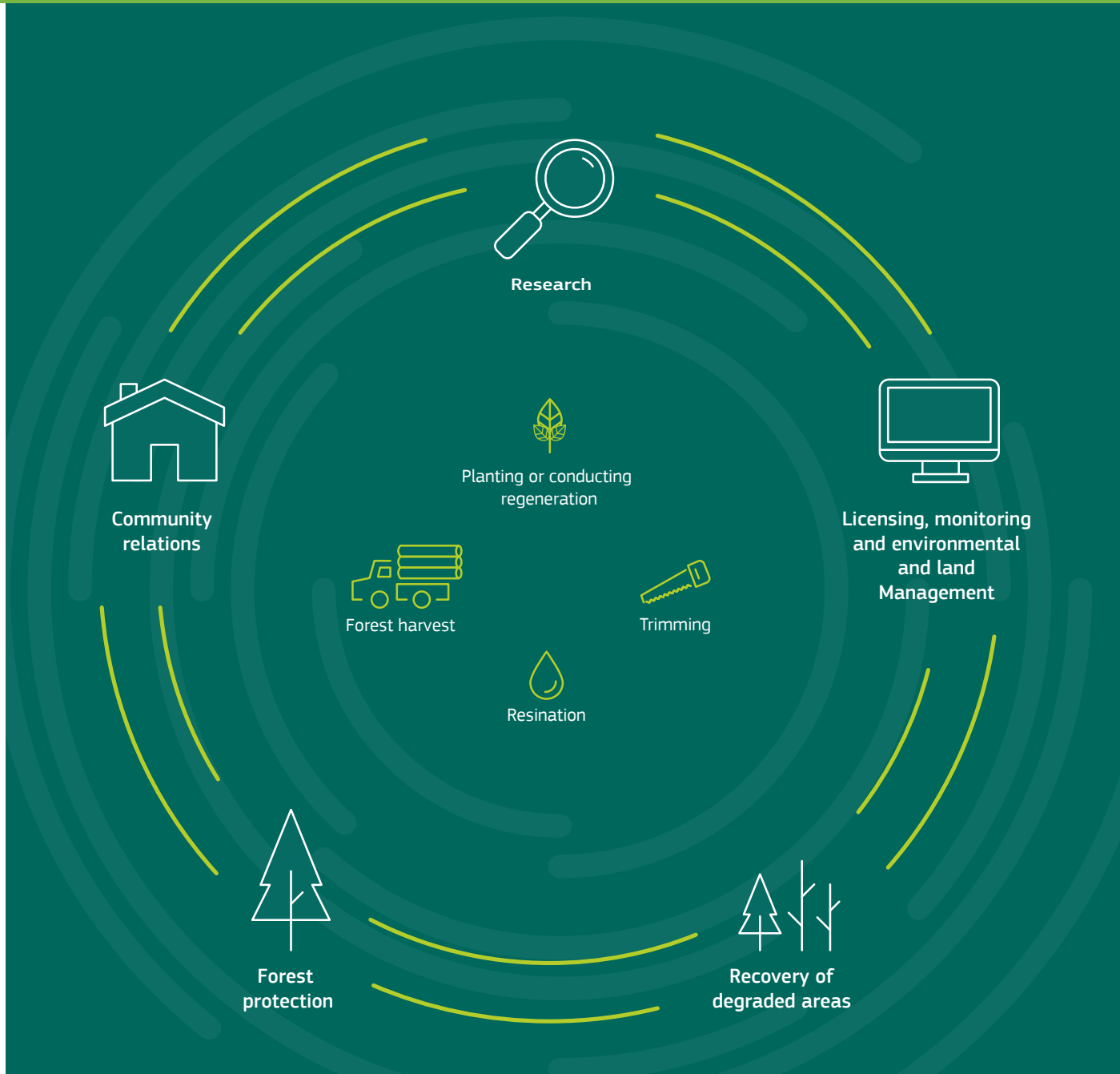
João Vitor Boherer Amorim and Gabriel Adriano Santin, employees from Corrugated Containerboard Packaging SC – Campina da Alegria unit



Forestry RS and Resin

(102-2 and 102-7.v) We are the first company to produce pitch and turpentine in Brazil and also the first company in the Resin segment to have the forest management and chain of custody certified by FSC® (FSC-C120229/FSC-C116791). We also have ISO 9001:2015 and ISO 14064:2006 certifications.

Resination is a way of anticipating a forest's revenues, generating direct jobs and contributing to convincing people to remain and work in agricultural regions. Managed for the supply of gum resin and commercialization of wood, in Rio Grande do Sul, our planted areas extend over 12 properties located in Balneário Pinhal, Cidreira, Mostardas, Tavares and São José do Norte, totaling 8,330 hectares of Pinus eliotti plantation.



(102-15)

Our management system comprises a cycle of 21 years, covering activities such as:

1 CYCLE BEGINS

We choose to regenerate the soil in a natural way or through planting when there is an occurrence of planted area loss.

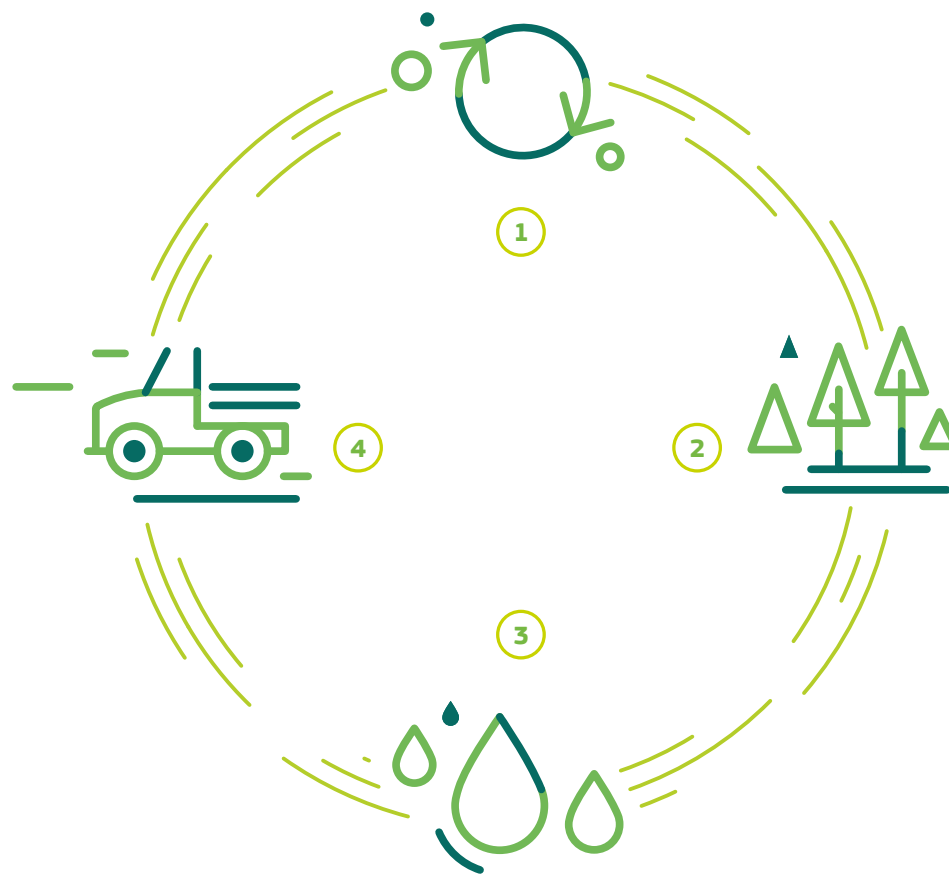
Natural regeneration: with a duration of approximately three years, demands only the periodic control of pests. Manual and mechanized selections are carried out from three to five years in order to ensure that only the best trees for the process are kept in the area marked for forestry activity.

Planting: over the course of approximately three months, we mechanically prepare the soil, planting tree seedlings for the process. In 2018, 1,121,791 seedlings were planted.

Irrespective of the type of regeneration defined by the Company, when the area reaches 10 years, trees that do not have adequate characteristics for the process are removed. The wood removed, in 2018, amounted to 19,693 tons.

2 RESINATION

The resination activity is manual. When the Pinus reaches 12 years old, we divide the trunk into faces where we open up to 72 grooves for the extraction of gum resin. This process can be carried out for up to eight years. After this period, the forest rests for 12 months. In the 2017/2018 harvest, 1.3



million trees were resinated, and in each one approximately 19 grooves were made, allowing the collection of 3,924 tons of Resin. The result was 3.4% higher than the last period, also surpassing the production record per face of Pinus, registering 2.98 kg / face.

The material collected in the forests corresponds to 26% of the demand of

the Resin Unit RS - Balneário Pinhal to be transformed into pitch and turpentine. The remaining supply comes from small producers in the neighborhood and the national market. In 2018, we launched the Quality Resin Program. In practice, this initiative measures the degree of purity of the gum resin delivered to Irani, giving the supplier a discount or increase in payment to the supplier according to the level reached.

We ended the year with 16,494 tons of gum resin received in accordance with the guidelines of the Program.

3 PROCESSING

After entering the production process, the gum resin goes through the malaxing, filtering and decanting processes. The next stage, of distillation, separates pitch from turpentine, both products of great versatility. (102-7.v) The average time of a distillation cycle is 40 minutes, in which we can produce approximately 1.1 ton of pitch and 275kg of turpentine.

Solid in consistency, the pitch is packed and has recommendation of application in products such as glues, adhesives, soaps, enamels, electrical insulators, chewing gum, waxes and expectorants. Turpentine is a liquid product stored in tanks and indicated for solvent in paints and varnishes, manufacture of dyes, waxes, disinfectants (pine oil), camphor, soaps, insecticidal greases, seals and perfume fixatives.

4 CLOSE CUT

The cut is made when the area reaches 21 years. (102-7.v) In 2018, the volume totaled 119,143 tones. This wood is traded in the regional market in the form of logs and loglets. The wood logs supply sawmills and the loglets are transformed into MDP and MDF sheets for the furniture industry.

In February 2017, a forest fire broke out in an area of 1,255 hectares in Habitasul Florestal in the city of Cidreira (RS), resulting in a negative impact on biological assets of more than R\$ 5 million. In 2018, it was possible to recover 79% of the burned area and the planting completion plan is expected to be completed in 2019. We also invested in updating our firefighting equipment, acquired a new truck for this purpose, intensified the activities of training of the emergency brigade to attend this type of occurrence and the shifts on weekends, holidays and holiday season. Our brigade is prepared to attend incidents in its own areas and to support occurrences in surrounding areas.

In 2018, 12 fire outbreaks were recorded. Three in partnership areas and nine in proprietary areas, none of them resulted in loss of production area or significant financial impacts. The mean response time was 1h27min.

We continued the projects to adapt the unit, revitalizing structures and ensuring greater safety. Three initiatives with significant impacts on the operational processes deserve to be mentioned:

- **Green belt Project** which allowed the optimization in the distillation batch cycle;
- **Installation of a new water system**, increasing the water flow and, consequently, the thermal exchange;
- **Quality Resin Program**, encouraging the suppliers to deliver us gum resin with a higher degree of purity, reducing the number of residues in this raw material.

We performed four kaizens in the Resin Unit RS - Balneário Pinhal with focus on planning and control of chemical production, forest fires, industrial maintenance and health and safety. Determined to optimize the processes and results of the chemical industry, we dedicate ourselves to the unfolding of actions with direct positive effects on the specific consumption of firewood, generated effluent volume, distillation productivity and reduced downtime.

A closer look at people and their needs has also provided improvements in working conditions, the provision of benefits and preventive follow-up of occupational diseases. We have strengthened the recognition to the people for the unit's results during end of harvest and in the presentation of the challenges of the next harvest and chemical industry. We have also continued to carry out the training for operational leadership that has been developing since 2016.

Dialogues with representatives of the local community seek to capture needs for preventive and corrective actions over time. In addition, we mapped the surrounding areas and conducted face-to-face visits recording and forwarding the identified demands.




The Future We Want

- **(Habitasul Florestal)**
- To complete, in 2019, the planting of the total area burned in 2017.
- Complete the registration of the Habitasul Florestal areas
- Reduce absenteeism rates in Habitasul Florestal
- Evolve in employee perception indices in the GPTW® Climate Survey

(Resin Unit RS – Balneário Pinhal)

- Complete adaptation projects to NRs (Regulatory Standards)
- Continue work focusing on cost reduction, productivity, profitability and market share.



Kraft paper

Paper

With a management system certified by ISO 9001: 2015 and chain of custody certified by the FSC® (FSC-C009947), we are among the leading Brazilian manufacturers of packaging papers.

(102-2 and 102-7.v)

With weights ranging from 30 and 200g/m², our virgin fiber papers are suitable for conversion into rigid or flexible packaging, while recycled paper lines are indicated for the production of boxes and corrugated sheets. Learn more about our Paper types at: <http://www.irani.com.br/en/irani/bussines-area/paper/>.

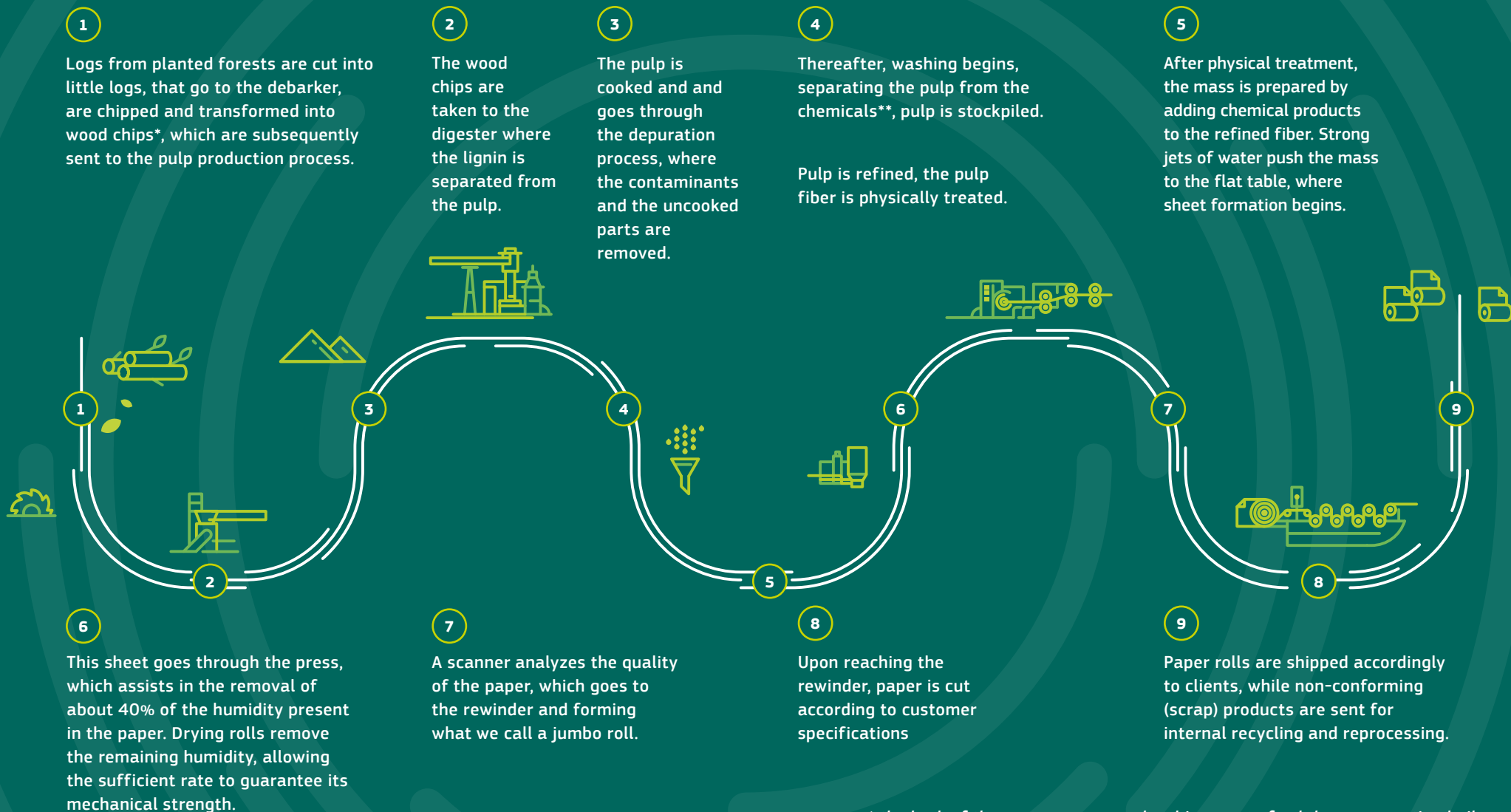
(416-1)

We offer the market a line of papers suitable for direct contact with food whose raw material is composed exclusively of virgin fiber. Inputs used in the production of these papers composed only of substances permitted by the positive list of Resolution RDC No. 88 - 6-29-2016 - Packaging and Cellulosic Equipment for Food Contact. Before proceeding with the acquisition, these inputs go through an approval process where compliance with applicable requirements is verified. Good manufacturing practices are already incorporated into the processes, avoiding the physical, chemical and/or biological contamination of the product. Constant evaluations and compliance with legal requirements, as well as compliance with applicable procedures

and instructions ensure that these products will not impact the health and safety of consumers.

To ensure that the finished products are adequate for direct contact with food, every two years, all the analyses requested by Resolutions RDC No. 88 and RDC No. 90 are performed and our ISEGA certification is revalidated.

Learn how our papers are produced



* the bark of these stages are used as biomass to feed the cogeneration boiler
** chemicals are recovered: white liquor is used for soil correction while the black liquor is chemically treated and reprocessed.

2018 was a challenging year for the paper business. The development of papers and new markets ensured good results, with a 5% increase in sales. The BagKraft line, indicated for the production of bags, followed this evolution registering a growth of 8.5% in sales and our paper specially developed for evaporative panels had its sales consolidated.

Equity and regular investments in the Paper Unit SC - Campina da Alegria had significant relevance in terms of occupational health and safety and maintained our competitiveness. We broke several records, including steam generation, plastics recycling, fiber recovery, production and productivity, and the revitalization of spaces contributed to a more pleasant environment for our employees. We also evolved with a PCH automation project with operational gains, allowing us to remotely control the plants. In Santa Luzia, in the Paper Unit MG, we also continue to invest in structural, patrimonial and process improvements, with positive effects on the safety and organizational climate.

Kaizen's weeks challenge our teams to solve problems and build solutions that allow quick results capture. In 2018, both units added nine weeks dedicated to work focused on solutions on safety, operational adjustments and standardizations, process improvements and optimizations and cost reduction.



André Paulo Martins, employee of Paper unit SC - Campina da Alegria

Corrugated Containerboard Packaging

A strict quality control and technical support from the customer focus led us to the ranking of the main industries of the packaging and corrugated sheets segment in Brazil. More than winning customers, we seek to build relationships of value. After all, to package means to embrace and to embrace is to protect.

(102-2, 102-7.v) We manufacture excellent performance corrugated boxes and sheets in kraft, white and recycled papers, single and double wall. In addition to the ISO 9001 and 14001 and FSC® certification (FSC-C009947/FSC-C125040), our three packaging units are committed to offering increasingly lower-grammage corrugated packaging with superior mechanical resistance.

In general, property and production processes improvements of the three Corrugated Containerboard Packaging units contributed to the achievement of new records, especially:

- **Corrugated Containerboard Packaging SP**
 - **Vila Maria:** Replacement of metal structures and upgrade in the transmission of the printer punch unit
- **Corrugated Containerboard Packaging SP**
 - **Indaiatuba:** sale, acquisition the adequacy of machinery and equipment and property improvements (extensions and acoustic insulation)

- **Corrugated Containerboard Packaging SC – Campina da Alegria:** replacement of compressors and BPF oil tanks

In 2018, 12 Kaizen weeks motivated our teams to evaluate and solve problems with fast results capture. Efforts were focused on topics such as customer portfolio management, production notes, scrap, machine cleaning, opportunities for operational improvements, and health and safety. We advanced in the marketing model through direct sales, building value relationships and our technical assistance celebrated the volume increase in 2018.



The Future We Want:

- **Focus on occupational health and safety policies**
- **Special attention on cost management and profitability**
- **Evolve in organizational climate management**
- **Focus on productivity**
- **Strengthen market positioning with value offerings with the customer focus**



Corrugated paper sheets

Learn how our Corrugated Containerboard Packaging are produced:

Customer-focused

This is the concept that guides our relationship. We stand side by side with our customers, so that our company is recognized as their preferred choice by offering innovative, differentiated and personalized solutions that aim at cost reduction and exceptional performance.

Papers produced by Irani and/or purchased are corrugated and glued in the Corrugator machine, converting them into sheets as specified by each client. This stage corresponds to 70% to 80% of the steam consumed in the production process



We offer the best and most suitable solutions for our customers' needs, evaluating the products to be packed, weight, measurements and the way of logistics.

From this analysis, our packaging engineering team creates a prototype, which is submitted to customer approval prior to production. We always look for lighter, sturdier boxes, ensuring higher performance and lower weight.

Palletized, the sheets can follow two paths:

shipment to the final customer of the carton segment

conversion process to be created, cut and printed and then, shipped embracing our customers' products.

Our technical assistance team monitors the process at all stages, conducting development, preventive and corrective visits.



Strategic
Direction

Strategic Direction

(102-16, 102-17 and 102-26)

Our set of mission, vision and values were reviewed by our leaders in the light of the Company's Strategic Planning for the 2018-2027 cycle. Approved by the Board of Executive Directors, they were:



Mission

Build value relationships



Vision

Be the best, most profitable, one of the best companies to work for and be among the largest paperboard and corrugated packaging companies.



Values

- Life, first of all
- Challenged and valued people
- Customer-focused
- Results-focused
- Integrity
- Cordiality
- Innovation
- Social and environmental responsibility

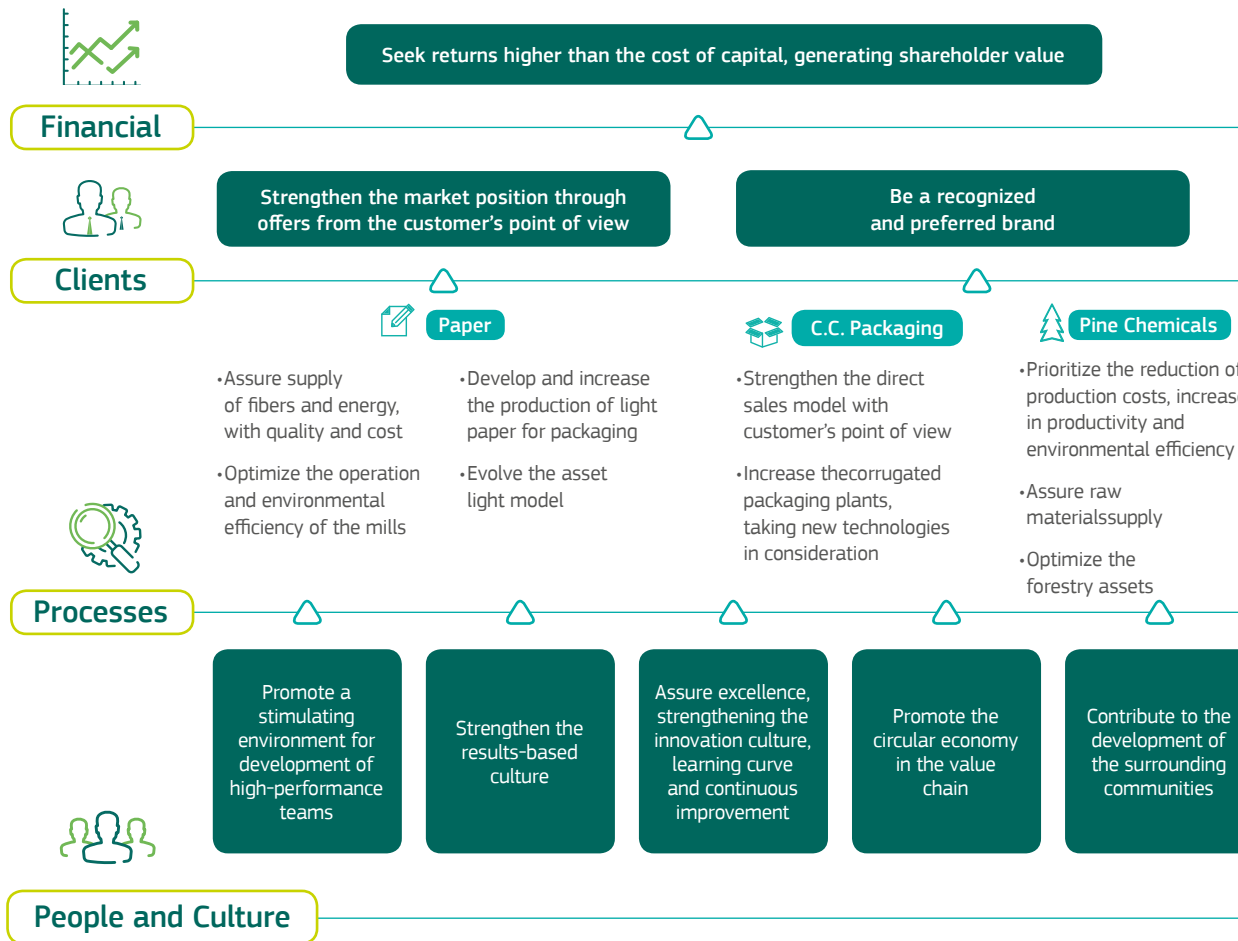


Rodrigo Paulo Martins and Edinéia Xavier Alves, employees of the Corrugated Containerboard Packaging unit SC - Campina da Alegria



New employees and representatives of the Board of Directors receive specific guidance on this subject at the time of joining the Company and sign a commitment term, reinforcing the responsibility of all in the adherence and applicability of the strategic intent.

(102-15 and 102-26) In 2018, the Board of Executive Directors was dedicated to disseminating the Strategic Planning content in all units, including the presentation of our strategic map for the current cycle.



Anderson Cezar Morais, employee of Paper unit SC - Campina da Alegria

The set that makes up our strategic intent is available for consultation for all our stakeholders on our website: <http://www.irani.com.br/en/irani/mission-vision-and-values/>, in Portuguese, English and Spanish.





Ethics and Integrity

(102-17 and 102-25)

Our Integrity Program has been structured in order to prevent, identify and remedy situations related to harmful acts committed by managers, employees and / or suppliers against public or private administration, aiming at the Company's interest or benefit, regardless of the knowledge and / or consent of its Managers or Employees.




Managers and employees: any person with statutory or employment relationship with the Company, as well as trainees and apprentices.

In line with our values, this Program is composed of eight policies and the Code of Ethical Conduct, reinforcing the need to comply with the Company's rules, applicable laws and regulations.

Revised during the structuring of the Integrity Program, the Code of Ethical Conduct is a public document that gathers the main guidelines regarding the ethical behavior that we expect from our managers and employees, essential for the construction of value relationships and for the fulfillment of our vision. The Code establishes parameters for professional conduct and supports decision-making in matters related to the Company.

In 2018, the dissemination of the content of this Program and the Code was organized in three waves, conducted by our leaders, covering all hierarchical levels. The content of the Integrity Program and Code of Ethical Conduct were made available to suppliers through contracts and e-mail communications.

The documents are available for online consultation for all stakeholders at: 



Visit: <https://bit.ly/2JEXImo>



Visit: <https://bit.ly/2UqeA4Y>

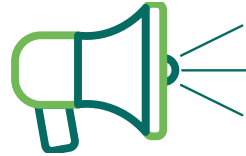
Structure

We have an Ethics Committee composed of 11 members appointed by the Board of Executive Directors who represent employees of all business units with the purpose of ensuring, training, and guiding managers and employees on the ethical conduct provided for in our Code of Ethical Conduct.

Questions and Communications 102-17

In 2018, we registered 14 communications, four of which were questions related to compliance with the Code, six of which were behavioral and four related to other matters. Of this total, 10 were identified and 4 anonymous. All queries requested from the Committee were met and those identified were given the appropriate return.

The **Manager's Guide** was used to communicate the direction of the subject coming from unidentified communications, but of interest of all the collaborators



The **Manager's Guide** is a monthly communication channel developed to support the leadership in the cascading and alignment of information at all levels of the Company, avoiding messages overlap and noise formation. Issues include permanent topics such as monitoring results and targets, market outlooks and schedule of the Board, and other topics defined at Board meetings, shared by managers through the monthly meeting.

(102-17.a.ii) At any time, our relationship publics may send communications, requests for clarification of doubts and concerns about ethical issues via:



Immediate leadership

E-mail etica@irani.com.br, automatically directed to the Ethics Committee Coordinator



CEO E-mail:
sergioribas@irani.com.br



Channel available in the Irani World (intranet), exclusive for employees, Ethics Channel link



Channel available on the website for all other audiences, available at <http://www.irani.com.br/integridade/#canal-de-etica>



The Ethics Committee coordination is responsible for filtering the communications and classifying them according to their nature.

Classification	How to deal
Behavioral	Forwarded to the People Development Management, in charge of the communication analysis and preparation of the correction plan, if applicable.
Ethic	Analyzed by the Ethics Committee, which issues an opinion and / or recommendation.
Suspected fraud	Directed to the internal audit area, which analyzes the facts and data to confirm or not the communication content.

Whenever identified, the author of the communication receives a proper return of the investigation performed. Retaliation practices to the claimant are banned and the contents are treated in a confidential and confidential manner.

It is also possible to present anonymous communications, in this case, the investigation is done, but there is no formalization of the return to the claimant.



Risk Management

(102-11) We have adopted all economically viable measures for the application of the precautionary principle. Such measures are in line with our strategic intent and are approved by the Board of Directors and Board of Executive Directors, as well as financial and sustainability policies. Our risk management is guided by ABNT ISO 31000: 2009 and by the Committee of Sponsoring Organizations of the Treadway Commission - Enterprise Risk Management Framework (COSO-ERM). The process includes identification, analysis, assessment, treatment, monitoring and risk communication.

1. Identification

With the support of the leaders, we analyze the processes in order to identify gaps in internal controls that may lead to risk factors for the business.

2. Analysis

We classify the identified gaps defining the steps for further evaluation.

3. Assessment

(102-15, 102-29, 102-30)

Using a tool that details the risk factors, we classify the impacts to the businesses arising from the possibility of materialization as operational, occupational, environmental, reputation or financial.

We then check historical and internal controls to measure the probability of occurrence of risk factors. Applicable controls and requirements by type (preventive, detective or reactive), required response (monitoring, mitigation or tolerance) and frequency of occurrence are also evaluated.

Finally, this evaluation generates an opinion by the risk manager and the Audit and Risk Management area containing qualitative weights and recommendations.

4. Treatment

Action plans are drawn based on the actions of control and interpretation of the most critical and relevant points of the evaluation performed.

5. Monitoring

Periodic monitoring evaluates the effectiveness and execution of the action plans drawn and audits are performed to validate the controls in use.

6. Risk Communication

(102-15, 102-30) An annual report is produced by the Audit and Risk Management area, compiling the work carried out throughout the year. The area and the risk manager discuss their content with the Board of Executive Directors and discuss the combinations of activities arising from the action plans.



Operational impact

Production downtime

Occupational impact

Impairment to the health and safety of direct employees or service providers

Environmental impact

Possible damages to the environment

Reputation impact

Damage the Company's image to stakeholders

Financial impact

Monetary losses or loss of opportunities to enjoy financial advantages.

(102-15) The main risks identified in our business are:

Risco	Definição	Formas de mitigação
Strategic	Inability to recognize factors related to changes in the political and economic scenario, such as the instability of the world economy.	Periodically, we prepare a long-term strategic plan with evaluation of different scenarios, allowing effective responses to events. The increase in competition is also monitored through a market scenario analysis, observing the growth capacity of the competition and current capacity of the Brazilian and world paper and pulp sector for decision-making during the strategic planning stage.
Financial	Sales to clients with Credit limits that have been exceeded or who are in default.	Monitoring of accounts receivable. The market risks, stemming from the lack of capacity to respond effectively to unfavorable fluctuations, domestic currency liquidity, and national monetary policy swings to foment and regular the country's economic warming up are monitored and define the exchange rate and interest rate scenarios. The risk of not obtaining financial resources at accessible costs, resulting in financial losses, late payments or the interruption of projects that are strategic for the Company is monitored through mechanisms that assure the necessary funding guarantees.
Compliance	Exposure to citation by authorities stemming from failure to comply with the applicable Business regulations, both regarding legal as well as voluntary compliance on environmental legalization.	We use software that allows monitoring of the applicable environmental requirements, follow up on validity dates for the environmental licenses that have been granted by the appropriate authorities, including other mechanisms. We also apply and disseminate policies aimed at the reuse of solid waste and the reduction in effluents generation.
Operational	Related to the operating conditions of capacity and efficiency, operational continuity, product distribution within the established conditions and deadlines.	We monitor the impacts of loss of productivity, damages to assets and others through control of the conditions of our installations and equipment, carrying out preventive and predictive maintenance and conducting emergency management to control fires in our installations and forests. Regarding client relations, in order to meet their requirements, we have put a strict quality control process for end products and an after-sale monitoring system into effect, from the customer's point of view. We have improved and treated the way we relate to people, instituting controls to prevent and guarantee employees' health and safety in the execution of their activities while evaluating their effectiveness.



(102-30) An internal audit plan contemplating the priority actions for verification of internal controls based on risks is annually submit to the Board of Executive Directors for approval.

In 2018, legal compliance audits were conducted across all Corrugated Containerboard Packaging business units and in the People Development area focusing on personnel management routines and developed a revenue-focused work of the Paper

and Corrugated Containerboard Packaging business. Among the initiatives carried out during the year, we also highlight the analysis of our proxies seeking to assess the delegated powers, weaknesses of the documents and the necessary adjustments and voluntary advice provided to the Irani controlling group for the creation of an Integrity Program.



The Future We Want:

- To present, in 2019, four reports to the Board of Executive Directors, one of risk assessment and three of risk monitoring.



*Anderson Cezar Morais
and Neila Catarina Bertoldi,
employees from Corrugated Containerboard
Packaging unit SC - Campina da Alegria*

Excellence, innovation and continuous improvement

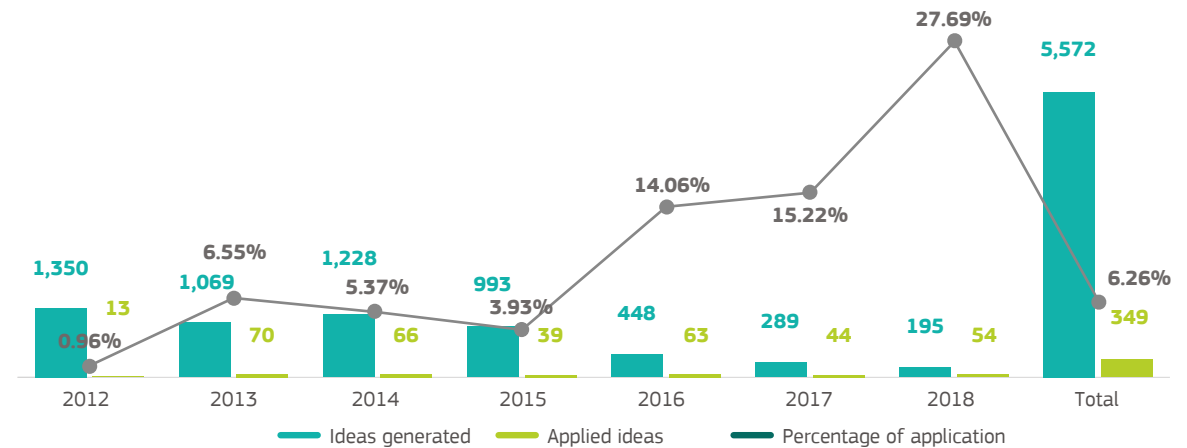
Ensuring excellence, strengthening the innovation, learning and continuous improvement culture is a strategic commitment. Therefore, we have improved our management system by adding methodologies and practices that contribute to the achievement of superior results.

The adoption of the Management Excellence Model (MEG®) of the National Quality Foundation (FNQ) challenges us to maintain a multidisciplinary look at our practices, engaging the Company's various hierarchical levels in the definition of control and monitoring tools. Annually, we conduct an assessment to determine the adherence of our practices and the results of our performance based on the fundamentals of MEG®, seeking to identify improvement opportunities. In 2018, the result of this evaluation allowed us to be recognized with the Silver trophy and the Industry Highlight trophy in the 23rd edition of the RS Quality Award, promoted by the Gaúcho Quality and Productivity Program.

Innovation management, in turn, is based on the Euvaldo Lodi Institute (IEL) model, an organization linked to the Federation of Industries of the State of Santa Catarina (FIESC) to support the development of competitiveness and innovation in the state. In order to evaluate how we have evolved in this respect, we carry out diagnoses and participate in initiatives such as the National Innovation Award (PNI) and the PGQP Innovation Award, for which we are awarded in 2018.

Programa Inova Ideias (Innovate Ideas Program)

Especially consolidated through the Programa Inova Ideias (Innovate Ideas Program), the innovation culture encourages employees to contribute to the generation of value for the Company through the presentation and application of ideas. Since the beginning of the Program, 5,572 ideas were presented and 349 applied, of which 243 brought qualitative and 106 quantitative gains.



Challenged and valued people is one of our values that we enforce through Programa Inova Ideias (Innovate Ideas Program). Therefore, according to the score achieved in this Program, our employees can be rewarded with travel or even with a payment of a percentage of the operational result of the applied ideas. In 2018, this amount reached R\$ 12 thousand and, in 2017, R\$ 86 thousand.

Open innovation has also been connecting our demands to the solutions available in the market. With the support of the French institute Center Technique du Papier, we will start a research focused on increasing the mechanical resistance of our papers.



*Ramon Jacinto Junior,
employee from Corrugated
Containerboard
Packaging unit SC
- Campina da Alegria*

>

We signed an unprecedented technical cooperation agreement with the Universidade do Oeste de Santa Catarina (Unoesc) aiming to develop, within two years, an equipment through which we can precisely define the force to be applied in the formation of creases in Corrugated paper sheets.

The fast and accurate counting of sheets is the subject of another open innovation project. Using computer vision technology, the initiative proposed the development of an equipment that seeks to meet exactly the requests of our customers. The prototype tests were carried out in 2018 and the equipment is being perfected until the definitive implantation and use in the industrial environment foreseen for 2019.

We also signed a partnership with the Design Management Center (NGD), integrated with the Design and Usability Laboratory (LDU) of the Universidade Federal da Santa Catarina (UFSC) with the objective of experimenting with new ideas focused on sustainable packaging design, joining the Company's knowledge with the great creative potential of the academic group. To that end, we defined and presented the chosen themes and taught a course on corrugated packaging, clarifying everything from the manufacturing process of the material to the products' development. Periodic mentoring has also been offered to support academics in formatting solution proposals that, if commercially viable, will be able to go into production and compose our product portfolio.

(102-44) We launched two technological challenges through the iTEC Platform in partnership with Sebrae / RS: the recycling of mixed plastic and the mechanization of gum resin extraction. This initiative promoted meetings between the Company and the startups interested in offering us solutions. The proposals were presented at the Anpei Innovation Conference in 2018, and startups had the opportunity to conduct on-site visits to better understand each demand, and to rely on the constant monitoring of the technical professionals responsible for the challenges. The final presentation of the proposals took place during an industrial innovation fair, Mercopar, and the negotiations are aimed at closing effective partnerships with a focus on the implementation of the solution most suited to our needs.

We have advanced in the definition of a policy that disposes in relation to intellectual property that will be validated and disseminated in 2019.



The institution of the Innovation Committee, composed of the Board of Executive Directors and the Business Managers, also in 2018, gives even more shape to the management of innovation in the Company from the restructuring of the platforms and the definition of priority lines of research:



Forestry and Resin

- Genetic improvement of Pinus
- Pinus Br. Productivity program.
- Genetic improvement of Eucalyptus
- Forest monitoring system
- Development of the Pitch Stabilization Process



Pulp and Paper

- High strength paper for packaging
- New process technologies
- Smart papers for packaging
- New segments



Corrugated Cardboard

- E-commerce segment
 - Industrial process technology: Sheet counter Crease quality meter
- Develop packaging that increase products' shelf life

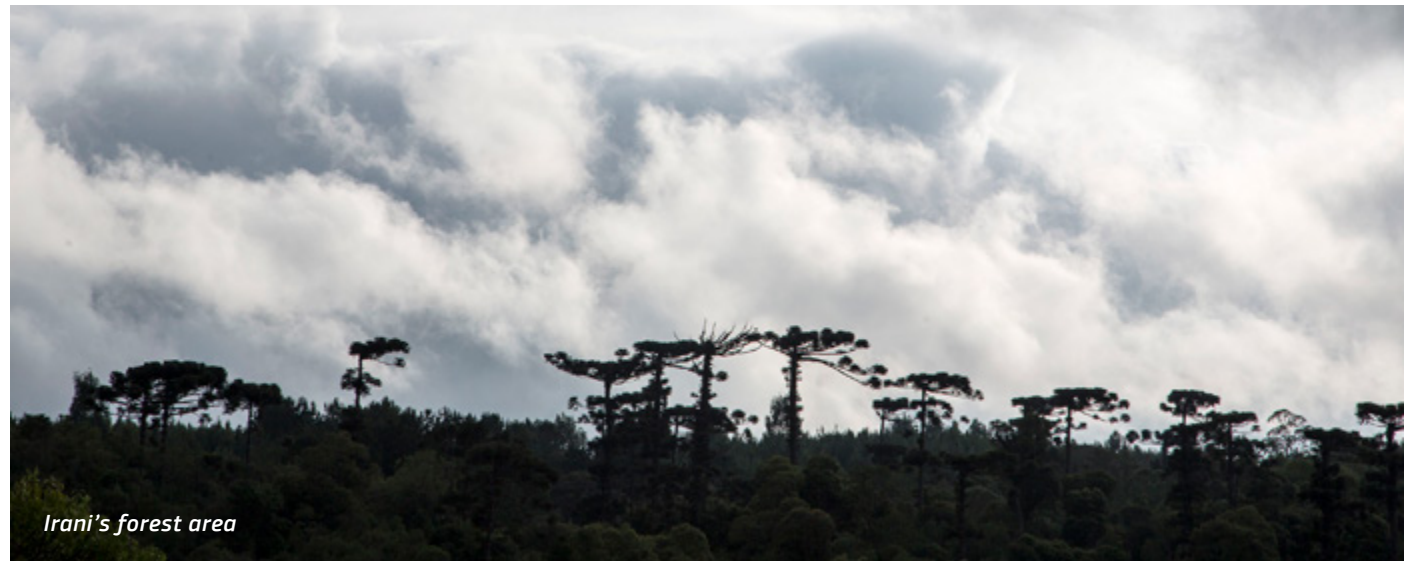


Environmental and energy

- Water and effluents
- Atmospheric emissions
- Solid wastes
- Biofuel
- New sources of renewable energy
- Energy efficiency

Inspired by the lean manufacturing philosophy our efforts in continuous improvement of operational and management processes has positive effects.

The **Programa MAIS (PLUS Program)** is a gear for implementing operational improvements and best practices, with lean philosophy tools like Daily Accounting, 5S, Kaizen Weeks, Training and Belts Projects. In 2018, the following practices stood out:



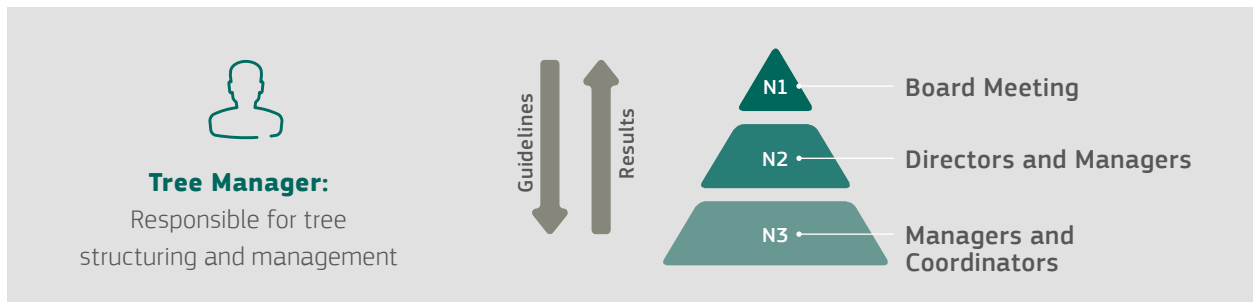
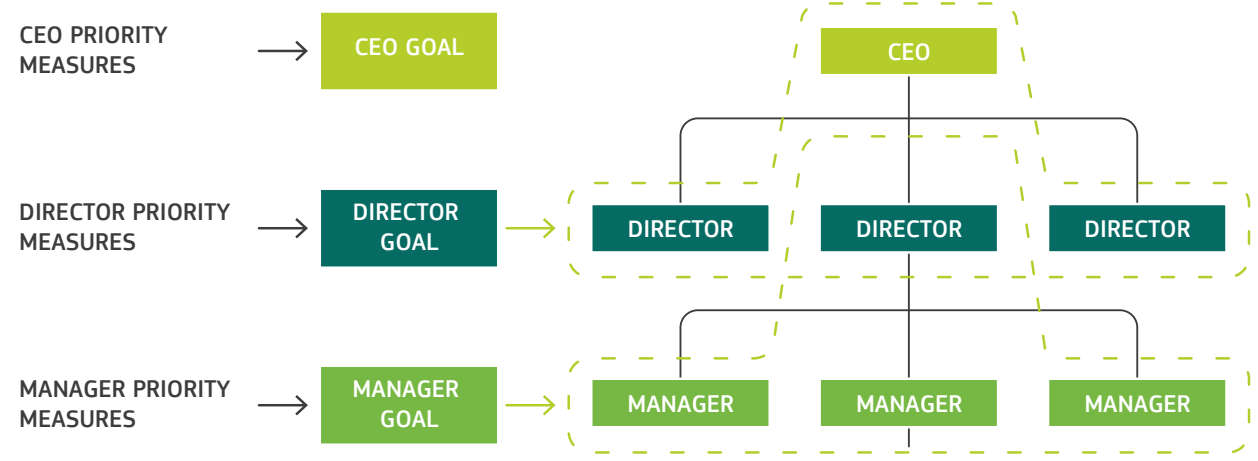
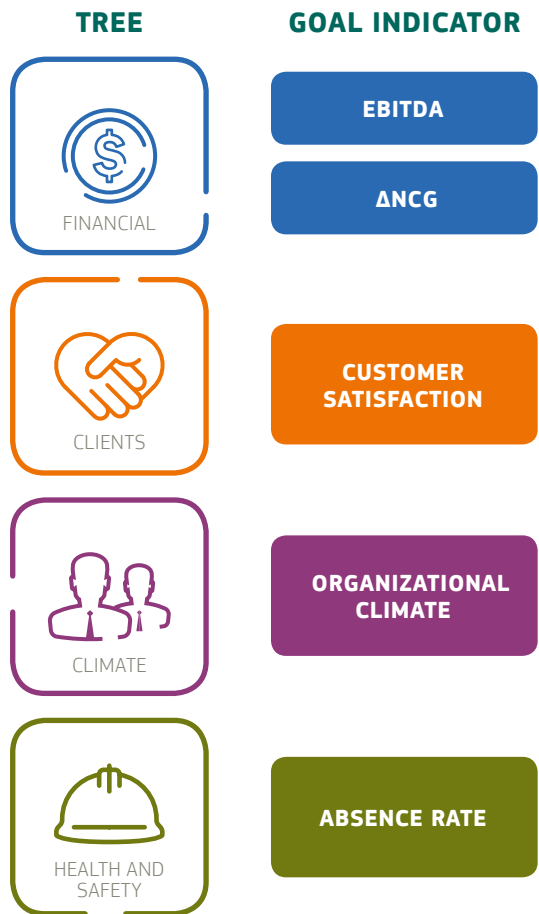
Irani's forest area

Goal and indicators setting

(303-1)

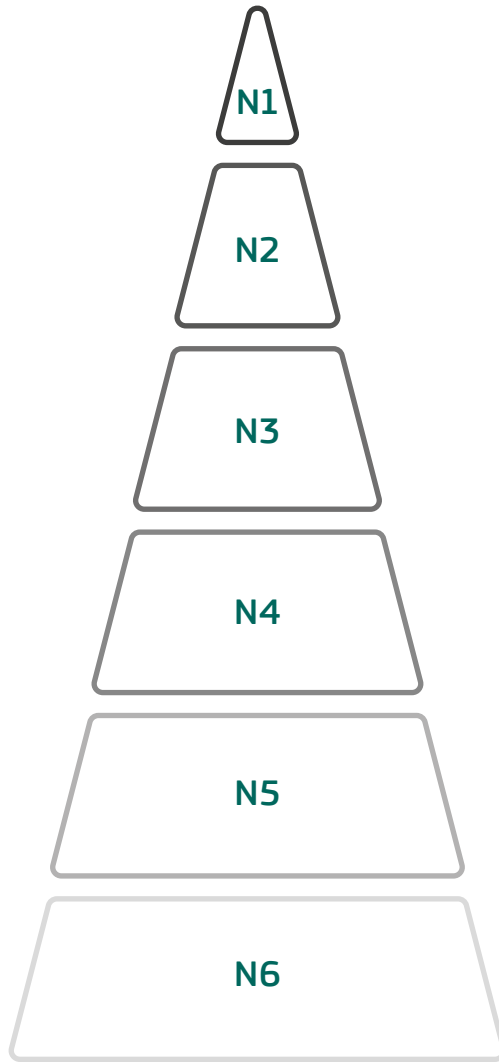
To provide more solidity to the process to achieve our strategy, ensuring an even more qualified management focused on reaching the annual goal, this work involved the CEO, Board and Managers in the creation of trees reflecting strategic indicators accompanied monthly. (102-35) Indirectly, this practice is tied to the variable compensation of the Board, defined based on the Company's results.

Methodology and Governance





The accomplishment of the goals is a commitment of all the hierarchical levels and counts with support of the Continuous Improvement Team to monitor the performances.



Each month, the Executive Board discusses the units' results and the evolution in expenses management by packages.

Monthly, the Business Director evaluates the unit's expenses packages, and global indicators, as well as consumption and prices.

Daily or biweekly, unit expense package managers report to the unit manager the overall indicators, major anomalies and action taken.

Daily, superintendent and business manager evaluate operational indicators and chronic anomalies.

On a daily basis, managers and coordinators analyze operational indicators, treated anomalies and the need for leadership assistance.

On a daily basis, operators perform productive activities and feed internal controls.

Revenue management

With external consulting support, we have improved the business management of the Corrugated Containerboard Packaging business. Throughout 2018, the project presented a financial return in the order of R\$ 7.3 million, nearly 50% higher than the target projected for the period. The main results captured during 2018 were:

- Defined, revised and disseminated trade policies
- Structured management systematics
- Definition and refining of process indicators
- Commercial team training
- Structured business routine



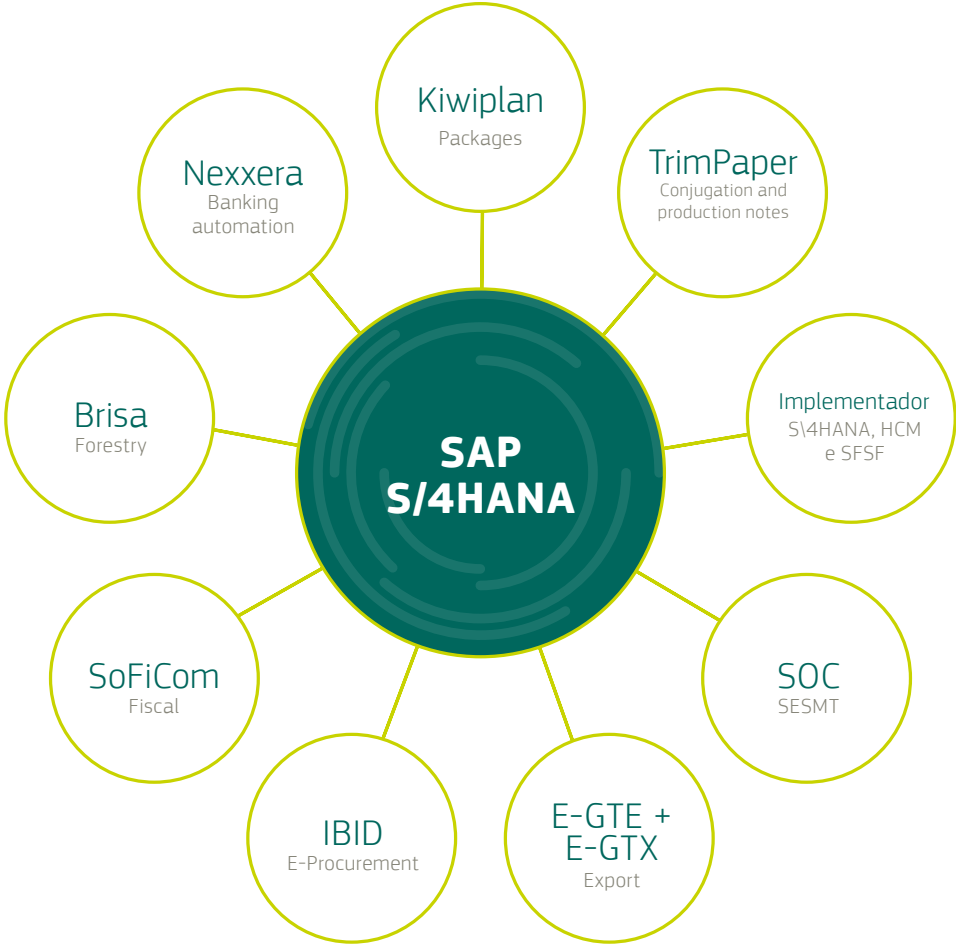
The Future We Want:

- Review the compensation model and resume Culture of Innovation actions
- Focus even more on open innovation projects compatible with the needs of our business
- Perform Lean maturity diagnosis

The Simplify Project

It carries the purpose of deploying SAP S / 4HANA technology as the main ERP as well as expert systems to simplify and integrate our management systems seeking productivity gains, information security, cost reduction, competitiveness and support for the Company's planned growth.

Digital Transformation at Irani



The project's governance was defined with the objective of ensuring the deliberate evolution in all processes, technology, people and management, as well as taking advantage of the moment and power of digital transformation to do what we like in a simpler and faster way.

We rely on the performance of a team structured and dedicated to the management of organizational change with a look at people. Therefore, the change, instead of impacting people, is driven by them.

In order to make the learning process more intuitive, users had the SAP Enable Now tool, which made it possible to provide complete materials for more than 100 courses, including videos, exercises, tests and simulations that assist them in the execution of their routines.

Built according to the Activate methodology, seeking the application of best practices in all our processes, the Simplify Project is divided into two waves, the first in 2018, focused on the operation of the business, and the second in 2019, with a more tactical and strategic concept.



Highlights of the Simplify Project first wave:

- We performed three **test cycles**
- **More than 120 people involved** between direct employees and external consultants
- Execution of the project in **12 months**
- More than 650 simulated scenarios covering more than **10,000 steps tested**
- **88% end users were trained** before going live
- More than **5000 hours of classroom training** with **91% success**

The successful **go live** of the first wave occurred in January 2019.

Corporate Governance

(102-20) We have adopted a governance structure guided by transparency and our set of values, as well as the best practices of relationship with our shareholders and other stakeholders.

(102-19, 102-20 and 102-25) We also have corporate policies that govern decisions of the controlling shareholder, resolutions of the General Meeting or of the management bodies, and restrictions for the negotiations with our shares in certain periods.

- Policy of Disclosure And Use of Information, available at: <http://www.irani.com.br/en/ir/corporate-governance/policy-of-disclosure-and-use-of-information/>
- Policy For Trading of Securities: <http://www.irani.com.br/en/ir/corporate-governance/policy-for-trading-of-securities/>

(102-25) For stakeholder transactions, we are guided by practices and market values and existing business operations, respecting the regulations applicable to each subject.







Corporate Structure

(102-18)

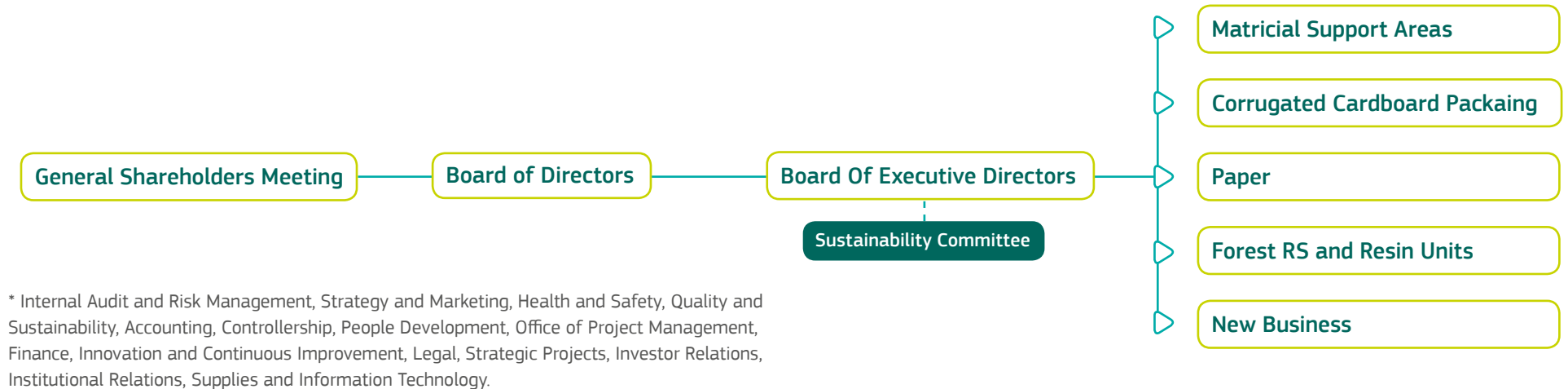
At December 31, 2018, our capital stock totaled 161,894,847.81, divided into 166,720,235 shares, of which 92 % were common (ON: R\$ 2,95 share) and 8% preferred (PN: R\$ 2,90 share).

Shareholders	Common shares	%	Preferred shares	%	Total shares	%
Irani Participações S.A.	93,348,807	60.65%	5,375,080	41.96%	98,723,887	59.22%
Habitasul Des. Imobiliários S.A.	25,660,740	16.67%	2,019,020	15.76%	27,679,760	16.60%
Cia Habitasul de Participações	19,888,540	12.92%	1,188,560	9.28%	21,077,100	12.64%
Treasury stock	24,000	0.02%	2,352,100	18.36%	2,376,100	1.43%
Shares owned by executive officers	1,124,067	0.73%	711,060	5.55%	1,835,127	1.10%
Free float shares	13,863,821	9.01%	1,164,440	9.09%	15,028,261	9.01%
TOTAL SHARES	153,909,975	100%	12,810,260	100%	166,720,235	100%

Governance Structure (102-18, 102-18a and 102-18b)

 SEGMENT	 TAG ALONG ¹	 DIVIDEND DISTRIBUTION	 BOARD OF DIRECTORS	 BOARD OF EXECUTIVE DIRECTORS	 ANNUALEVENTS CALENDAR
Basic, listed on B3 since 1977.	(102-25) 100 % for common and preferred shares.	25% of adjusted net profits and in equality of conditions for both common and preferred shares. (102-25)	(102-22 and 102-24) 5 members elected pela Shareholders Meeting, with unified term of office of two years, re-election permitted. 20% are independent members, with Shareholder representation (controlling block). Non-executive function.	5 members elected by the Administrative Council (102-23) No accumulation of positions between the CEO and the Chairman of the Board. Unified term of office of two years, re-election permitted. Executive function.	Annual publication since 2011.

¹ Mechanism provided for in the Corporation Law with the purpose of giving minority shareholders greater guarantees in case of a change in the Company's control.



General Shareholders Meeting

(102-18)



GENERAL

Held in the first four months of each year for examination, discussion and voting of financial statements, resolution on the allocation of net income for the previous year and distribution of dividends, in addition to the election of the members of the Board of Directors.



EXTRAORDINARY

Held whenever necessary, for discussion of important subjects, pursuant to the Company's Bylaws.



GENERAL SHAREHOLDERS MEETING

Respecting our Bylaws and the Brazilian Corporations Law, are held at our headquarters, in Porto Alegre (RS), by ordinary or extraordinary call notice.

Assignments:

- **Deliberative function**
- **Approves the management accounts**
- **Determines the allocation of profits and dividends**
- **Election of Directors**

In 2018, for the first time, we establish distance voting at an ordinary general meeting.

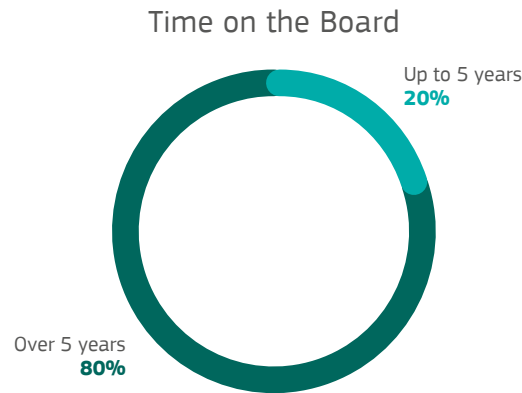
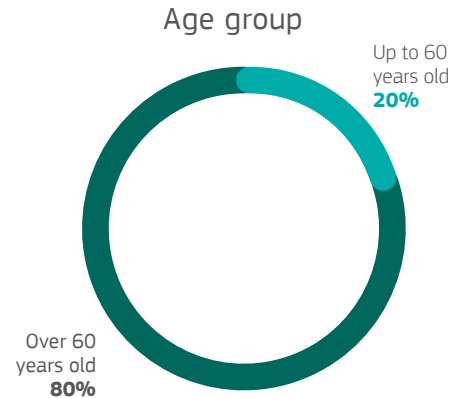


Board of Directors

(102-22 and 102-29)

Each month, it discusses strategic issues such as our Corporate Policies, market relations, investments and business risks. It is also responsible for the periodic evaluation of our management, recognized and widely disclosed in the Financial Statements (quarterly and annual). Its attributions are set forth in Article 12 of the Bylaws, among them:

- Deliberative function
- Election of the Executive Board
- Executive Board management supervision
- Allocation of the Executive Board compensation
- Call for general meetings



Board of Directors



PÉRICLES PEREIRA DRUCK

Chairman

[See curriculum](#)



EURITO DE FREITAS DRUCK

Board Member

Term Office: April 2017 – April 2019

[See curriculum](#)



PAULO SÉRGIO VIANA MALLMANN

Board Member

Term Office: April 2017 – April 2019

[See curriculum](#)



PAULO ISERHARD

Independent Board Member

Term Office: April 2017 – April 2019

[See curriculum](#)



ROBERTO FALDINI

Independent Board Member

Term Office: June/2018 – April/2019

[See curriculum](#)

(102-23) Note 1: The Chairman of the Board of Directors does not have executive function in the Company.

(102-25) Nota 2: Note 2: Representatives of Irani's Board of Directors also participate in the boards of the subsidiaries Habitasul Florestal S.A. (two members) and HGE - Geração de Energia Sustentável S.A. (two members). Elected by the shareholder members, our Board members also participate in the Board of Directors of the Irani Geração de Energia Sustentável Ltda. and Iraflor - Comércio de Madeiras Ltda.

(102-18b, 102-19, 102-20, 102-29, 102-31 and 102-32) The review of the relevant sustainability issues accompanies the review of the Company’s Strategic Planning. In 2018, we structured the Sustainability Committee to strengthen and ensure the evolution of the theme in our business, involving the leaders in this process.

Sustainability Committee



Assignments

- Ensure the evolution of the theme and the strategic alignment.
- Support the Priority Topics (Materiality Matrix) definition process.
- Support the prioritization of Environmental and Social Investments.
- Follow the Sustainability (RS) indicators and ensure the commitments.
- Approve the Annual Sustainability Report.
- Look after the Social and Environmental Responsibility Policies.

 Responsible for organization and technical support. Preparation, acquisition of studies, preparation of presentations and contents to support the meetings of the Committee.

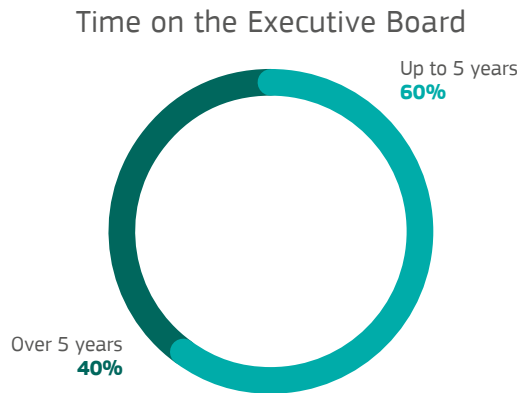
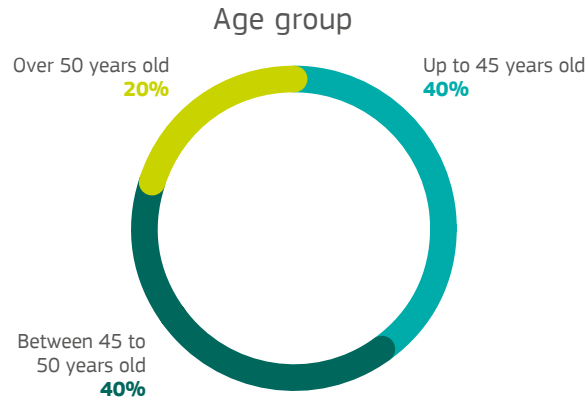
Board of Executive Officer

(102-19, 102-20, 102-29, 1012-30 and 102-31)

Responsible for providing guidelines and validating our Company’s strategic intent, policies, goals, among other economic and socio-environmental topics. with the support of his/her teams, is responsible for implementing project decisions, budget reviews, prioritization of needs, and implementation of controls and organizational changes, pursuant to Article 14 of our Bylaws, among them:

- Executive function
- Company’s representation to the market and stakeholders
- Liability for financial statements

(102-13, and 102-27) With expertise in economic and socio-environmental aspects, according to their area of expertise, members of the Board of Directors, Board of Executive Directors and Sustainability Committee improve on this theme with constant participation in external events, class associations and representative entities.



Board of Executive Officers



SÉRGIO LUIZ COTRIM RIBAS
CEO

Term Office: April 2017 – April 2019

[See curriculum](#)



ODIVAN CARLOS CARGININ
Administration, Finance and Investor Relations officer

Term Office: April 2017 – April 2019

[See curriculum](#)



FABIANO ALVES OLIVEIRA
Personnel, Strategy and Management Officer

Term Office: December/2017 – April/2019

[See curriculum](#)



LINDOMAR LIMA
Corrugated Containerboard Packaging Business Officer

Term Office: December/2017 – April/2019

[See curriculum](#)



HENRIQUE ZUGMAN
Paper and Forestry Sales officer

Term Office: December/2017 – April/2019

[See curriculum](#)

(102-33) Note: the Chief Executive Officer, supported by the Board of Executive Directors, is responsible for reporting business-critical topics to the Board of Directors during monthly meetings.

Compensation of the Board of Directors and the Board of Executive Officers

(102-35 and 102-36)

Each compensation element has a short, medium and long-term role. We seek to align managers' and shareholders' interests by stipulating guidelines to be observed regarding the compensation of the members of the Board of Directors and of the Board of Executive Directors.

Senior management's remuneration is set annually by the General Shareholders Meeting and provides for fixed compensation and fringe benefits, a quarterly variable and short-term bonus linked to pre-established goals, and long-term variable compensation, the latter through the Upside Program and/or statutorily provided for through Profit Sharing. Long-term compensation proportional to share appreciation every three years also captures these intangible assets and the economic result.



SUPERA (OVERCOME) PROGRAM

Applicable to the Board of Directors and all Irani's direct employees, the program establishes ranges of annual variable compensation according to the result of an evaluation that crosses goals achieved and individual skills developed. This assessment covers items that capture a broad sustainability vision related to the excellence culture skill.




UPSIDE PROGRAM

Tightly tied to our results, this Program premises are based on the theoretical value of the share in the year it was established and in the planned future, assigning each participant remuneration based on the theoretical amount of the shares, with a cash payout on the date of the determination and/or statutorily mandated through profit sharing.

	2016	2017	2018
Management compensation, excluding mandated social charges (in R\$ '000)	6,699	13,271	10,433

(102-35) Additional information on the compensation of executives and managers responsible for governance, including how this compensation is tied to our short, medium and long-term performance, is available on the Investor Relations website at <http://www.irani.com.br/ri/informacoes-financeiras/arquivos-cvm/>

Information: ITR, DFP and REFERENCE FORM.




REFERENCE FORM

Presents information related to conflicts of interest, cross-participation in management bodies, cross-shareholding control with suppliers and other stakeholders, existence of majority shareholder and disclosure of information on the stakeholders. We also make information available regarding significant shareholding interests (greater than 5%) down to the individual level. There is no shareholders' agreement currently in force.



Communication with the market

Our official communication channels keep the market informed about our activities and results:



Investor Relations website,
available in Portuguese and English;



Direct channel with the Investor
Relations Officer and the Investor
Relations team via ri@irani.com.br;



Contact Us tool, on the IR website;



E-mail Alert;



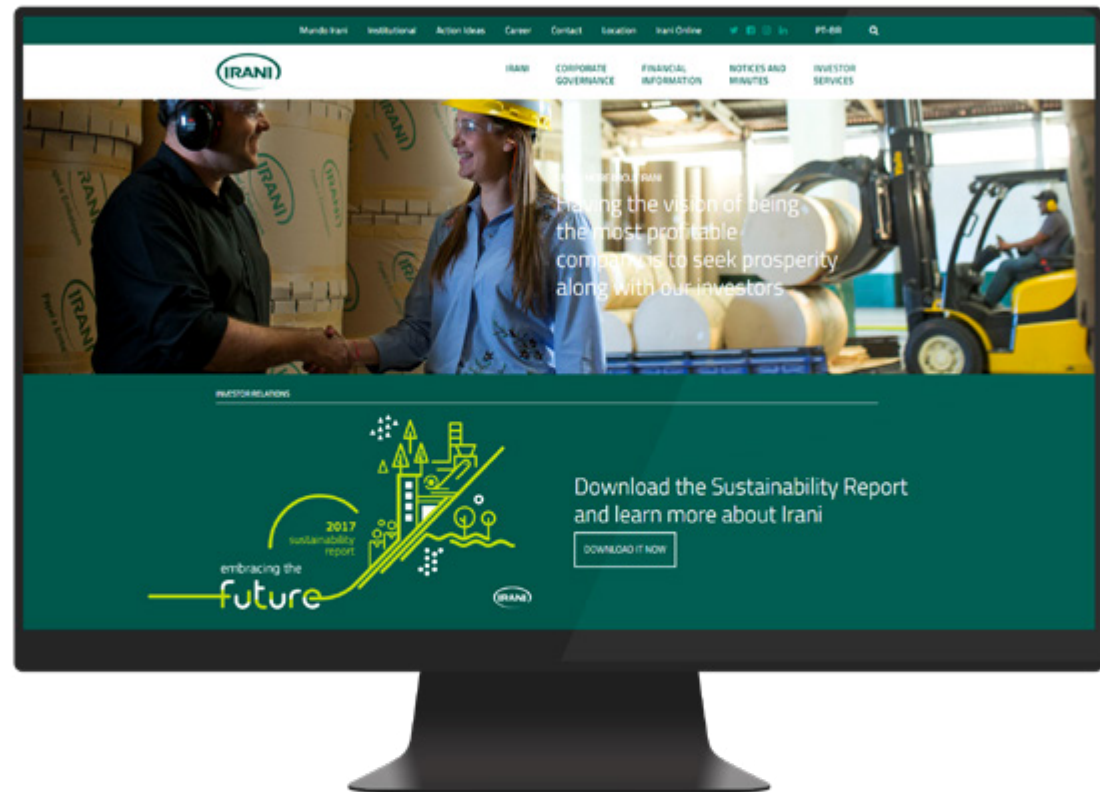
Disclosure of the Annual Financial
Statements and Quarterly
Information (ITR);



General and Extraordinary
Shareholder Meetings; and



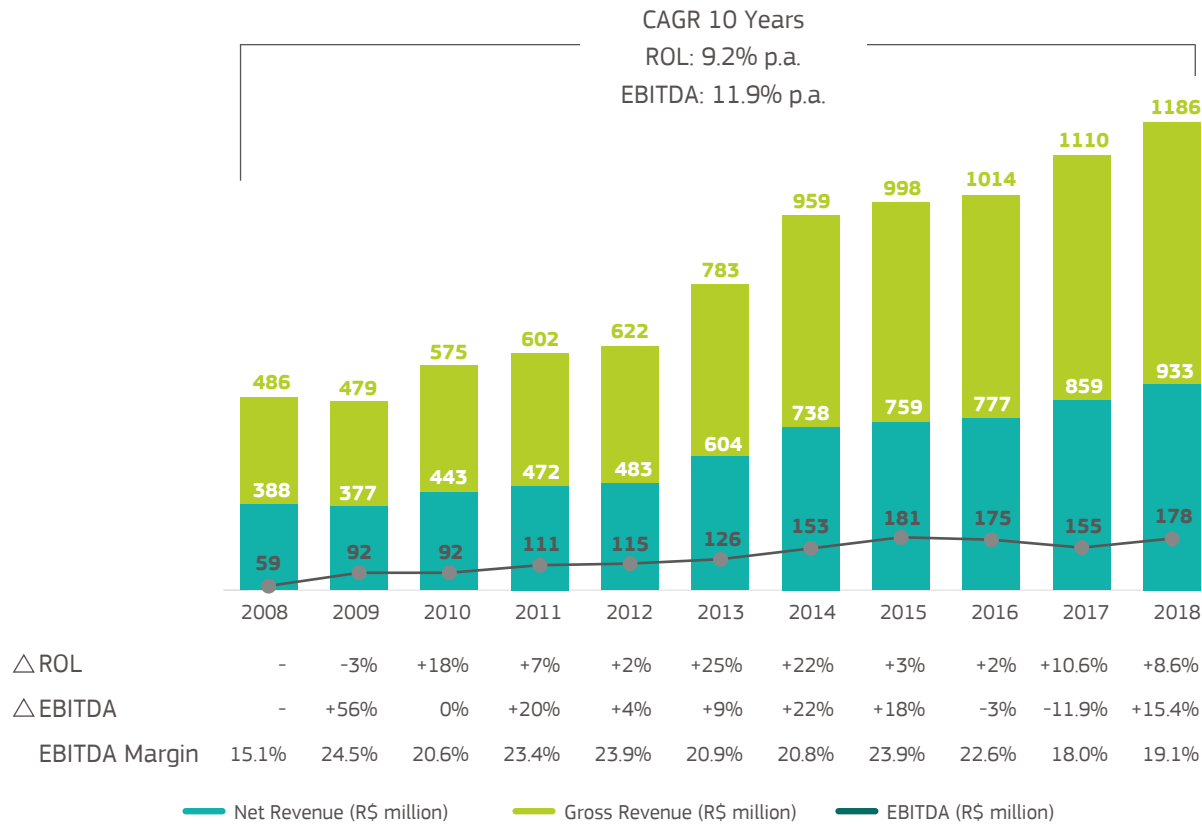
Annual Sustainability Report.





Economic and Business Performance

Our Net Revenue grew 9.2% a year over the last 10 years, as has Adjusted EBITDA, whose average annual growth was 11.9%. In this period, this indicator was R\$ 59 million in 2008, with a margin of 15.1%, rising to R\$ 178 million in 2018, with a margin of 19.1%.



Balance Sheets

(Consolidated as at December 31, in thousands of reais)

	31/12/2018	31/12/2017
ASSETS	1,526,664	1,501,839
Current Assets	386,646	345,461
Non-current assets	1,140,018	1,156,378
LIABILITIES AND SHAREHOLDERS' EQUITY	1,526,664	1,501,839
Current Assets	452,167	301,759
Non-current assets	765,329	859,359
Shareholders' equity	309,168	340,721

(102-7)

Consolidated income statements for the years ended December 31

(in thousands of reais)

	31,12,2018	31,12,2017
Net Sales Revenue	932,817	859,169
Change in fair value of the biological assets	(1,368)	(10,847)
Cost of Goods Sold	(668,334)	(622,425)
Gross Profit	263,115	225,897
Operating Revenue (Expenses)	(145,280)	(220,162)
Income before financial results and taxes	117,835	5,735
Net financial revenue (expenses)	(102,212)	(106,306)
Operating profit before tax effects	15,623	(100,571)
Net profit for the year	3,011	(108,173)

Our annual financial statements including the annual financial statements, encompassing the Explanatory Notes, the Independent Auditors' report and the Management Report are presented in full on our Investor Relations website (<http://www.irani.com.br/en/>).

The preparation of these documents respect the Corporations Law and its amendments, and the rules established by the Brazilian Securities and Exchange Commission (CVM).

Disclosure took place on March 1st, 2019 in large-circulation newspapers in which we published our corporate acts and they also were available on the CVM and the BM&FBOVESPA websites.



Main economic-financial indicators

According to the Brazilian Corrugated Cardboard Association (ABPO), the shipment in tons of corrugated paperboard in 2018 registered growth of 1.8% when compared to 2017.

Higher sales volume in the Paper for Corrugated Containerboard Packaging, Forestry RS and Resins segments, coupled with price growth in all segments above the market average, contributed to the 8.6% growth of our Revenue in 2018, in compared to the previous year.

¹ EBITDA (earnings before interest, taxes, depreciation, amortization and depletion).

² Excluding from net debt the exchange variation recorded as hedge accounting.

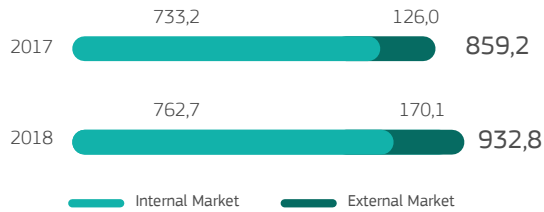
Main Indicators – Consolidated	2018	2017	Var. 2018/2017
Economic and Financial (R\$ '000)			
Net Operating Revenue	932,817	859,169	8.6%
Internal Market	762,706	733,131	4.0%
External Market	170,111	126,038	35.0%
Gross Profit (inclusive*)	263,115	225,897	16.5%
(*) Change in the Fair Value of the Biological Assets	(1,368)	(10,847)	-87.4%
Gross Margin	28.2%	26.3%	1.9p.p.
Operating Income before Taxes and participations	15,623	(100,571)	-
Operating Margin	1.7%	-11.7%	13.4p.p.
Net Income	3,011	(108,173)	-
Net Margin	0.3%	-12.6%	12.9p.p.
Adjusted EBITDA ¹	178,356	154,530	15.4%
Adjusted EBITDA Margin	19.1%	18.0%	1.1p.p.
Net Debt (R\$ million)	692,7	686,4	0.9%
Adjusted Net Debt/EBITDA (x)	3.88	4.44	-12.6%
Adjusted proforma Net Debt/EBITDA (x) ²	2.96	3.68	-19.6%
Operating Data (t)			
Corrugated Cardboard Packaging (PO)			
Production/Sales	182,310	193,256	-5.7%
Packaging Paper			
Production	279,110	289,019	-3.4%
Sales	95,959	89,072	7.7%
Forestry RS Unit and Resins			
Production	13,472	11,841	13.8%
Sales	13,155	12,000	9.6%



Net Operating Revenue

Our Net Revenue reached R\$ 932.8 million in 2018, an increase of 8.6 % compared to 2017, as a result of the better performance of foreign market revenue from the Paper for Corrugated Containerboard Packaging, Forestry RS and Resins segments. This continues to be our main market, accounting for 82 % of sales at the end of the year.

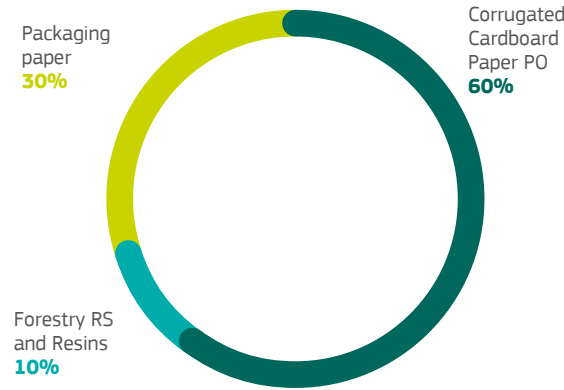
Net Revenue (R\$ million)



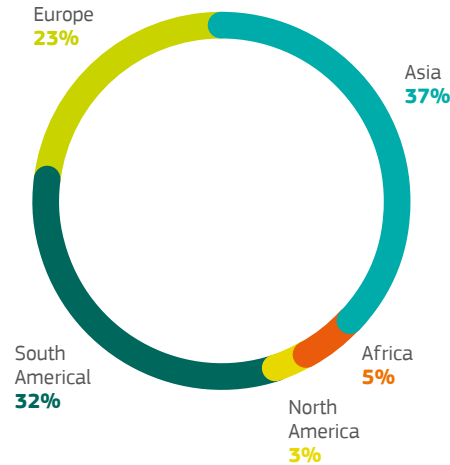
Share per market

	2017	2018
Internal market	85%	82%
External market	15%	18%

Net revenue per segment (2018)



Net revenue - Foreign market 2018



Assessment of the Fair Value of the Biological Assets (Forests)

The negative variation on resination and silviculture costs, mainly in relation to the forests located in Rio Grande do Sul, influenced the negative change in the fair value of the biological assets for the asset during the year.

Effects of the changes in the fair value of the biological assets

R\$ thousand	2018	2017
Change in fair value of the biological assets	(1,368)	(10,847)
Depletion in fair value of biological assets	(15,110)	(30,754)

As of 2010, as determined in CPC 29, we have measured the fair value of the biological assets (forests) on a regular basis. The variation of this value and its depletion is recognized in the Cost of Goods Sold (COGS) line item.

This accounting determination makes it possible to more precisely evaluate the market value of our forests, thus more appropriately representing them on our Financial Statements.



Net Income

Impacted by increased revenue and better performance in costs and expenses, additional recognition of tax provisions, losses on non-recurring receivables and non-recognition of taxes and contributions on tax loss for the year, our net income for 2018 reached R\$ 3,011 thousand of profit, when compared to 2017, when it reached R\$ 108,173 thousand negative.

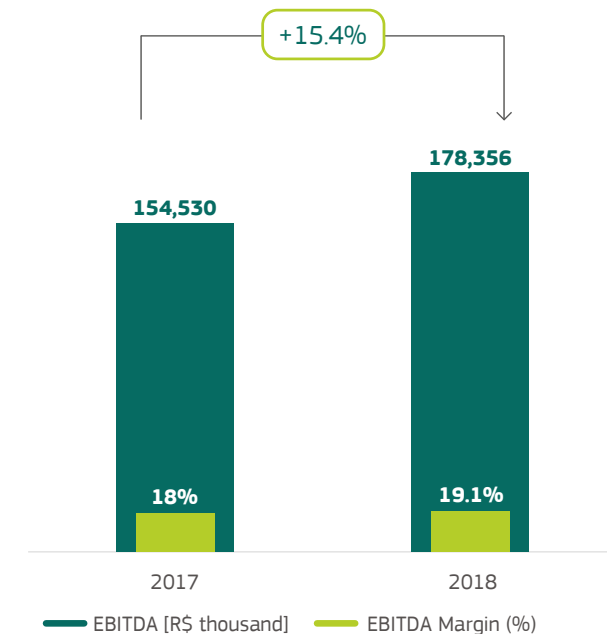
Operational Cash Generation (Adjusted EBITDA)

Consolidated (R\$ '000)	2018	2017	Change 2018/2017
Operating Income before Taxes and participations	15,623	(100,571)	-
Depletion	16,587	41,761	-60.3%
Depreciation and Amortization	52,246	53,815	-2.9%
Financial Result	102,212	106,306	-3.9%
EBITDA	186,668	101,311	84.3%
EBITDA Margin	20,0%	11,8%	8.2 p.p.
Adjustments pursuant to Inst. CVM 527/12			
Change in the fair value of the biological assets ⁽¹⁾	1,368	10,847	-87.4%
Non-recurring events ⁽²⁾	(9,680)	42,372	-122.8%
Adjusted EBITDA	178,356	154,530	15.4%
Adjusted EBITDA Margin	19.1%	18.0%	1.1 p.p.

¹ Change in the fair value of the biological assets, as it does not reflect cash reduction in the period.

² Non-recurring events: The amount of (R\$ 9,680 thousand) (2018) refers to the reversal of non-recurring tax provisions in the amount of (R\$ 11,219 thousand), reversal of non-recurring receivables (R\$ 500 thousand) and value of R \$ 2,039 thousand related to the negative result on the sale of assets as there was no recurring expense for the year.

Adjusted EBITDA for the year totaled R\$ 178.3 million, with a margin of 19.1% and was 15.4% up from 2017. The increase of 1.1 percentage points in the margin is mainly due to the better performance in revenue and costs in the period. It is important to note that the 2017 EBITDA recorded the sale of forests in the amount of R\$ 19,100 thousand, which did not occur in 2018. Excluding this sale, EBITDA increased from R\$ 135,430 thousand in 2017 to R\$ 178,356 thousand in 2018, an increase of 31.7%, reflecting a robust resumption in operating results after the economic recession period. The EBITDA for 2018 could have been higher if were it not for the negative impact of R\$ 5.6 million due to the truck drivers' strike in May.





Financial Result

Our financial result in 2018 was R\$ 102,212 thousand negative, representing a reduction of 3.9% over 2017, impacted by the exchange variation.

In the same year, the exchange variation negatively impacted our results by R\$ 5,594 thousand, mainly explained by the recognition of hedge accounting in the result, distributed as follows:

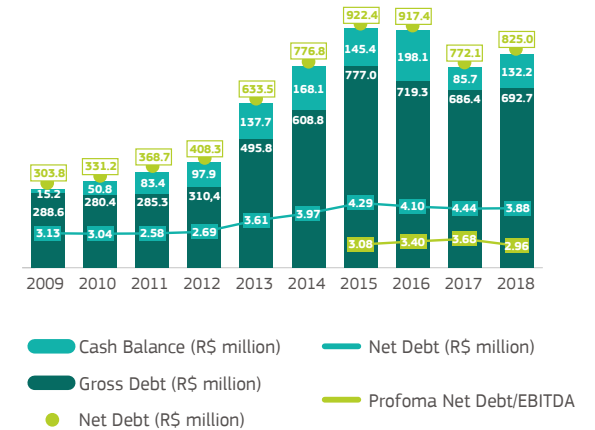
R\$ '000	2018	2017	Change 2018/2017
Financial Revenue	26,245	21,942	19.6%
Financial Expenses	(128,457)	(128,248)	0.2%
Financial Result	(102,212)	(106,306)	-3.9%
Net Exchange variation	(5,594)	(8,797)	-36.4%
Financial Result without exchange variation	(96,618)	(97,509)	-0.9%

Net Debt

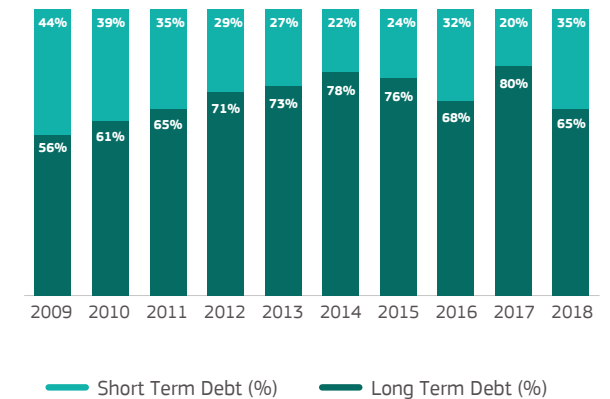
Our consolidated gross debt totaled R\$ 825.0 million in 2018, with 65 % maturing in the long-term. The consolidated cash balance totaled R\$ 132.2 million at December 31, 2018, compared to R\$ 85.7 million (including the banks' balance with linked account) in the same period of 2017. The settlement of financial operations in a volume higher than the funding and execution of investments in relation to cash generation were the main factors that impacted the cash.

As a result, our consolidated net debt in 2018 was R\$ 692.7 million, compared to R\$ 686.4 million in 2017, resulting in the net debt/EBITDA ratio increasing from 4.44x at the end of 2017 to 3.88x at the close of 2018. Excluding from net debt the exchange variation recorded as hedge accounting, the net debt/ Proforma EBITDA indicator would have been 2.96 at the end of 2018.

Debt and Net Debt/EBITDA



Gross Debt Profile





Direct economic value generated and distributed

(201-1)

We present the values regarding the wealth we generate and its distribution among the parties that contributed to the generation of this wealth, such as employees, government, financiers and shareholders, as follows:

R\$ mil	CONSOLIDATED			
	31.12.2018	%	31.12.2017	%
1. Revenue	1,200,815		1,134,067	
2. Inputs acquired from third parties	664,898		687,770	
3. Gross added value (1-2)	535,917		446,297	
4. Depreciation, amortization and exhaustion	68,833		95,576	
5. Biological asset fair value variation	(1,368)		10,847	
6. Net added value produced by the entity (3-4-5)	468,452		339,874	
7. Added value received through transfers	26,245		21,942	
8. Total added value to distribute (6+7)	494,697		361,816	
9. Distribution of Added Value				
9.1) Personnel	177,233	35.83%	169,480	46.84%
9.2) Taxes, fees and contributions	158,475	32.03%	161,640	44.67%
9.3) Compensation of third-party capital	140,108	28.32%	138,869	38.38%
9.4) Compensation of own capital	18,881	3.82%	(108,173)	-29.89%



People Strategy

People Strategy

(103-1)

In our company people are the drivers to fulfill our mission and catalysts to achieve our vision. Therefore, building high performance teams and getting people to the achieve their personal and professional potential is part of our strategy.

(103-2)

The year 2018 brought many lessons learned, the main one was to be sure that our values should be daily practiced and reinforced and perceived by the people with whom we interact inside and outside Irani. This stimulus is offered to employees through five structuring programs: Gera (Generate), Cuida (Care), Cresce (Grow), Motiva (Motivate) and Supera (Excel).

Programa Gera (Generate Program)

It has a set of processes that aims to attract, engage and follow the trajectory of Irani professionals, seeking to ensure that new employees are appropriately integrated into our organizational culture. Thus, following the whole cycle of the professional relationship, we hope that the development of people will be recognized as merit on both sides.

Recruitment and selection

Offering development conditions to our employees is a commitment of Irani. Therefore, whenever there is a new opening, internal recruitment is prioritized. After the closure of an internal recruitment opportunity, we apply an evaluation with the objective of identifying the participants' satisfaction with the process and the opportunities to improve this practice.

	2016	2017	2018
Vacancies filled by Internal Recruitment	61.90%	45.76%	59.00%

The search for market professionals through mixed or external recruitment occurs in specific cases which require differentiated experience and knowledge. All selection processes are conducted by psychologists trained to understand human behavior and application of tools for this purpose.

Gera Aprendizado (Generate Learning)

In addition to supporting our internal teams, our young people participate in learning courses at partner institutions in various areas of interest. In 2018, as a complement to this work, we launched the "My Learning", a training plan focused on personal improvement and professional orientation with modules on business behavioral posture, self-knowledge, communication, teamwork, creativity and innovation and emotional intelligence , establishing a chain of learning, training and growth. Volunteers from the Company voluntarily applied four Junior Achievement training programs for the young apprentices of the Vargem Bonita units with



a focus on entrepreneurship and career planning. In 2018, we hired 17.8% of our apprentices to take on other functions, including the Gera Talentos internship program.

Gera Talentos (Generate Talents)

In 2018, we have 41 young people completing compulsory and non-compulsory internships in technical, administrative and production areas in all business units. This audience also participates in functional follow-ups after the trial period.

One of the success factors of this initiative is the effectiveness achieved from the conclusion of the internship period registered in 14.6% in 2018 and 29.9% in 2017.

GERA Diversidade (Generate Diversity) (103-1 and 103-3)

Here at Irani, we go beyond hiring people with disabilities. In order for these people to develop to their fullest potential, we sensitize and prepare the teams that will receive them so that they understand the aspects of the employee's disability that is being integrated and learn to deal with their limitations. Mutual learning is one of the main results of this work. In 2019, we will begin a more comprehensive work on the diversity aspects aligned to our Code of Ethical Conduct, providing for the monitoring of indicators in order to increase the hiring of women and minority groups

Integration

Our integration process is the way to welcome and acculturate new employees. At the beginning of their working days, they receive information on topics related to staff administration, benefits, policies and internal programs. They also participate in visits to the industrial unit where they will carry out their activities so that they understand the end-to-end production process, as well as the applicable health and safety guidelines.

Facilitators and immediate leadership support the new employees until their full adaptation in the work area, guiding and accompanying the activities. Employees promoted to administrative or commercial leadership positions are offered a continuous integration process through which we present the main routines of people management and interfaces with other areas

Employee monitoring

Immediate managers are empowered to monitor the new employee during the work and job function adaptation process, with support our Personnel Development team whenever necessary. In addition, this team performs individualized services at the end of the experience period and after one year on the job to monitor adaptation.



Paper unit SC -
Campina da Alegria

Humanized termination

The end of the professional relationship with our employees is conducted in the most transparent and compassionate way possible, by means of individualized interviews with the objective of ascertaining the improvements in the management of people and processes that results in feedback to the immediate manager when authorized by the interviewee.

Programa Cuida (Care Program)

(103-2)

It covers a set of preventive and corrective policies, procedures and practices with the objective of ensuring adequate and safe conditions in the performance of the labor activities applicable to 100% of the employees and the usual service providers. Non-habitual service providers are provided with work permits in our premises, with criticality analysis performed by our Serviço Especializado em Engenharia de Segurança e em Medicina do Trabalho - SESMT (Specialized Team in Safety Engineering and Occupational Medicine).

In 2018, we restructured the area responsible for the management of this Program. A new management called Health, Safety, Quality and Sustainability has the challenge, together with the leaders, to ensure the strengthening of the value "Life, first of all" and our culture of health and safety in topics such as:



Communication, programs and campaigns;



Legal assistance;



Management;



Standardization and training;



Recognition and;



Penalties

While we were working on the processes restructuring and taking advantage of the subsystems synergy of this new area, two fatalities were recorded at the Paper Unit SC - Campina da Alegria involving one direct employee and one service provider. **(403-2.d)** In both cases, enforcing the Company's standard operation, the SESMT and the Comissão Interna de Prevenção de Acidentes – CIPA (Internal Commission for Accident Prevention) led the investigation of causes, adjustment in operating procedures and dissemination of guidelines, in addition to providing all the support necessary for families. **(403-2.a)** We also committed to evolve in hazard identification, risk assessment and accident investigations.

(403-1.a.ii) This fact also caused a deep dive in the other operating procedures from the occupational health and safety point of view. This initiative resulted in the description and revision of procedures and the dissemination of 100% of them in all units. This practice is performed whenever any occurrence is recorded. All procedures will be reviewed in 2019 after the implementation of the new ERP system.

(403-2.d and 403-9.d) We also strengthened the occurrences of incidents record through Diálogos de Segurança e Excelência – DSEs (Security and Excellence Dialogues), internal disclosures, employee engagement through CIPAs and leadership. We improved occupational health and safety management by implementing work permits and creating a tree of indicators reported monthly to the Board of Executive Directors in dashboard form, defining goals, accountability, and form of governance.

(403-3.a) The topic of occupational health and safety is addressed in the integration of new employees, in periodic examinations, in the dissemination of preventive campaigns, in events such as meetings with leaderships, Semana Interna de Prevenção de Acidentes de Trabalho - SIPAT (Internal Accident Prevention Week) proving the total availability of services for all employees. **(403-5)** In the last year, we have fulfilled 100% of the qualifications required by the regulatory standards applicable to our business.

(403-5) All employees and service providers involved in our forest management units in Santa Catarina shall participate in at least three hours of specific training in occupational health and safety.

(103-3, 403-8.a.iii and 403-8.c) Internal and external audits, certifications such as ISO and FSC®, in addition to the licenses granted by the competent agencies, guarantee the effectiveness of the occupational health and safety management processes while helping us to deepen the treatment of risks and in the forms of mitigating them.

(403-2.c and 403-6.a) Preventive action is continuously persisted and spread. CID-M medical certificates pass through the evaluation of the occupational physician to ascertain the need to communicate the fact to the manager, restriction or alteration of the work activity or, also, preventive leave, ensuring that the employee does not suffer any kind of reprisal.

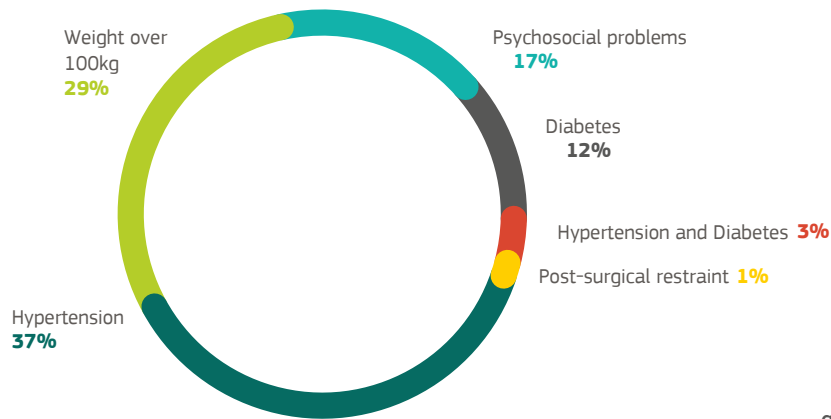


Gilson Santos and Flávio Cason, employees dedicated to the Simplify Project.

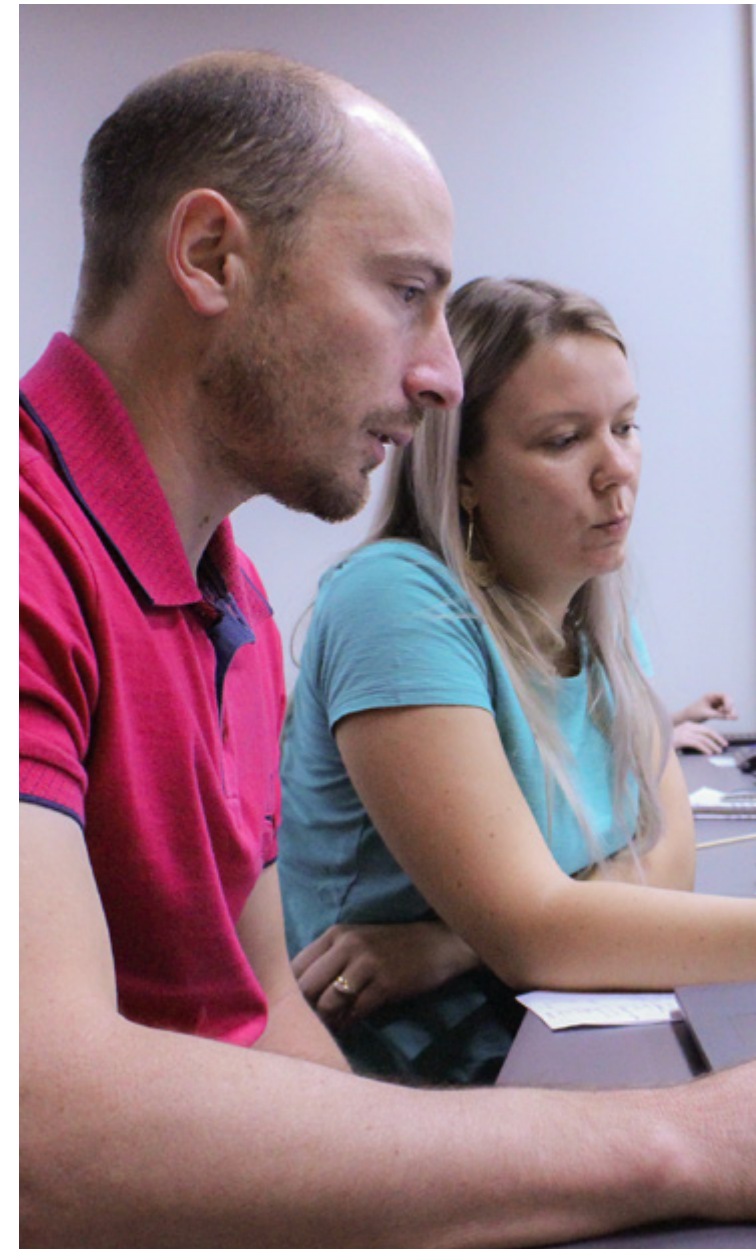
(403-1.a.i and 403-1.a.ii) For each business unit, approximately 400 laws are applied with almost 2,500 requirements related to occupational health and safety, which motivates us to take actions that ensure compliance with legal obligations. **(403-6.b)** We also offer non-mandatory programs that contribute to the health and well-being of our employees such as:

- **Control groups:** we closely monitor the health of employees who present some type of restriction for special jobs such as height, confined space and mobile equipment operation. From medical guidelines and periodic controls of blood pressure, weight and blood glucose, we focus on the rehabilitation of the professional to the full performance of these activities. In 2018, we followed 96 employees, of whom 49 were restricted to works in height and confined spaces and one restricted to the operation of mobile equipment.

Restrictions established in Control Groups



Maicon Manfé and Aline Silva, employees at Paper unit SC - Campina da Alegria



- **Hiperdia:** periodic follow-up of employees with hypertension and diabetes as a preventive way to work leave, including discussion groups on diseases and their complications.
- **Monitoring of pregnant women:** periodic guidelines for parents about care during pregnancy and for the newborn.
- **Health and Safety Patrol:** joint initiative of SESMT and CIPA. With patrols held monthly in the units of Paper and Corrugated Containerboard Packaging we seek to evaluate the conditions of the work environment so that our employees remain adequate, comfortable, safe and productive in the exercise of their functions. Adaptation needs are identified and reported to managers in the areas responsible for implementing them. (403-2.b) Suggestion boxes are positioned in all industrial units with the aim of collecting recommendations for improvement opportunities in terms of occupational health and safety.
- **Reinforcement of preventive campaigns promoted by the Federal Government as:** HIV / AIDS, vaccination, anti-smoking, ergonomics, heart and physical activity, men's and women's health and hearing health, with general guidelines on the themes.
- **Hearing Conservation Program:** Noise is continuously assessed. In 2018, we revalidate reports of people's exposure to the noise of all units. These actions are deployed in the Programa de Controle Médico e Saúde Ocupacional - PCMSO (Medical Control and Occupational Health Program) and the Environmental Risk Prevention Program.
- **Professional rehabilitation:** follow-up of employees on-leave with the possibility of returning to work, with direct reflexes complying to the quota of persons with disabilities in the Company.



José Adriano Franzen and Neila Catarina Bertoldi, employees from Corrugated Containerboard Packaging SC unit – Campina da Alegria

(403-4.a and 403-4.b)

Employees are represented by formal committees that assist us in the definition, implementation and monitoring of health and safety practices.

Committee	Responsibility	Meeting frequency	Autonomy	Representativeness
Internal Accident Prevention Committee (CIPA)	As provided by law	Monthly	Respects the provisions provided by law, in addition to being able to request the interruption of work activities at any time, due to verification of unsafe condition or behavior.	As provided by law. Excess or unfilled vacancies are supplied with Company's nominations
Emergency brigade	Emergency care and identification of scenarios that can lead to risky conditions.	Monthly	Total during emergency services, assuming hierarchy break if necessary.	100 % of employees, of all work shifts.
Health and Safety Patrol	Preventing risk conditions related to occupational health and safety in the work areas.	Minimum monthly and on demand when needed	Faced with imminent danger situation, it has full autonomy to stop the operation.	100% of the employees, represented by a fixed seat of the CIPA, a Safety Engineer and a variable number of rotating and voluntary participants.

Note: the Health and Safety Patrol started to incorporate the activities of the Noise and Ergonomics Committee (CIRE).

(403-9)

Health and occupational safety indicators

		2018	
		Direct employees	Service providers
Number and rate of fatalities as a result of work-related injuries	<ul style="list-style-type: none"> • 1 fatality • Severity rate: 1.441.22 	<ul style="list-style-type: none"> • 1 fatality • Severity rate: unavailable 	
Rate of work-related injuries of high consequence (excluding fatalities)	<ul style="list-style-type: none"> • Severity rate: 362.33 		
Number and rate of work-related injuries	<ul style="list-style-type: none"> • 16 accidents without leave • 74 accidents with leave 		Unavailable.
Main types of work-related injury	<ul style="list-style-type: none"> • Upper limbs 		
Number of man hours worked	<ul style="list-style-type: none"> • 5.561.273 hours 		
Work-related risks that pose a risk of high-consequence injury	<p>Risk assessment is done through the ruling of Regulatory Standard 12 (NR12) that deals with machinery and equipment. The lack of installation of protections and physical barriers and of operational procedures contributed to the recording of occurrences throughout 2018. Therefore we are dedicated to a detailed work of reviewing operational procedures and investments necessary to guarantee the people safety.</p>		

Note: rates calculated on the basis of one million hours worked. We used the NBR 14280 as a guide for the registry of work accidents, procedures and classification form.



The Future We Want:

- Strengthen and consolidate the culture of health and safety, with accident zero as a condition.
- Disseminate 100% of the revised operating procedures in 2019 for employees.
- Deploy occupational health and safety software integrated with E-SOCIAL and the company's new ERP, providing even more transparency to management while contributing to the application of defined standards, controls and monitoring of actions.
- Invest about R\$ 10 million over the next five years in the actions and adjustments that are necessary and advance in meeting the legal requirements applicable in all units.

Programa Cresce (Grow Program)

(103-2)

By preparing our employees for delivery and excellence results, we strengthen the way we handle the challenges of our business and the market. Through this Program and with the support of our leaders, we seek to offer better solutions so that the learning process is an experience that is always alive, contemporary and dynamic. In 2018, we invested R\$ 1,154 thousand in training and personal improvement actions.

Average hours of training per functional category (404-1)

	2016			2017			2018		
	Total work-load	Nº of employ-ees	Average hours of training	Total work-load	Nº of employ-ees	Average hours of training	Total work-load	Nº of employ-ees	Average hours of training
Leadership	13,117	167	79	13,944	168	83	6,297	161	39
Administrative	8,965	371	24	8,230	340	24	9,419	410	23
Technician	7,455	237	31	6,634	254	26	8,226	179	46
Operational	35,774	1,727	21	36,530	1,751	21	37,231	1,670	22
TOTAL	65,310	2,502	26	65,052	2,513	26	61,174	2,420	25

Average hours of training per gender (404-1)

	2016			2017			2018		
	Total work-load	Nº of employ-ees	Average hours of training	Total workload	Nº of em-ploy-ees	Average hours of training	Total workload	Nº of employ-ees	Average hours of training
Men	54,626	2,096	26	53,577	2,145	25	52,954	2,062	26
Women	10,684	406	26	11,761	368	32	8,390	358	23



Marcelo Schumacher, employee of the Paper Unit SC - Campina da Alegria

Throughout the year, we have developed a series of approaches focused on practical education and team development such as:

- Team Building - GRC Sudeste**
 Customer Relationship Management (GRC/ CRM) makes up the Commercial area of the Corrugated Containerboard Packaging units. The GRC Sudeste is the result of the merger of the teams responsible for Corrugated Containerboard Packaging SP - Indaiatuba and Corrugated Containerboard Packaging SP - Vila Maria Units. The team building work was done with support from the area leadership, including topics such as self-knowledge, interpersonal relationships, communication, and teamwork.
- Technical Training for Conversion Area**
 Held at the Corrugated Containerboard Packaging SC Unit – Campina da Alegria, the trainings were conducted by internal facilitators, divided into 4 modules, covering: Introduction to Paper Process, Box and Sheets Quality Standards, Introduction Corrugated Containerboard Packaging Process and Corrugated Containerboard Packaging Engineering. There were 13 classes, totaling 353 participations.

Investments (R\$ thousand)

	2016	2017	2018
Investment in training and development	784	659	743
Incentives for education through sub-sidies	849	652	459

To embrace The Future We Want, we must remember that learning never stops. Recognize that it is in the exchange of knowledge among all, leaders and employees, that evolution happens. Therefore, from 2018 onwards, our actions in the Cresce Program will constitute Irani Corporate Education, composed of three schools with strategic focuses that seek to deepen themes relevant to our business:



escola lidera

Encourage leadership in everyone to lead the future



escola itec

Strengthen our roots and technical basis to search for excellence together



escola DNA

Instill our thinking and doing as strategy to embrace the future

(103-3)

In this initiative, the Board of Executive Directors is responsible for evaluating the strategic cycle and results, while the thematic committee thinks about educational solutions aligned with our strategy. Each school has a sponsor and working groups will be attentive to educational demands, building learning solutions in an 70-20-10 experience:

With practice

We learn by experimenting, practicing and practicing again in our daily work.

In a structured way

We learn in courses and trainings, outside the work environment.



With each other

We learn through interaction with others, in environments where conversations and sharing are encouraged

The Lidera School began its first module in order to understand the expected attributes in all the company's leadership structures in a transversal way (Leader of Leaders and Leaders of People) and structured in development tracks. Different works involving directors, managers and superintendents and coordinators and supervisors were carried out. Divided into 12 groups led by 5 facilitators, the first module counted on the participation of 141 leaders (80% of the managers in this track), causing a deep dive in self-knowledge and establishing learning transfer goals to the day to day, with support of the Personnel Development area whenever necessary. Throughout 2019, we will work on the themes Value Relations in Practice, Strategic Execution and Innovation Culture.

This movement consolidates our strategic intent to encourage leadership so that each person is an protagonist agent when building The Future We Want.



The Future We Want:

- Implement a digital e-learning platform aligned with the Company's new ERP, promoting mobility, accessibility, self-development and support to the learning cycle.
- Throughout 2019, we will conduct training on the themes resilience, team development and leadership.
- Strengthen technical capacities at the operational level, including on-the-job training.



*Corrugated Containerboard Packaging Unit
SC - Campina da Alegria*

Programa Motiva (Motivate Program)

(102-43, 102-44 and 103-3) In order to improve the organizational climate and its impacts on the work environment we created the MOTIVA Program. Using the Great Place to Work® methodology, we identify the employee satisfaction level and our leaders deploy corporate and unit action plans in each area, tracing the types of treatment for each improvement opportunity identified.

We also have a climate management volunteer support group by unit that acts as climate ambassador, acting as spokesperson for the employees while supporting leaders in the unfolding of the action plans.

Working in this way, we try to reinforce the sense of **cultural practices evidenced by the GPTW® methodology**, while focusing on the vision of being one of the best companies to work for, where people want to stay and feel good, recognizing our stimulus to innovation and creativity , attracting new talents, assisting our clients in a recognized way.

In 2018, we carried out several initiatives interacting and monitoring the organizational climate of all units, including meetings to follow up the action plans drawn from the last cycle of research (2017), creation of the climate tree with flags and indicators periodically monitored by the Board of Executive Directors, in addition to listening groups, providing feedback to leaders to calibrate ongoing initiatives.

Among the main initiatives linked to the organizational climate promotion, the following ones stand out:

- Dissemination of the Integrity Program and the 2017-2028 Strategy
- Running and walking to celebrate the Company's 77 years
- Recognition of employees by company timeFamília na Empresa
- Family in the Company

From 2019, we will hold the organizational climate survey annually.



The Future We Want:

- **Achieve 76% overall employee satisfaction index in the next cycle of the GPTW Climate Survey®.**



Cultural practices according to the GPTW methodology®:

Inspire - Speak - Listen - Develop - Care - Thank - Hire - Celebrate - Share



Eduardo Junior da Veiga,
employee from Corrugated
Containerboard Packaging SC
unit – Campina da Alegria

Programa Supera (Excel Program)

By means of this performance appraisal, skills-based evaluation and results management program, we provide self-knowledge, personal development, a bolstered feedback culture, talent identification and recognition for employees with outstanding performances.

Percentage of employees participating in the Supera Program 404-3

	2016			2017			2018		
	Men	Women	To-tal	Men	Women	Total	Men	Women	Total
Leadership	6%	1%	7%	6%	1%	7%	6%	1%	7%
Administrative	7%	6%	13%	7%	7%	13%	7%	6%	13%
Technician	10%	1%	11%	10%	1%	11%	1%	9%	10%
Operational	56%	7%	63%	55%	7%	63%	59%	5%	64%
TOTAL	79%	15%	94%	78%	16%	94%	73%	21%	94%

Note: apprentices, employees on leave, trainees and new employees admitted after December 15 do not participate in the Program.

With an annual cycle, the program comprises:

1. individual and collective goals

defined jointly by leaders and their employees. By sharing this responsibility, we encourage the teamwork spirit and stimulate them to achieve the desired results. The results are monitored and the actions are recalibrated, in a timely manner, aiming at achieving the proposed goals.

2. Skills evaluation

leaders and led are evaluated based on a list of basic and differentiating skills. Held at the end of the Program cycle according to the category in which the position of the evaluated person falls:



- **Leadership:**
self-assessments and evaluations of the immediate superior, peers and subordinates including the following skills: Leadership; Communication; Customer's point of view; Planning, organization and control; Focus on results; Entrepreneurship; Relationship building; Innovation; Culture of Excellence; Teamwork and Self-development.
- **Administrative/Sales:**
to employees who do not hold formal leadership we apply self-assessment, peer assessment and immediate leadership in relation to the skills: Communication; Customer's point of view; Self-development; Focus on results; Innovation; Building Relationships and Teamwork skills.
- **Operacional:**
skills such as Culture of Excellence, Teamwork, Self-Development and Focus on Results are the subject of self-assessment and evaluation of immediate leadership of employees who work directly in the operation of the industrial units and who do not hold leadership positions

3. Feedbacks:

two formal feedback moments are carried out, the first one occurs six months after the start of the cycle and the second, at the closure, when individualized development plans are defined. Throughout the whole period, we also encourage the informal feedback practice, with the aim of making the actions aimed at reaching the results and expected performances for the cycle more dynamic and transparent. To prepare leaders and subordinates, we conduct warm-up meetings that reinforce the sense of each of the skills assessed by the Program and share tips on how to make this moment an opportunity for personal and professional development.

4. Recognition and valuation:

the cross-referencing of the employees' performance and their performance in relation to the goals established at the beginning of the period are consolidated at the end of the cycle and determine the percentage of bonus that the employee will receive, ranging from 0% to 150% of their nominal wage.

At the end of each cycle, the results are presented to the Board of Executive Directors.

Irani's demographic info

(401-2.b and 102-8.f)

The data presented below were extracted from the ERP system used by the Company, taking 12/31/2018 as the base date. We consider all the subsidiaries of Irani as important operational units because they have the same degree of representativeness for the group, maintaining the extension of their policies and strategies, seeking people development and growth.

Total number of employees

(102-7.i)

	2016	2017	2018
Active	2,321	2,364	2,286
On leave	151	149	134
TOTAL	2,472	2,513	2,420

Hiring regime

(102-8.c)

	2016		2017		2018	
	Men	Women	Men	Women	Men	Women
Part Time	22	20	12	13	10	24
Full Time	2.056	374	2.133	355	2.052	334

Percentage of employees by age group

405-1.ii

	2016	2017	2018
Up to 30 years old	36.2%	37.4%	36.7%
Between 31 and 50	51.8%	50.9%	51.1%
More than 50	12.1%	11.7%	12.2%

Percentage of employees by functional category

(405-1.iii)

	2016	2017	2018
Administrative	14%	13%	17%
Leadership	7%	7%	7%
Technician	10%	9%	7%
Operational	69%	71%	69%

Percentage of employees by functional category, gender

(405-1.iii)

	2016		2017		2018	
	Men	Women	Men	Women	Men	Women
Administrative	9%	40%	9%	40%	11%	51%
Leadership	7%	5%	7%	5%	7%	6%
Technician	12%	5%	11%	5%	9%	1%
Operational	73%	50%	73%	50%	74%	42%

Percentage of employees per company time

(401-1.b)

	2016	2017	2018
Up to 1 year	10.23 %	13.09 %	11.16 %
From 1 to 5 years	37.01 %	33.15 %	33.02 %
From 5 to 10 years	24.92 %	24.79 %	23.88 %
10 to 15 years	10.96 %	10.90 %	13.26 %
15 to 20 years	7.85 %	8.52 %	8.64 %
From 20 to 25 years old	4.21 %	4.89 %	5.17 %
From 25 - 30	2.63 %	2.27 %	2.19 %
Over 30 years	2.18 %	2.39 %	2.69 %

Employees by employment contract and gender
(102-8.a)

	2016		2017		2018	
	Men	Women	Men	Women	Men	Women
CLT - Undetermined	2,050	370	2,121	352	2,042	319
CLT –Apprentices	24	24	18	16	11	31
Statutory	4	0	6	0	6	0
TOTAL	2,078	394	2,145	368	2,059	350
			2.513		2.409	

Note: as of the next reporting cycle, this information will include the calculation of the employees hired according to the CLT for a fixed term

Active employees covered by collective bargaining agreements
(102-41.a)

	2016		2017		2018	
	Nº	%	Nº	%	Nº	%
Collective agreements	2.424	96.46%	2.323	98.27%	2.245	98.21%
<i>Pro labore</i>	4	0.16%	6	0.25%	6	0.26%
Minimum wage	85	3.38%	35	1.48%	35	1.53%
Grand Total	2,513	100%	2,364	100%	2,286	100%

Percentage of active employees by gender
(405-1.i)

	Men		Women	
	Nº	%	Nº	%
2016	1,692	84%	359	16%
2017	2,036	85%	328	15%
2018	1,958	85%	328	15%

New hires
(401-1.a)

	2017				2018			
	Men		Women		Men		Women	
	Nº	%	Nº	%	Nº	%	Nº	%
Under 30 years old	203	61%	23	7%	134	50%	47	17%
Between 30 to 50 years old	87	26%	15	5%	65	24%	20	7%
Over 50 years old	4	1%	0	0%	4	1%	0	0%

Turnover
(401-1.b)

	2017		2018	
	Men	Women	Men	Women
Under 30 years old	6.3%	4.8%	24.35%	18.00%
Between 30 to 50 years old	2.9%	3.8%	10.22%	6.06%
Over 50 years old	0.5%	0%	3.07%	4.77%

Information broken down by business units

Employees by business units (102-7.i)

	2016		2017		2018	
	TOTAL	%	TOTAL	%	TOTAL	%
Office SC - Joaçaba	114	4.61%	119	4.74%	128	5.29%
Office RS – Porto Alegre	39	1.58%	37	1.47%	43	1.78%
Paper SC – Campina da Alegria	735	29.73%	795	31.34%	786	32.48%
Paper MG – Santa Luzia	163	6.59%	164	6.53%	163	6.74%
Corrugated Containerboard Packaging SC – Campina da Alegria	308	12.46%	306	12.18%	301	12.44%
Corrugated Containerboard Packaging SP – Indaiatuba	361	14.60%	367	14.60%	368	15.21%
Corrugated Containerboard Packaging SP – Vila Maria	390	15.78%	384	15.28%	279	11.53%
Resin RS – Balneário Pinhal	77	3.11%	79	3.14%	70	2.89%
Habitasul Florestal	285	11.53%	262	10.43%	282	11.65%

(102-8.e) Note: In 2018, we reduced one shift in the Corrugated Containerboard Packaging SP unit – Vila Maria.

Active employees by business units and gender (102-8.b and 102-8.c)

	2016		2017		2018	
	Men	Women	Men	Women	Men	Women
Office SC - Joaçaba	66	48	46	73	80	48
Office RS – Porto Alegre	17	13	17	12	17	18
Paper SC – Campina da Alegria	639	61	696	65	690	67
Paper MG – Santa Luzia	133	15	136	14	135	15
Corrugated Containerboard Packaging SC – Campina da Alegria	257	40	267	32	263	30
Corrugated Containerboard Packaging SP – Indaiatuba	312	33	320	32	316	38
Corrugated Containerboard Packaging SP – Vila Maria	303	63	300	60	210	45
Resin RS – Balneário Pinhal	49	11	51	12	42	13
Habitasul Florestal	186	75	176	55	205	54

Nota: In 2018, we reduced one shift in the Corrugated Containerboard Packaging SP unit – Vila Maria.

Turnover by business units

401-1.b

	2017	2018
Office SC - Joaçaba	7.0%	8.8%
Office RS - Porto Alegre	10.3%	14.9%
Paper SC - Campina da Alegria	9.4%	7.1%
Paper MG - Santa Luzia	6.6%	10.5%
Corrugated Containerboard Pack-aging SC - Campina da Alegria	13.4%	11.2%
Corrugated Containerboard Pack-aging SP - Indaiatuba	12.5%	11.0%
Corrugated Containerboard Pack-aging SP - Vila Maria	6.5%	3.3%
Resin RS - Balneário Pinhal	18.9%	13.1%
Habitasul Florestal	17.0%	27.6%

Compensation

(102-36, 103-2 and 103-3)

The compensation of our employees is guided by an independent consultancy specialized in career considering the regional practice and the position to be filled.

Total payroll (in R\$ thousand)

(401-1.b)

	2016	2017	2018
	155	109	150

Variable compensation (in R\$ thousand)

(401-2.a)

	2016	2017	2018
Profit Sharing Plan (PPR)	4,281	5,777	5,654
SUPERA PROGRAM	6,424	6,310	7,057

Proportion of wages paid to men and women

(405-2.a)

	2016		2017		2018	
	Men	Women	Men	Women	Men	Women
Administrative	1	0.76	1	0.78	1	0.73
Leadership	1	0.91	1	0.90	1	0.71
Technician	1	0.94	1	0.91	1	0.79
Operational	1	0.79	1	0.80	1	0.80

(102-38 and 102-39) Proportionally, the highest paid individual in the organization receives 29.63 salaries more than the average of the other employees. To prepare this data, the total annual compensation was calculated as follows: base salary + 13th salary + vacation pay. In 2017, this rate was 30.24.

(102-38 and 102-39) The average of the lower wages paid corresponds to 1.24 of the minimum wage in force in Brazil, on December 31, 2018. In relation to the total number of employees, 16.57% receive the job category floor. In 2017, these rates were 1.32 and 12.93%, respectively.

In 2018, we received 11 labor fines in the Resin Unit Resin Unit RS - Balneário Pinhal, totaling R\$ 28,572,20.

Benefits

(401-2) They are offered to all employees, including contractors for a fixed term or part-time, regardless of functional category and workload. For the definition of benefits, we quantitatively analyze market practices and comply with the provisions of collective agreements.

Beginning in 2018, the benefits were kept for employees on leave, as long as they continue to make the monthly payment of their holdings. This measure was applied in all cases, except for the exceptions provided for in the Collective Agreement or Convention.

Annual investment in the main benefits (in R\$ thousand) (401-2.a)

	2016	2017	2018
Meals	12,126	12,073	11,931
Transporta-tion	6,724	7,379	8,069
Life Insurance	208	218	299
Health Insur-ance Plan	8,865	10,370	12,344
TOTAL	27,293	30,040	32,643

Notas: Meals considers the sum of the amounts invested in employees' meal and market basket.

(401-2) We do not have a retirement fund. In the event of disability, life insurance examines cases of work-related accidents and may indemnify the employee if the full documentation is properly presented and approved.

Parental leave (401-3)

	75% Male	25% Female	
a. Total number of employees entitled to take maternity / paternity leave, broken down by gender	50	17	
b. Total number of employees who took maternity / paternity leave, broken down by gender	50	17	
c. Total number of employees who returned to work after taking a maternity / paternity leave, broken down by gender	50	14	
d. Total number of employees who returned to work after taking a maternity / paternity leave and continued to be employed 12 months after returning to work, by gender	61	13	74
e. Return to work and retention rates of employees who have taken maternity / paternity leave, broken down by gender	92%	100%	94%



E-Social

In 2018, respecting the current deadlines, we implemented the E-SOCIAL, a federal government project whose objective is to unify, integrate and standardize the sending of all labor, social security and tax information on any form of work hired in Brazil. The cross-checking of data verifies the compliance with legislation involving the Federal Revenue, the Ministry of Labor, Social Security and the Caixa Econômica Federal Bank. The advantages of this project include:

- Simplification when complying with ancillary obligations, by eliminating the filling and sending of several documents to the government;
- Reduction of costs with the use of paper and physical space;
- Greater control of services related to labor and social security;
- Easy and fast access to information;
- Higher quality of the information provided;
- Increased visibility in payroll processes together with federal government agencies;
- Review and adequacy in payroll internal processes, respecting the deadlines to meet the obligations.

*Jessé Xavier Alves,
employee from Corrugated
Containerboard Packaging SC
unit – Campina da Alegria*



Production **Chain**

Production Chain

(103-1) We seek to broaden the meaning of our initiatives by promoting relationships with extended, real and relevant interfaces with our stakeholders. We embrace the future by seeking excellence in the entire production chain, from suppliers to customers, in an ethical and transparent manner, open to dialogue and focused on long-term partnerships that provide mutual benefits.

Value relationships with our suppliers

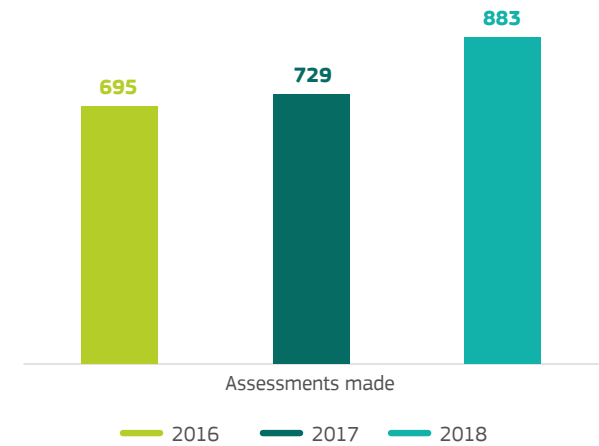
All contracting processes for suppliers and service providers comprise stages for specific identification, qualification, selection, and evaluation, which are designed according to the nature of these relationships, the criticality of the products and services obtained, and the impacts on our business. The average number of service providers in the Company reached 939 people in 2018. This number totaled 825 in 2017 and 789 in 2016.

(102-9 and 103-2) Guided by the applicable requirements of the FSC®, ISO9001 and ISO14001 standards, due to the criticality of the processes and the necessary rigor to meet the Company’s needs, we have categorized our supply chain into five critical

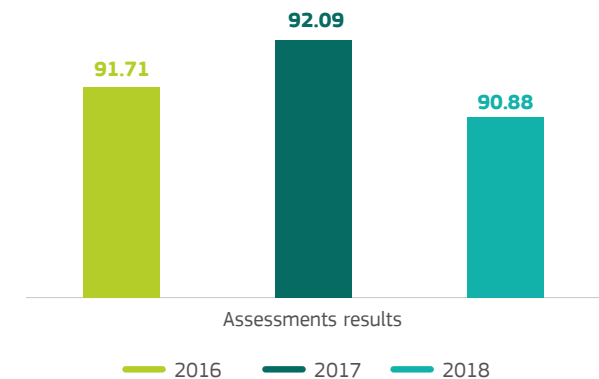
purchasing groups: (i) Critical service providers, (ii) Critical and chemical products, (iii) Transport / Logistics services for shipment, (iv) FSC® and forest products, and (v) Critical external use and consumption materials and services.

(103-2 and 308-2) In order to contribute to the continued development of these partners, we apply the Índice de Desempenho de Fornecedor – IDF (Supplier Performance Index) to all purchasing groups. This index assesses issues related to the quality of the products and services offered, technical specifications, communication effectiveness and established business relationship.

Number of suppliers and service providers assessed



Supplier Performance Index evolution (IDF)



The IDF result is shared with the assessed supplier / service provider and the applicable actions vary according to the score achieved:

- **Up to 60 points:** the business relationship is blocked. In order to re-establish, the supplier / service provider must submit an action plan evidencing the improvement points that will be worked on to the approval of the supply and / or forestry manager of Irani.
- **Between 60 and 80:** A Formulário de Não-Conformidade - FNC (Non-Conformity Form) is prepared and sent to the supplier / service provider. Within thirty (30) days, the supplier must present a plan of action to address issues requiring improvement. Such action plan is evaluated based on the services provided or products offered.
- **Above 80 points :** the qualification is maintained.

Critical service providers

These include service providers, project contractors, or hourly contractors who work on the Company’s premises and whose contributions may directly impact the quality of our products (e.g., forestry and environmental services, machinery and equipment maintenance).

The interface between the requesting area and the service providers is done by our team of negotiators with the support of the health and safety teams in assessing the requirements of this nature. In 2018, jointly, the Health, Safety, Quality and Sustainability, Procurement and Legal managements defined more adequate standards for the documentation controls of this group, with a special focus on the prevention of labor liabilities.

The predominant origin of the group components are: Ceará (1), Pernambuco (1), Federal District (2), Mato Grosso do Sul (1), São Paulo (379), Minas Gerais (118), Rio de Janeiro (6), Espírito Santo (2), Santa Catarina (304), Paraná (64) and Rio Grande do Sul (183).

	2016	2017	2018
Number of components (for the most part, energy suppliers and services)	964	1,036	1,061
Investment in purchases (in R\$ million)	72	79	87
Percentage over total purchases	13%	12%	12%
IDF result	91.93	92.61	93.53

Prevailing criteria in the IDF assessment: legal compliance, quality, capacity to provide the service, innovation and improvements, environmental aspects, including waste disposal, and commercial relationship.

Critical and chemical products

This group is composed of suppliers of raw materials and inputs that directly impact the quality of the final products (e.g., starch and tubelets for the Paper division, glue and stretch film for packaging, and perlite for the Resin division). Given their criticality, our teams organize periodic purchasing schedules.

(414-1 and 414-2) To qualify this group, we annually apply the Supplier Assessment Questionnaire (QAF), an instrument that seeks to assess the ability of critical and chemical products suppliers to satisfy quality and socio-environmental requirements set forth in ISO 9001 (quality), ISO 14001 (environmental management system), ISO 22000 (food safety), and SA 8000 (social responsibility) standards. 129 suppliers were evaluated in relation to aspects such as decent work, health and safety, freedom of association and the right to collective bargaining, respect for diversity, working hours and compensation.

(414-2) To gather evidence, our negotiators may request on-site verification whenever needed. In 2018, three external visits were made for this purpose. Further verifications were made during the visits of the suppliers to our units.

The predominant origin of the group components are: Rio Grande do Norte (1), São Paulo (61), Rio de Janeiro (2), Minas Gerais (16), Santa Catarina (34), Paraná (10) and Rio Grande do Sul (16)

(308-2a)	2016	2017	2018
Number of components (for the most part, chemicals and inputs)	140	179	140
Investment in purchases (in R\$ million)	71	71	79
Percentage over total purchases	11%	11%	11%
IDF result	94.56	94.57	87.84

Prevailing criteria in the IDF assessment: legal compliance, quality, innovation and improvement, environmental aspects and commercial relationship.



Transport / Logistics services for shipment

This encompasses companies contracted to transport our finished products to our customers. The members of this group undergo a qualification process before signing the partnership agreement to guarantee compliance with legal compliance aspects.

When a new provider is developed, we also apply a questionnaire that seeks to assess the adequacy of a given supplier's fleet to satisfy Irani's needs, including the ability to cover its service radius. We also leverage these partnerships to optimize our reverse logistics processes. Whenever possible, carriers that make this type of delivery return to our units transporting old corrugated containerboard.

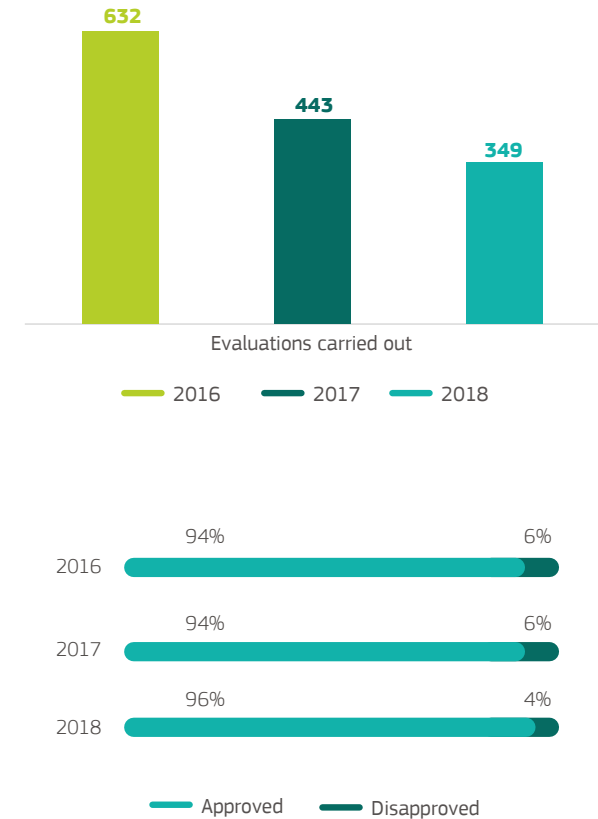
The predominant origin of the group components are: Minas Gerais (3), São Paulo (14), Santa Catarina (25) and Rio Grande do Sul (1).

	2016	2017	2018
Number of components (for the most part, logistics services)	58	44	43
Investment in purchases (in R\$ million)	48	49	46
Percentage over total purchases	8%	7%	7%
IDF result	92.60	92.22	86.94

Prevailing criteria in the IDF assessment: Compliance to schedule, quality of services provided, response time, tracking and environmental criteria related to leakage and atmospheric emissions. The latter, with approval in the Programa Despoluir (Depollute Program) in Santa Catarina and opacity report in São Paulo.

Measurements carried out on the transportation trucks of the Vargem Bonita Units

308-2a



FSC® and forest products

This group includes suppliers of raw materials that are used to produce finished products certified by FSC®, such as old corrugated containerboard, pulp, paper and wood, biomass and firewood for biomass.

Consultations regarding the legal compliance and meeting of specificities signaled by our teams are issues verified before the establishment of the business relationship. On-site visits are also carried out, including forest suppliers, suppliers of old corrugated containerboard and gum resin.

For the purpose of qualifying the Pulp and Paper suppliers that comprise this group, we annually apply the Questionário de Avaliação de Fornecedor - QAF (Supplier Assessment Questionnaire), an instrument that seeks to assess the ability of critical and chemical products suppliers to satisfy quality and socio-environmental requirements set forth in our Sustainability Policy, which conforms with ISO 9001, ISO 14001, ISO 22000, and SA 8000 standards.

The predominant origin of the group components are: São Paulo (48), Minas Gerais (28), Rio de Janeiro (4), Mato Grosso do Sul (2), Espírito Santo (2), Goiás (1), Santa Catarina (78), Paraná (14), Rio Grande do Sul (130) and abroad (1).

	2016	2017	2018
Number of components (for the most part, old corrugated containerboard, forest, resin and paper and pulp)	339	332	308
Investment in purchases (in R\$ million)	238	254	283
Percentage over total purchases	38%	39%	39%
IDF result	92.81	92.07	93.31

Prevailing criteria in the IDF assessment: legal compliance, quality and compliance with specifications, supply capacity, innovation and improvement, environmental aspects and commercial relationship.





(414-2) In 2018, we visited 18 old corrugated containerboard suppliers and all 34 suppliers of process loglet, biomass wood chip and firewood for biomass from Santa Catarina. We also intensified our approach with gum resin suppliers by making 30 face-to-face visits.

(414-2)

Supplier type	Verified aspects
Old corrugated containerboard	Commercial relationship, legal aspects, training and health and occupational safety
Gum resin	Commercial relations, legal aspects, training, health and occupational safety and decent work
Firewood and loglets for pro-cessing	Legal aspects and health and occupational safety
Biomass	Self-declaration on topics related to decent work and human rights

(102-43 and 102-44) We have prepared and started the distribution of a booklet with information on the licensing of forest areas for our gum resin suppliers. We also invited them to the annual meeting that deals with issues related to production processes, market scenario, Company results and environmental issues such as best practices and licensing.

Critical external use and consumption materials and services

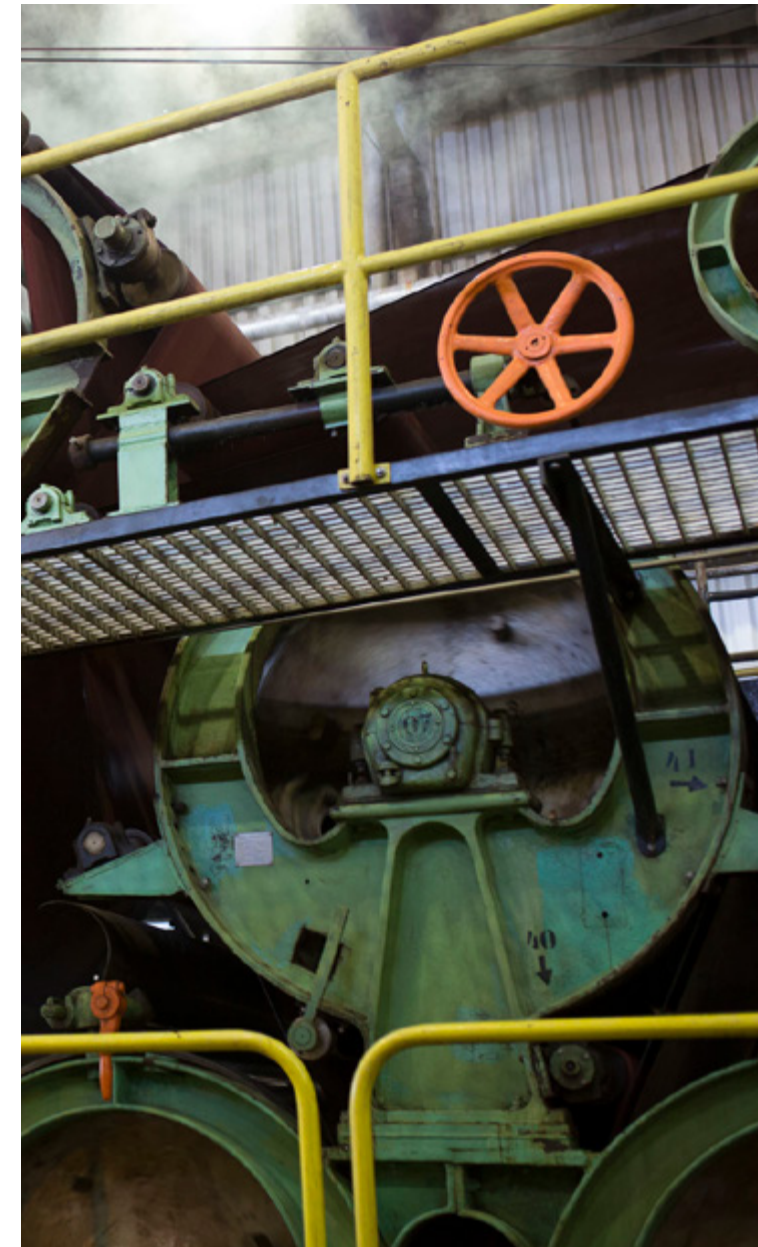
External products and services which have a direct impact on our production processes, such as bearings, belts, knives, and forms, and services such as plates and motor grinding. The qualification of this group includes verification of legal compliance by suppliers followed by an analysis and the development of a roadmap for approval of the designated brands. Business issues are evaluated by our negotiators and the service user is a key figure in defining hiring, evaluating technical aspects, and recommending brands. Quotations of this type of

products and / or services gain agility in the Irani Online portal, integrated to the ERP system of the Company. In 2019, quotations will be answered through a new shopping portal, further enhancing our communication with suppliers.

The predominant origin of the group components are: Paraíba (1), Bahia (2), Mato Grosso do Sul (1), Espírito Santo (4), São Paulo (737), Minas Gerais (132), Rio de Janeiro (5), Santa Catarina (400), Paraná (78), Rio Grande do Sul (214) and abroad (15).

	2016	2017	2018
Number of components (for the most part, materials for use and consumption)	1,537	1,557	1,589
Investment in purchases (in R\$ million)	82	79	95
Percentage over total purchases	13%	12%	13%
IDF result	86.63	87.96	92.79

Prevailing criteria in the IDF assessment: Return of goods, legal compliance, analysis of the requesting area in relation to quality, technical capacity, innovation, environmental aspects of the service provider and analysis of the supply area in relation to established commercial relationship.



Shared Commitments

(308-1, 414-1, 408-1, 308-2 and 414-2)

The purchases of wood chips under active contracts calculated in the Urban Forest Project in 2018 totaled 85.06%. The Irani Supplier project performed above the average of 60% of suppliers with long-term active agreements, calculated at 67.02% at the end of 2018.

Our contracts include mandatory clauses related to socio-environmental and human rights aspects to ensure proper legal compliance and appropriate working conditions with our partners. The signed documents are taken as self-declarations of commitment to these themes, including the lack of slave and/or child labor in their operations.

In 2018, we signed 458 new contracts. Of this total, 226 referred to the inclusion of environmental clauses, 222 contained clauses related to human rights and 250 contracts included anti-corruption clauses. The clauses applicability analysis to contracts is conducted by the legal department.

(102-12) Relevant External Initiatives such as the U.N. Global Compact and the Brazilian Business Pact for Integrity and Against Corruption have our participation, reinforcing our commitment to ethics and human rights. In practice, the adoption of the Management Excellence Model® (MEG), the achievement

of international certifications such as FSC®, ISO 14001 and the GRI Standards indicators, monitored and reported in this Report, has raised the level of our processes with regard to socio-environmental aspects, which are linked to evaluations of suppliers and service providers. Risk management and purchasing controls, as well as contract and warehouse processes follow an internally developed methodology.

(308-1 and 414-1) In the corrugated containerboard packaging units, 33 suppliers were identified and evaluated. In addition, we also evaluated service providers considered critical for the environment based on the compulsory licensing guidelines, totaling 85 evaluations. In the past year, no environmentally critical supplier from the Corrugated Containerboard Packaging business units has been disqualified. In 2017, no vendor was disqualified.

(308-2c)

ACTUAL SUPPLIERS	Significant Environmental Impacts			
	Green-house Gas Generation (GHG)	Updated environmental licenses	Natural resource consumption	Waste generation
Purchase of chemical products	✓	✓	✓	✓
Transport of chemical products	✓	✓	✓	
Purchase of natural products directly from the supplier (water, sand, stone, pallets)	✓	✓	✓	
Contracting of waste transport service	✓	✓	✓	
Contracting of waste disposal service	✓	✓	✓	✓
Contracting of cleaning service of water reservoirs / cesspool	✓	✓	✓	✓
Allocation of own forklift tires	✓	✓	✓	✓
Service providers	✓	✓	✓	✓

(308-1) In the last quarter of 2018, we created and implemented a system for the approval and control of documents related to new suppliers and service providers that serve the Corrugated Containerboard Packaging business and that may impact the environment. Formalized in the form of internal procedure, the environmental area is responsible for monitoring the documentation of active suppliers and Supplies as responsible for collecting documents in the development of new partners. The improvement needs of the practice will be analyzed in the next 12 months.

We mitigate risks in service contracting operations across the Paper and Corrugated Containerboard Packaging business through a third-party management practice that provides for the application of internal procedures covering internal standards, health and safety, environment and documentation required by law.

The production slowdown in the country due to the impact of the truck drivers 'strike brought impacts to the Company, reflecting in our practice of encouraging reverse logistics for the reprocessing of our customers' corrugated cardboard. The volume that returned to the production process was only 5,713.90 tons, down from the volume of 6 thousand tons projected for the period and the volume of 6,030.77 tons ascertained in 2017.

Whenever possible and as a way of stimulating local economic development and building partnerships with regional suppliers, we prioritize purchases and contracting services from the communities around our units. In 2018, the volume of local purchases increased in financial figures, but showed a proportional decrease in relation to the total purchases of the Company:

	2016	2017	2018
(204-1) Total purchases from local suppliers (R\$ thousand)	127,615	124,608	129,692
Percentage over total purchases made by the Company	20.11%	18.90%	17.99%



The Future We Want:

- Maintain the volume of corrugated cardboard purchased from our customers above 6 thousand tons.

*Cristiano Gomes,
employee at
Paper unit SC -
Campina da Alegria*





Value relationships with our Customers

We do not just do business, we focus on generating and sharing value.

(103-1) Our way of working is simple, fast and transparent. Cultivating opportunities that start from the inside out, we are dedicated to building excellence and high-performance teams dedicated to working with the customer-focused. In 2018, we began recycling the Customer's point of view concept. The dissemination initiatives enabled more than 100 internal leaders, reaching a 97% average satisfaction of the participants.

For us, the challenge is clear: to understand to meet customer requirements. We stand beside our customers, looking to the same horizon so that, with our expertise and experience, we can offer innovative, differentiated and personalized solutions that aim at cost reduction and exceptional performance.

This thirst for building together, surprising and sharing value is all about research, development and innovation in processes, products, management and business. Innovation and Continuous Improvement, Research and Development and Technical Assistance internal teams act as facilitators, monitoring employees and clients in the management of ideas, product development and assistance throughout the process.

As a result, our relationships are not limited to the supply of products. We share best practices, train your teams for free, and build strong, prosperous relationships.

This is our essence, what inspires us, engages us and leads us forth. **(102-43 and 102-44)** The result of this attitude is reflected in our customer satisfaction surveys.

Mauro Pasqualon and José Roberto Mateus Junior, employees at Paper unit SC - Campina da Alegria and Office SC - Joaçaba

Paper business

(102-2 and 102-6)

Main customers: Food segment, light and heavy sacks, bags, among others.

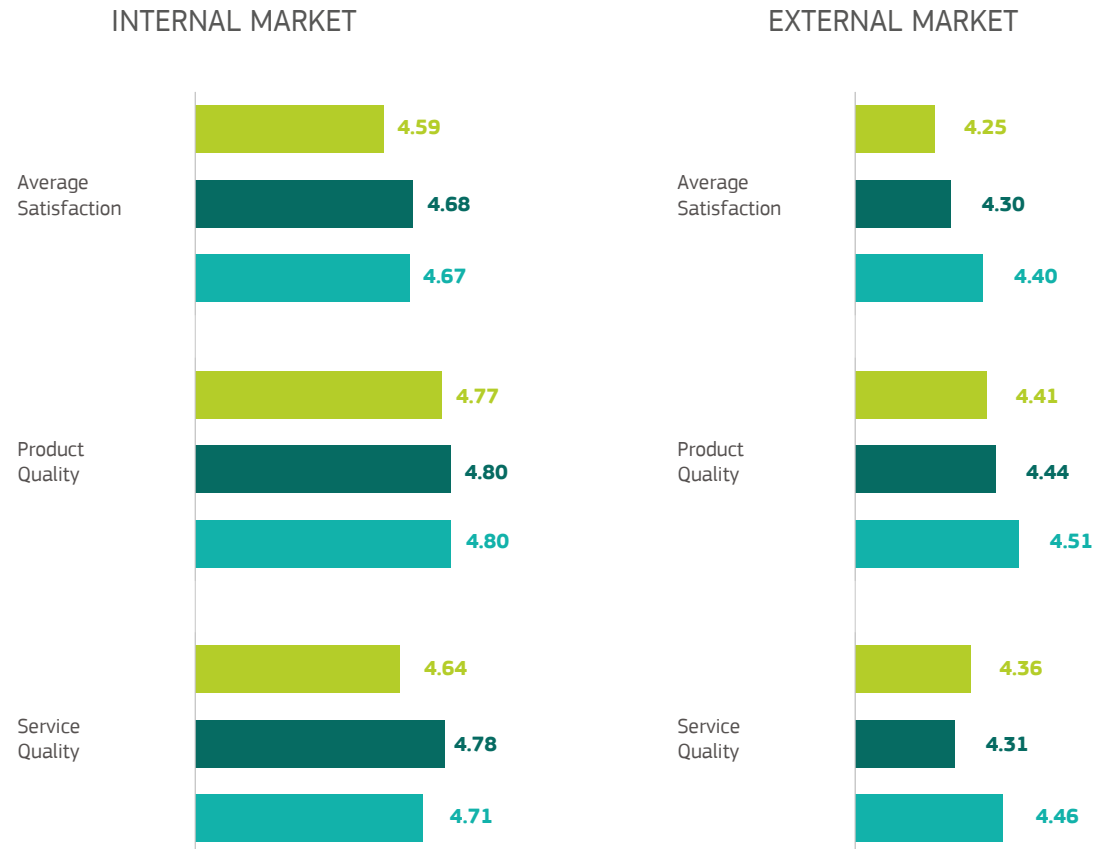
Domestic market:

Amazonas, Bahia, Ceará, Espírito Santo, Federal District, Goiás, Mato Grosso, Paraíba, Paraná, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Rondônia, Santa Catarina and São Paulo.

Foreign market:

Argentina, Austria, Bolivia, Chile, China, Colombia, Germany, Hong Kong, Israel, Italy, Kuwait, Pakistan, Paraguay, Peru, Portugal, Saudi Arabia, Serbia, Singapore, South Africa, The Netherlands, Trinidad and Tobago, Turkey, United Kingdom, United States and Uruguay.

Results of the customer satisfaction survey (1 to 5 scale)
(102-43 and 102-44)



Corrugated Containerboard Packaging business

(102-2 and 102-6)

We are one of the main domestic corrugated packaging producers

Main customers:

Cartons, meat industries, food industry, chemicals, plastics, and beverages.

Domestic market:

Amazonas, Espírito Santo, Goiás, Mato Grosso, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina and São Paulo.

Results of the customer satisfaction survey (1 to 5 scale)
(102-43 and 102-44)



Resin business

(102-2 and 102-6)

Main customers (gum-rosin):

producers of printing inks, adhesives for paper and linings, and wax for depilation.

Main customers (turpentine):

producers of solvents for paints and varnishes, dyes, waxes, pine oil, camphor, soaps, insecticidal greases, sealants, and perfume fixatives.

Domestic market:

Bahia, Rio Grande do Sul and Santa Catarina.

Foreign market:

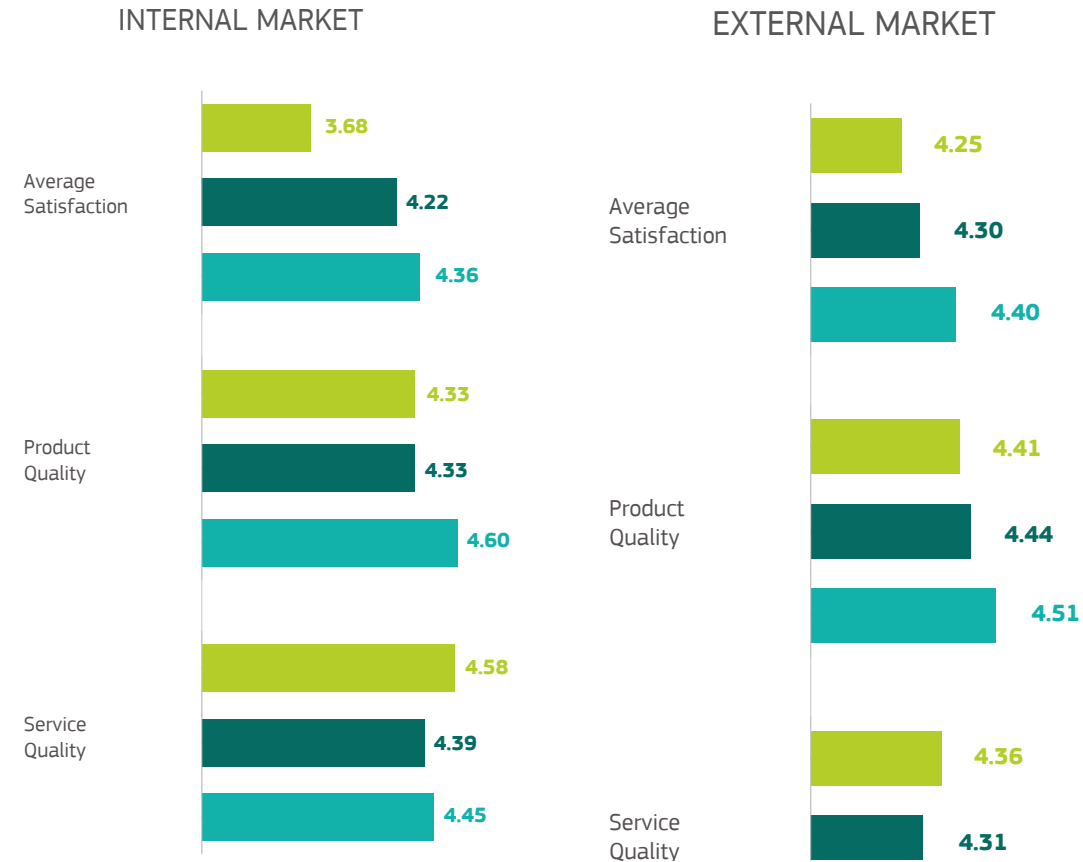
Canada, Chile, China, Egypt, France, Germany, Hong Kong, India, Japan, Mexico, Pakistan, Peru, Portugal, Singapore, South Africa, Spain, The Netherlands, Turkey and United States.



The Future We Want:

- Strengthen expanded interface initiatives with customers

Results of the customer satisfaction survey (1 to 5 scale)
(102-43 and 102-44)





Socio-environmental
Responsibility

Socio-environmental Responsibility

(103-1, 103-2 and 103-3)

To embrace the future is to be a point of reference in the best practices of sustainability. That's why, here, at Irani, we work with expanded attitude.

Environmental management

Environmental responsibility is evidenced in our strategic map for the 2018-2027 cycle, in the Company's Sustainability Policy and permeates our management and production processes.

(307-1) Guided by current legislation, our environmental management has a monthly updated software guiding adequacy and compliance plans. Environmental certifications also fulfill this role.

	FSC®	ISO 14001:2015	ISO 14064:2006
Paper SC – Campina da Alegria	✓		✓
Paper MG – Santa Luzia	✓		✓
Corrugated Containerboard Packaging SC Campina da Alegria	✓	✓	✓
Corrugated Containerboard Packaging SP Indaiatuba	✓	✓	✓
Corrugated Containerboard Packaging SP Vila Maria	✓	✓	✓
Resin RS – Balneário Pinhal	✓		✓



FSC®: international certification, which ensures that the raw material used comes from an ecologically correct, socially just and economically viable forest.

ISO 14001:2015: international Standard that specifies the requirements for the creation of an Environmental Management System for environmental protection and rapid response to changes in environmental conditions. It considers environmental aspects influenced by the organization and others that can be controlled by it.

ISO 14064:2006: the international standard that certifies greenhouse gas inventories, voluntarily prepared by the organizations.

We have been dedicated to the analysis and deployment of actions and investments with a view to ISO 14001: 2015 certification in units not yet certified. In 2018, we conducted an internal audit at the Resin Unit RS - Balneário Pinhal as a preparatory action for the 14001: 2015 certification.

(102-11, 102-43 and 416-1) This series of guidelines and requirements applicable to our businesses are based on the creation and review of internal procedures, respecting the particularities of each unit for the identification of environmental aspects and impacts, environmental licensing and environmental controls. We applied analysis of significance of the impacts verified in our productive processes that guide the definition of the applied controls and internal audits are executed to ensure compliance with processes and mitigation of impacts.

Throughout the year, the involvement of the areas was paramount for the quality and environmental management, with emphasis on initiatives that involved restructuring and support to processes and preparation for software implementation to monitor indicators.

As we closed 2018, we devoted 334 hours to environmental education, mobilizing 1,853 people, and invested R\$ 5,782,252.65 in environmental initiatives that include awareness actions regarding the businesses interaction with natural resources.

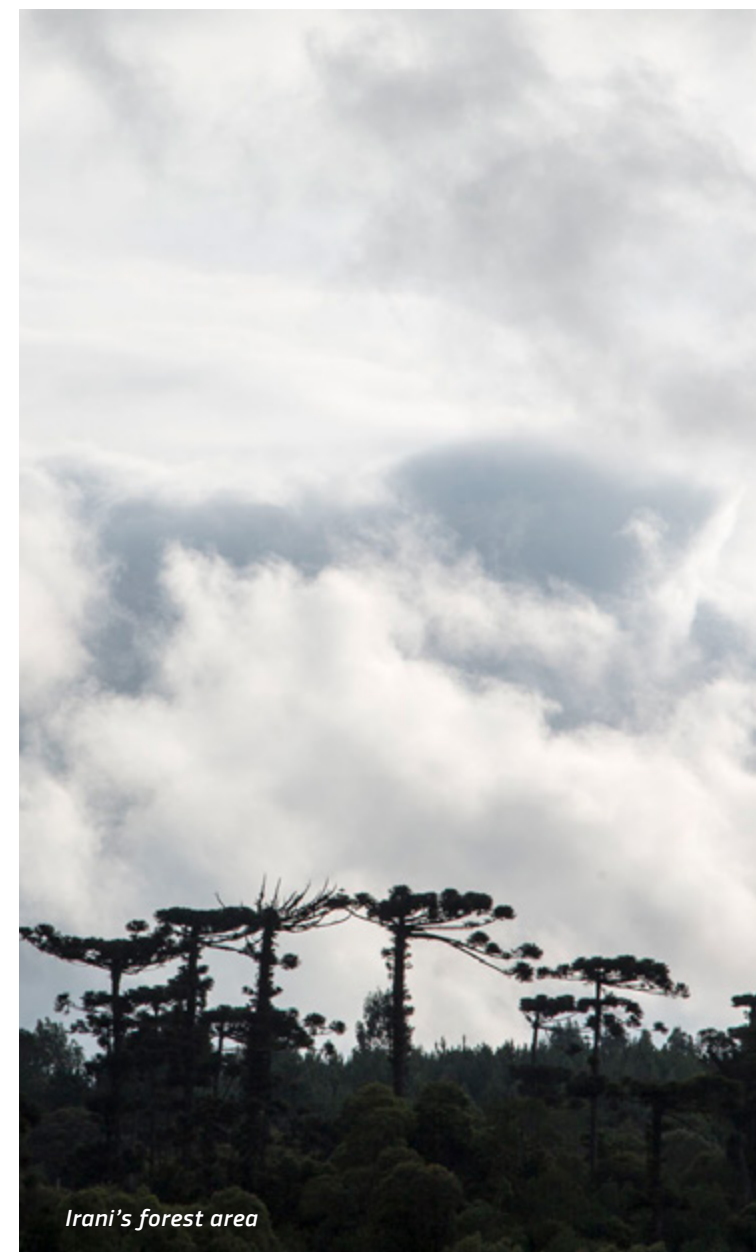
Our environmental practices received four awards: Sustainability Recognition of the Gaúcho Quality and Productivity Award, ADVB / SC Citizen Company Award, 14th AmCham Rio Brasil Environmental Award and ECO® 2018 - 36 YEARS AmCham & Estadão Award.

In 2018, we received an environmental fine applicable to the Paper Unit MG - Santa Luzia in the total amount of R\$ 18,940.36.



The Future We Want:

- Implement software to monitor quality and environmental indicators
- Execute, in 2019, the actions foreseen in the action plan of the environmental education programs of the units



Irani's forest area

Water and effluents

(103-1, 103-2 and 303-1) The conservation of biodiversity, the preservation of springs and other water sources, as well as appropriate management is a key factor to the sustainability of long-term processes. Essential to our business, water is closely linked to production processes, from seed cultivation to final product and its conservation is one of the requirements of the FSC® certification. **(103-2 and 303-1c)** In this sense, we respect the legal parameters applicable to the use and consumption of water and effluent generation and we also participate in river basin committees with other stakeholders, making use of its guidelines for the management of these topics in the Company.

Part of the energy generated in Santa Catarina also depends on this natural resource to supply a Small Hydroelectric Plant (SHP) and two Centrais Geradoras Hidrelétricas – CGH (Hydroelectric Generating Plants). The water sources supplying industrial units are granted by responsible authority, except those from concessionaires. This grant for capture and use of water indicates that there is no significant impact on the respective water bodies due to the volume captured.

The last monitoring campaign for ichthyofauna in the water collection of the Paper Unit identified 646 types divided into 9 species. This source is 22 m wide by 70.02 km long and is not located in protected areas.

We are also constantly attentive to the opportunities for efficiency in use and consumption, reduction of use, alternatives of reuse and closure of circuits.

(303-1c) Potential impacts related to water consumption are addressed to customers and suppliers in the form of compliance with FSC® standards, through their strict criteria, focusing on the environmental conservation from forest management to the finished product.

Total water withdrawn per source (m³)

Source	2016	2017	2018
Surface	4,695,140	4,745,355	4,728,241
Underground	172,487	154,437	158,401
Water Distributor	9,838	17,201	15,933
Total	4,877,465	4,916,993	4,902,575

Notes:

Surface (River Capture): Paper SC, Paper MG and Corrugated Containerboard Packaging SC units. Underground (Wells): Paper MG, Corrugated Containerboard Packaging SP - Indaiatuba, Corrugated Containerboard Packaging SP – Vila Maria and Resin RS units. Concessionaire: (Casan, Sabesp and Corsan): Paper SC, Corrugated Containerboard Packaging SC, Corrugated Containerboard Packaging SP – Vila Maria and Resin RS units.

(303-3d) The withdrawal water data comes from daily readings performed on the flow meters.

(303-3b, 303-3c) The withdrawn water is freshwater and not from regions presenting water stress.

(103-2, 103-3 and 303-1d) Over time, we monitor the water consumption in our processes and we believe that, currently, we have reached stability indices demonstrated by the specific consumption per ton produced, which is why we do not set goals related to this topic.

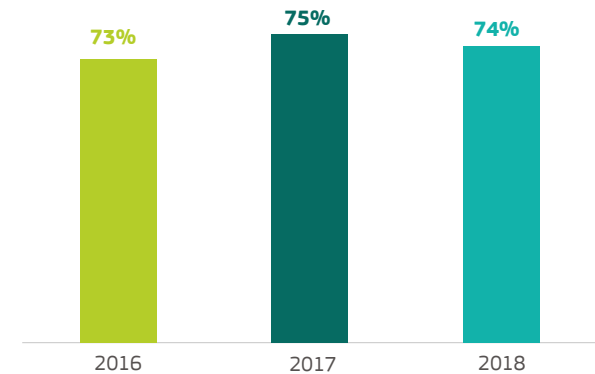
	Specific water consumption (m ³) per gross ton produced			Specific water consumption (m ³) per net ton produced		
	2016	2017	2018	2016	2017	2018
Paper SC – Campina da Alegria	19.56	18.90	19.37	20.80	20.00	20.56
Paper MG – Santa Luzia	2.52	3.48	3.58	2.64	3.65	3.76
Corrugated Containerboard Packaging SC Campina da Alegria	0.20	0.20	0.23	0.20	0.23	0.25
Corrugated Containerboard Packaging SP Indaiatuba	0.31	0.28	0.29	0.32	0.31	0.32
Corrugated Containerboard Packaging SP Vila Maria	0.56	0.46	0.49	0.54	0.48	0.53
Resin RS – Balneário Pinhal	2.35	1.99	2.75	2.38	1.99	2.76

Reused and unused water from the SC Paper Unit – Campina da Alegria (303-3)

	2016	2017	2018
Water not reused (m ³)	4,643,554.40	4,620,402.78	4,589,999.40
Water reused (m ³)	12,434,824.66	14,072,687.28	12,818,684.29
Total (m ³)	17,078,379.06	18,693,090.06	17,408,683.69

Note: data is obtained from flow meters and outflow totalizers

Percentage of recycled water - SC Paper Unit – Campina da Alegria (303-3)



Note: data is obtained from flow meters and outflow totalizers.

Amount of recirculated water at SC Paper Unit – Campina da Alegria (303-3)

Equipment	m ³ /h	m ³ /month	m ³ /year
ETE HPB	290.00	205,585.83	2,467,030.00
TG1	429.76	243,494.85	2,921,938.24
TG2	450.00	86,362.50	1,036,350.00
TG3	240.67	172,781.00	2,073,372.05
Torres	500.00	360,000.00	4,320,000.00
TOTAL	1,910.43	1,068,223.69	12,818,684.29

(103-2 and 303-4b) Effluents from production processes, equipment cleaning, tank drains and cooling water are treated to remove the solid matter and stabilize the dissolved organic matter before the water is returned to its source, to freshwater.

(303-4, 303-5 and 306-5) All water bodies affected by discharges or water runoff from the Company’s effluent treatment come from freshwater and are not located in environmental protection areas.

Unit	Water body size	
	Width	Length
Paper SC- Campina da Alegria	22m	70.02km
Corrugated Containerboard Packag-ing SC- Campina da Alegria	22m	70.02km

Note: The value of biodiversity was not measured. The information does not apply to Corrugated Containerboard Packaging SP – Indaiatuba, Corrugated Containerboard Packaging SP – Vila Maria and Resin RS – Balneário Pinhal units.

(303-2 and 303-4d) The priority substances from treated effluent and the quality of the receiving water resource are defined based on the environmental licenses of each unit, which includes the parameters that must be monitored and the limits are established based on the specific environmental legislation for each region.

(303-4d)	Reference standard
Paper SC – Campina da Alegria	Conama Resolution 357/2005
Paper MG – Santa Luzia	Conama Resolution 430/2011 State law 14,675/2009
Corrugated Containerboard Packaging SC Campina da Alegria	State Decree nº8468/1976, article 19A
Corrugated Containerboard Packaging SP Indaiatuba	
Corrugated Containerboard Packaging SP Vila Maria	Not applicable (closed circuit)
Resin RS – Balneário Pinhal	Conama Resolution 420/2009

(103-3) The use of control parameters is essential for monitoring the quality of water emissions. Systematically and periodically we carry out analyzes in internal and external laboratories recognized by the environmental agency. The reports are periodically sent to the agency, as determined in the conditions of the environmental licenses.

Volume of effluent generated (m³/year)

(303-4)

	2016	2017	2018
Paper SC – Campina da Alegria	4,478,095	4,306,039	4,217,845
Paper MG – Santa Luzia	11,145	9,890	9,541,86
Corrugated Containerboard Packaging SC Campina da Alegria	9,466	10,696	9,906
Corrugated Containerboard Packaging SP Indaiatuba	5,044	6,320	3,427
Corrugated Containerboard Packaging SP Vila Maria	7,432	5,386	6,332
Resin RS – Balneário Pinhal	4,511,182	4,338,331	4,247,052

Note: the previous report, indicated the incorrect sum of the total effluent generated in 2017. This information has been adjusted in this edition.

Tratamento

Unit	Destination	Treatment Method	Legal Pa-rameters	Is the effluent reused byanother organization?
Paper SC - Campina da Alegria	Rio do Mato	Biological - prolonged aeration	Conama Resolution 430/2011	No
Corrugated Containerboard Packaging SC - Campina da Alegria	Rio do Mato	Biological - prolonged aeration	Conama Resolution 430/2011	No
Corrugated Containerboard Packaging SP - Indaiatuba	City Treatment Station - ETE Mario Aral-do Candello	Physical-chemical	State Decree nº8468/1976, article 19A	No
Corrugated Containerboard Packaging SP - Vila Maria	City Treatment Station - ETE Parque Novo Mundo	Physical-chemical	State Decree nº8468/1976, article 19A	No
Resins RS - Balneário Pinhal	Forest Irrigation	Physical-chemical	Conama Resolution 430/2011	No

	Specific effluent volume (m ³) per gross ton produced			Specific effluent volume (m ³) per net ton produced		
	2016	2017	2018	2016	2017	2018
Paper SC Campina da Alegria	18.41	17.61	17.79	20.06	18.64	18.89
Corrugated Containerboard Packaging SC – Campina da Alegria	0.17	0.15	0.14	0.19	0.17	0.15
Corrugated Containerboard Packaging SP – Indaiatuba	0.11	0.13	0.12	0.13	0.14	0.13
Corrugated Containerboard Packaging SP: Vila Maria	0.00	0.10	0.07	0.09	0.10	0.07
Resin RS:Balneário Pinhal	0.77	0.46	0.47	0.62	0.46	0.47

Note: the Paper MG – Santa Luzia unit has closed circuit.

Energy

(103-1) Self-sufficiency in energy is one of the challenges in our business.

(103-2, 302-1.a, 302-5 and 201-2) Since 2005, we have had a biomass-based cogeneration boiler, a Clean Development Mechanism registered at the United Nations (UN). From forest-based residues, this biomass emits greenhouse gases such as methane and carbon dioxide during the decomposition process in landfills. The reuse of this material for burning in a boiler contributes to the generation of steam used in the production line of the Paper and Corrugated Containerboard Packaging SC units – Campina da Alegria.

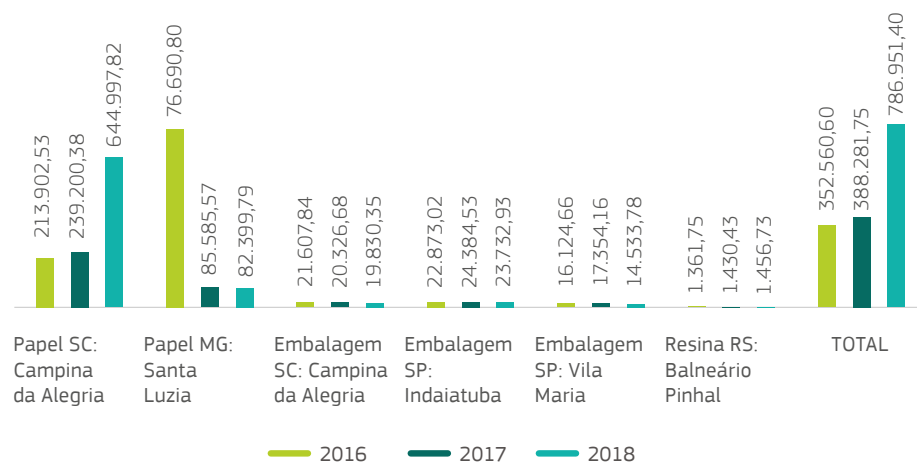
This mechanism was registered as ‘Irani Biomass Electricity Generation Project’, on July 7, 2006. Renovated in 2011 until 2018. We also have a Small Hydroelectric Plant (SHP), two Hydroelectric Generating Centers (CGHs) and four other boilers for the generation of energy in this plant, which comprises our largest industrial park. An automation project has provided us with operational gains, enabling remote operation for the generation of energy from SHP and CGHs.

(103-3, 302-3, 302-4 and 302-5) We developed a series of initiatives aimed at reducing the consumption of electric energy during the productive processes such as the acquisition of more efficient mechanisms, equipment replacement, operational adjustments and use of LED lamps. The results of these initiatives reflect in the achievement of reduction and/or maintenance specific energy consumption targets, in MWh per ton produced.

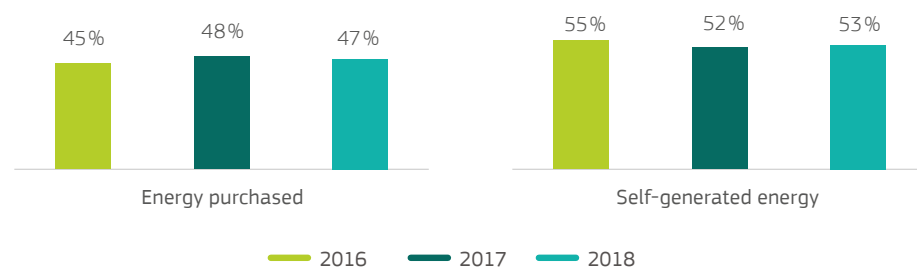
	Specific energy consumption (MWh) per gross ton produced			Specific energy consumption (MWh) per net ton produced		
	2016	2017	2018	2016	2017	2018
Paper SC: Campina da Alegria	0.75	0.75	0.76	0.79	0.79	0.80
Paper MG: Santa Luzia	0.39	0.40	0.39	0.41	0.42	0.41
Corrugated Containerboard Packaging SC – Campina da Alegria	0.10	0.09	0.08	0.10	0.10	0.09
Corrugated Containerboard Packaging SP – Indaiatuba	0.08	0.08	0.08	0.09	0.09	0.09
Corrugated Containerboard Packaging SP – Vila Maria	0.08	0.09	0.08	0.08	0.08	0.08
Resin RS – Balneário Pinhal	0.03	0.03	0.03	0.03	0.03	0.03

Note: The specific metric used to calculate the specific consumption of electricity is gross production and net production. The reason used refers to the energy consumed within the organization, since it does not have enough information to report energy consumed outside of it.

Total energy consumption (GJ) (302-1.c)



Percentage of purchased and self-generated energy (GJ)



Non-renewable fuel consumption (GJ) (302-1.a)

	2017	2018
Paper SC – Campina da Alegria (t)	22,947.20	23,230.00
Paper MG – Santa Luzia (m ³)	277,368,173.76	263,979,850.79
Corrugated Containerboard Packaging SC – Campina da Alegria (t)	6,643,117.19	6,650.65
Corrugated Containerboard Packaging SP – Indaiatuba (m ³)	59,269,382.01	58,941,372.28
Corrugated Containerboard Packag-ing SP – Vila Maria (m ³)	70,243,339.34	53,379,363.54
TOTAL	413,546,959.50	376,330,467.25

Note: the conversion factors were performed based on the guidelines available on the Petrobras website “conversion formulas”.

Renewable fuel consumption (GJ) (302-1.b)

	2017	2018
Paper SC – Campina da Alegria (t)	3,021,071.93	4,133,150.00
Resin RS – Balneário Pinhal (t)	16,317.90	62,994.30
TOTAL	3,037,389.83	4,196,144.30

Note: the conversion factors were performed based on the guidelines available on the Petrobras website “conversion formulas”.

Steam consumption (GJ) (302-1.a)

	Pressão	2017	2018
Paper SC – Campina da Alegria	9,5	2,574,747.04	2,245,834.16
Paper MG – Santa Luzia	12,23	180,513.07	214,775.43
Corrugated Containerboard Pack-aging SC – Campina da Alegria	9,5	42,039.80	38,529.20
Corrugated Containerboard Pack-aging SP – Indaiatuba	13	50,987.74	52,654.97
Corrugated Containerboard Pack-aging SP – Vila Maria	13	42,747.03	34,784.29
Resin RS – Balneário Pinhal	4	36,460.80	22,300.34
TOTAL		2,927,495.48	2,608,878.39

Energy consumed
(302-1 and 302-2)

Fuel	Consumption (Kcal)		Consumption (MJ)	
	2017	2018	2017	2018
Diesel	5,128,414.30	4,676,648.15	196,548.73	179,234.60
Gasoline	60,521.52	54,087.82	2,108.07	1,883.98
GLP Restaurant	20,852.82	15,230.02	1,025.17	748.74
TOTAL			199,681.97	181,187.31

Note: the energy consumed outside the organization was 199,681.97 MJ according to scope 3 of the GHG inventory. The conversion factors are from the Petrobrás website.



The Future We Want:

- Repowering SHPs in the medium term.

Materials and Waste

(103-1) The promotion of the circular economy in the value chain is a commitment of Irani formalized in the strategic map for the 2018-2027 cycle and encouraged by the National Policy on Solid Waste (PNRS - Law 12.305/10). (102-12) In addition, we are represented by the Indústria Brasileira de Árvores (Ibá) tree association, at the Coalition led by the Compromisso Empresarial pela Reciclagem - CEMPRE (Corporate Commitment for Recycling), which negotiated a sectorial agreement for implementation a reverse logistics system for packaging in general. The joint actions of the participating organizations were periodically submitted to the Ministry of Environment's evaluation and focused on reducing at least 22% of packaging disposed in landfills by the end of 2018.

(103-2) The collection and storage of our waste comply with specific procedures in accordance with NBR 10.004/2004 segregated per Class I (hazardous), Class II-A (non-inert) and Class II-B (inert), thus avoiding contamination.

Volume of renewable and non-renewable materials (tons)

(301-1)

	2017		2018	
	Renewable	Non-renewable	Renewable	Non-renewable
Paper SC – Campina da Alegria	680,683.18	11,942.69	633,587.62	12,232.23
Paper MG – Santa Luzia	66,553.22	1,026.34	68,902.93	1,058.14
Corrugated Containerboard Packaging SC – Campina da Alegria	66,952.60	626.71	67,502.87	597.68
Corrugated Containerboard Packaging SP – Indaiatuba	86,596.49	683.01	85,705.78	631.83
Corrugated Containerboard Packaging SP – Vila Maria	66,830.97	342.68	53,443.78	228.91
Resin RS – Balneário Pinhal	13,982.51	Não se aplica	17,172.40	Não se aplica
Total	981,598.96	14,621.42	926,315.37	14,748.79

Note: only the materials consumed in the production process are considered.

(103-3) The consumption of raw materials and inputs in the process directly impacts our operating costs and the risk management is done through a set of rigorous and constant controls, allowing for analysis oriented towards reuse and recycling, reducing the volume of waste disposed in licensed landfills and significant environmental impacts.

Percentage of recycled materials used in the process

(301-2)

	2017	2018
Paper SC – Campina da Alegria	23.82	23.69%
Paper MG – Santa Luzia	88.76	92.90%
Corrugated Containerboard Pack-aging SC – Campina da Alegria	86.99	87.55%
Corrugated Containerboard Pack-aging SP – Indaiatuba	87.37	87.36%
Corrugated Containerboard Pack-aging SP – Vila Maria	92.58	92.58%

Percentage of recovered materials used in the process

(301-3)

	2017	2018
Paper SC – Campina da Alegria	8.34	8.91%
Paper MG – Santa Luzia	10.50	9.82%

Note: the refill from the packaging units was considered as recovered material. The refill is a waste of the boxes and sheets productive process. The control of the quantity that returns to the Paper SC unit is done by invoices.

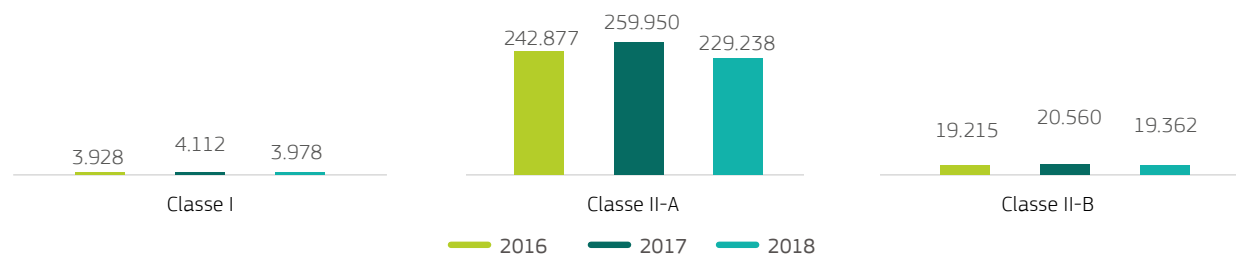
	Specific material consumption per gross ton produced			Specific material consumption per net ton produced		
	2016	2017	2018	2016	2017	2018
Paper SC – Campina da Alegria	2.82	2.83	2.72	3.00	3.00	2.89
Paper MG – Santa Luzia	1.25	1.14	1.19	1.31	1.20	1.25
Corrugated Containerboard Packaging SC – Campina da Alegria	1.02	1.02	1.03	1.06	1.17	1.11
Corrugated Containerboard Packaging SP – Indaiatuba	1.04	1.02	1.25	1.09	1.14	1.14
Corrugated Containerboard Packaging SP – Vila Maria	1.02	1.05	1.03	1.07	1.09	1.12
Resin RS – Balneário Pinhal	1.25	1.19	1.27	1.25	1.19	1.27

Note: only the materials consumed in the production process are considered.

Total weight of waste (in tons)

	2016	2017	2018
Paper SC – Campina da Alegria	232,863	249,562	219,542
Paper MG – Santa Luzia	5,486	6,480	6,730
Corrugated Containerboard Packaging SC – Campina da Alegria	8,982	9,573	9,370
Corrugated Containerboard Packaging SP – Indaiatuba	9,773	10,328	9,594
Corrugated Containerboard Packaging SP – Vila Maria	6,272	6,696	5,294
Resin RS – Balneário Pinhal	2,644	1,983	2,048
Total	266,020	284,622	252,578

Total waste weight by type



Note: the increase in class I waste was verified due to the newest reforms carried out in the Broby II and III ovens.

Total weight of waste broken down by disposal method (tons) (306-2 and 306-4a)

	Non-Hazardous		Hazardous	
	2017	2018	2017	2018
Recycling	32,706.32	31,704.84	3,798.37	3,861.24
Reuse	90,491.83	70,359.52	0.00	87.87
Incineration	0.03	0.00	0.03	8.17
Blending	4.67	0.00	4.67	7.20
Composting	2,145.13	16,710.38	0.00	0.00
Remedial Tutoring	133,252.82	108,728.23	0.82	0.00
Landfill	21,913.69	21,094.55	308.06	18.51
TOTAL	280,514.48	248,591.52	4,111.95	3,983.00

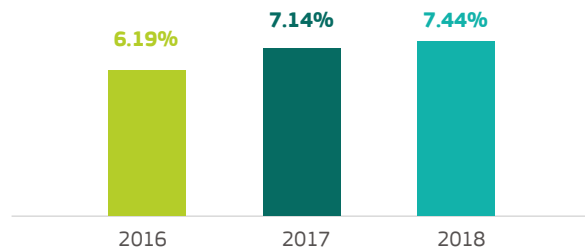
Note: the waste disposal method was determined based on the classification of the waste, in accordance to NBR 10.004. The total amount of hazardous waste was transported and treated by duly licensed companies. There was no import or export of hazardous waste, so there is no percentage in terms of international transportation.



Djonatan Dalla Costa, employee at Paper unit SC - Campina da Alegria

	Specific volume of waste per gross ton produced (tons)			Specific volume of waste per net ton produced (tons)		
	2016	2017	2018	2016	2017	2018
Paper SC – Campina da Alegria	0.98	1.02	0.93	1.04	1.08	0.99
Paper MG – Santa Luzia	0.10	0.11	0.11	0.11	0.11	0.12
Corrugated Containerboard Packaging SC – Campina da Alegria	0.15	0.14	0.14	0.15	0.17	0.15
Corrugated Containerboard Packaging SP – Indaiatuba	0.13	0.12	0.11	0.13	0.14	0.13
Corrugated Containerboard Packaging SP – Vila Maria	0.11	0.10	0.10	0.11	0.11	0.11
Resin RS – Balneário Pinhal	0.22	0.17	0.15	0.22	0.17	0.15

Percentage of waste sent to landfill



Note: at the Paper MG unit – Santa Luzia we studied the possibility of installing a plastic recycling plant. On the other hand, the Resin RS unit – Balneário Pinhal, the organic waste was sent to landfill due to the Fundação Estadual de Proteção Ambiental (Fepam) requirement.



Innovative technologies are prioritized, as well as the development of new chains that can use our waste as raw material. Thus, we promote the circular economy and contribute to the generation of jobs and income in the surrounding communities.

Representing around 70% of paper pulp raw materials, corrugated cardboard recycled at Paper SC - Campina da Alegria and Paper MG - Santa Luzia units contribute to waste reduction in urban areas.

(306-4) Because the Paper Unit SC – Campina da Alegria presents the Company’s largest volume of waste generation, that’s where we have been dedicating our best efforts to this unit to discover solutions and alternatives that encourage the circular economy. All waste recycled or disposed of externally is sent with a document of Movement and Transport of Residues (MTR), issued through the online control system of the Environment Institute (IMA), ensuring that the waste is sent only to licensed companies in compliance with current legislation.

Initiatives focused on circular economy:

- **CATEGORIZED FILTER WASTE**

Context: The woodyard generates the largest volume of waste at the Unit. The wood chips classified as unsuitable for the production of pulp represent 37,401.41 tons/year or 17% of the total volume. This residue is destined for burning in the Energy Cogeneration Boiler for the generation of energy in the form of steam.

Captured results:

- We stopped investing R\$ 2,431,091.94 thousand / year in the purchase of biomass to feed the boiler
- Cost avoided of R\$ 1,870,070.72 / year with transportation of the waste to the landfill
- We stop emitting about 1,815 ton / year in GHG

- **WOOD BARK FROM DEBARKER**

Context: this is the second largest volume of waste generated in the unit, with about 40,922.79 tons / year or 18% of the total volume. The wood bark is also destined for burning in the Energy Cogeneration Boiler, generating energy for the production process.

Captured results:

- We stopped investing R\$2,659,981.65/year in biomass purchasing for boiler feed
- Cost avoided of R\$ 2,046,139.73 / year with transportation of the waste to the landfill
- We stop emitting about 1,985 ton / year in GHG

- **CALCIUM CARBONATE**

Context: result of the black liquor treatment process used in the paper production in the order of 42,155.57 tons / year, or 19% of the total volume. This waste is marketed throughout the southern region of Brazil for the correction of agricultural soil with the proper registration of the Ministry of Agriculture and Livestock (MAPA).

Captured results:

- R\$ 369,881.987 / year in revenue generated
- Cost avoided of R\$ 2,107,778 / year with transportation of the waste to the landfill
- We stop emitting 1,636 ton / year in GHG



- **ASH FROM THE ENERGY COGENERATION BOILER**

Context: Our cogeneration boiler is equipped with a gas system scrubbing system for retention of particles. The water containing the particulate material is filtered, generating two waste products (fine ash and thick ash). In 2018, we received authorization for secondary use MAPA SISV nº002 / 2018 for ash disposal in agriculture.

Fine ash: part of this material is made available to two partners who use this waste to produce agricultural substrate. Also in 2018, we have concluded another partnership that consists in sending part of the ashes from the cogeneration boiler to a company that will dry the material and send to the cement industry as a source of biomass. The enterprise installed in Campina da Alegria started operation in February of 2019 offering 10 jobs.

Thick ash: part of the volume returns to be re-burned in the boiler, generating energy and steam. Another part is sent to a partner as a raw material for the production of about 3,600 tons / year in coal briquettes. The project is located in an area provided by Irani and generates about 20 direct jobs in the local community. In 2018, this initiative was recognized by the Citizen Company Award of ADVB / SC, 14th AmCham Rio Brasil Environmental Award and ECO® 2018 - 36 years AmCham & Estadão Award, as well as the Sustainability Recognition of the Gaúcho Award for Quality and Productivity.

Also in 2018, we have concluded another partnership consisting of sending part of the ashes of the cogeneration boiler to a company that will dry the material and send it to the cement industry as a source of biomass. The enterprise installed in Campina da Alegria began operation in February 2019 offering 10 jobs.

- **FIBER RECOVERED FROM THE EFFLUENT TREATMENT PLANT (ETE)**

Context: At the ETE we recover about 8,213 ton / year in fibers is used by a partner as a raw material for the production of agricultural substrate and organic fertilizer.

Captured results:

- Cost avoided of R\$ 410,650.00 thousand / year with transportation of the waste to the landfill
- We stop emitting 318 tons / year in GHG

The partnership with the University of West Santa Catarina (Xanxerê Campus) is still ongoing. This study performs the analysis of the application of recovered fiber to the cultivation of vegetables, such as soy, corn and pasture. The forecast for completion is July 2019. The study in partnership with the Brazilian

Agricultural Research Corporation (EMBRAPA) is continuous to use this waste as a source of nutrition for the forest soils

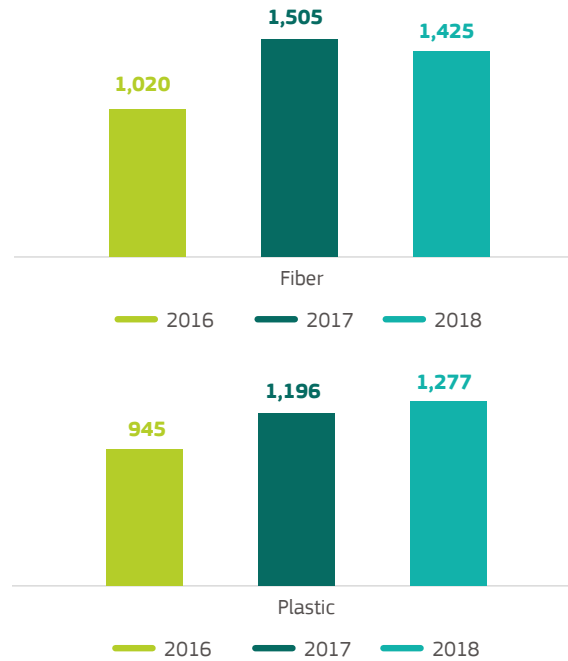
• **PLASTIC FROM PAPER TRIMMINGS**

Context: We are pioneers in setting up a plant for plastic recycling and fiber recovery. The paper trimmings arrive at the recycling facility contaminated with other types of waste such as sand, metal and mainly plastic. This material is separated, washed and processed, giving rise to a new product: mixed plastics trimmings. This waste is commercialized and can be transformed into diverse products for the automotive, footwear and construction industry.

Captured results:

- We saved about R\$ 940 thousand on trimmings purchases
- Cost avoided of R\$ 148 thousand / year with transportation of the waste to the landfill
- We stop emitting 138 tons / year in GHG

Annual plastic and fiber recovery (tons)
(306-2)



• **WOOD BARK FROM THE ALIGNMENT TABLE**

Context: about 8,696,385 tons / year of waste from the alignment table are sent for burning in the cogeneration boiler, generating energy in the form of steam.

Captured results:

- Cost avoided of R\$ 435 thousand / year with transportation of the waste to the landfill
- Cost avoided by not purchasing biomass: R\$565 thousand / year
- We stop emitting 337 tons / year in GHG

• **SOAP BLEACH**

Context: soap bleach comes from a chemical recovery process and comprises about 3,644.71 tons / year or 1.6% of the total volume of waste generated at the unit and is sold for extraction of a substitute compound to the BPF oil and of shale oil known as tail oil, besides being an input for the manufacture of resins, emulsifiers and mineral flotation.

Captured results:

- R\$ 363,049 thousand / year in revenue generated
- Cost avoided of R\$ 2,759,045 / year with transportation of the waste to the landfill
- We stop emitting 36 tons / year in GHG

• **REUSE OF FLEXOGRAPHIC INKS**

Context: we defined and implemented a practice for the reuse of flexographic inks resulting from the cleaning of equipment at the end of the printing of packaging lots at the Corrugated Containerboard Packaging SC - Campina da Alegria unit. The volume, previously sent to the effluent treatment plant, gave rise to new batches of black printing ink.

Captured results: 9.74% reduction in the consumption of ink and 3.5% of generated

	2016	2017	2018
Reused ink (t)	-	6,547	3,118
Ink consumption (t)	162,416	156,691	141,428
Production of boxes (t)	43,946.06	46,392.47	50,294.41
Ink consumption per ton of box produced	0.004	0.003	0.003
Generated wastewater (m³)	11,145.00	9,890.08	9541.86

• **REUSE OF PALLETS**

• Context: with a focus on reducing operating costs, we have implemented an initiative for the reuse and recovery of own or purchased pallets.

• **Captured results**

Of the total volume of pallets used in 2018, 22% were new and 78% reused or recovered, providing financial savings exceeding R\$ 1.5 million.

In the other units, there are also initiatives that encourage the circular economy. All the wood chips, trims and tubelets generated in the corrugated containerboard packaging production processes are sent to the Paper - SC and Paper - MG units, incorporated as raw materials and transformed, again, into packaging paper.



The Future We Want

- Reduce to 2% the total volume of waste sent to landfill in Santa Catarina until 2027.

Emissions

(103-1) We are a carbon neutral company by nature and the first Brazilian company to certify a Greenhouse Gas (GHG) Inventory pursuant to ISO 14064:2006 **(305-1.e)** We are also guided by the GHG Protocol and the National Policy on Climate Change in scopes 1, 2 and 3.

Scope 1 - Direct emissions: all GHG emissions from the industrial process, ranging from fuels and reagents to disposal of waste in industrial landfills.

Scope 2 - Indirect emissions: covers GHG emissions from energy purchased from third parties.

Scope 3 - Indirect emissions from other sources: accounts for fuel consumption in transporting raw materials, inputs, products and waste to third-party landfills.

(103-2, 305-1.f and 305-2.f) The inventory identifies and quantifies the sources of greenhouse gases (GHG) emissions and how we have evolved accordingly at the units: Paper SC - Campina da Alegria, Paper MG - Santa Luzia, Corrugated Containerboard Packaging SC - Campina da Alegria, Corrugated Containerboard Packaging SP - Indaiatuba, Corrugated Containerboard Packaging SP - Vila Maria, Resin RS - Balneário Pinhal, our forest areas in Santa Catarina, the offices located in Joaçaba and Porto Alegre and the Habitusul Florestal subsidiary located in Rio Grande do Sul. **(305-1b, 305-1.g, 305-2c and 305-3b)** Our GHG inventory does not considers emissions from HFCs, PFCs, SF6, NF3 because we do not use precursor substances of these gases in industrial processes. We consider, for calculation purposes, the emissions of carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O).

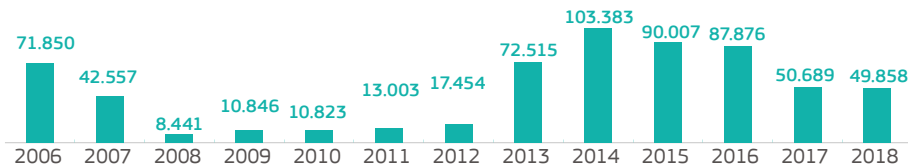
(305-1d, 305-2d and 305-3d) The base year used until 2013 was 2006, when we published our first greenhouse gas inventory. In 2013, we incorporated the Paper Unit MG – Santa Luzia and Corrugated Containerboard Packaging Unit SP - Vila Maria units and their respective emissions into Inventory and the challenge of improving operating efficiency at both locations. In this sense, as of 2017 we can see the reflection of this effort to reduce emissions, especially through the installation of more efficient boilers.

Emissions from biogenic sources (in CO₂eq tons)

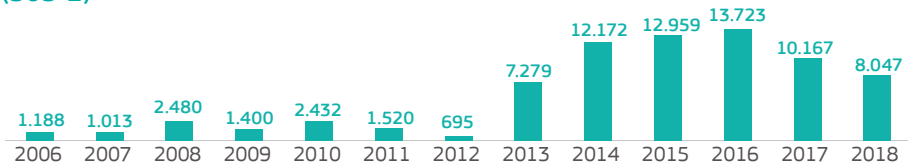
(305-1c and 305-3c)	2017	2018
Biodiesel and gasoline – Scope 1	110.98	132.24
Ethanol - Scope 1	3.07	14.70
Biodiesel and gasoline – Scope 3	763.48	645.52
Black liquor - Scope 1	163,506.51	155,503.54
Biomass – Scope 1	765,521.51	729,000.07
TOTAL	929,905.55	885,296.07

(305-3f, 305-3g) Note: the emission factors used for calculation purposes are made available by the Ministry of Science and Technology and compose the calculation of indirect emission following the ISO 14040: 2006 guidelines.

Scope 1 – Direct GHG Emissions (Ton CO₂eq)
(305-1.a)



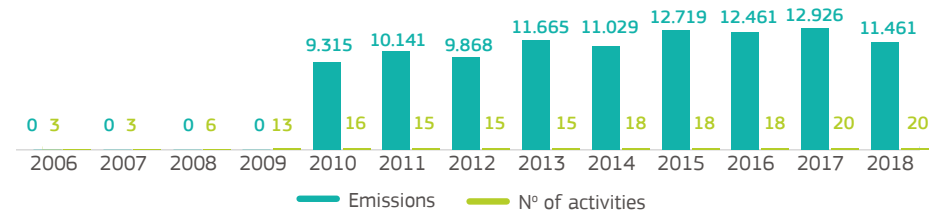
Scope 2 – Indirect GHG Emissions (Ton CO₂eq)
(305-2)



(305-2e, 305-2g) Note: the emission factors used for calculation purposes are made available by the Ministry of Science and Technology and compose the calculation of indirect emission following the ISO 14040: 2006 guidelines.

(305-2 and 305-3d) It is possible to observe the evolution of Scope 3 as of the base year through the number of activities in each year. Over time, new sources have been included, although this scope does not require such accounting. Reflecting good management practices and a dedicated effort to improve our Inventory, we have chosen to make this inclusion.

Summary of Scope 3 – Summary of Scope 3 – Other sources (MgCO₂eq)



(305-3f, 305-3g) Note: The IPCC 2006 Guidelines are considered as the source of the emission factors used and the rates of global warming potential, following the ISO14064: 2006 guidelines.



Irani's forest area

Distribution of the indices according to the operating units
(305-4c)

Unit	Base year: 2006			Base year: 2013		2018			
	Production	Emissions	Intensity	Intensity (1,2,3)	Intensity (1, 2)	Production	Emissions	Intensity (1,2,3)	Intensity (1, 2)
Paper SC – Campina da Alegria	172.201	64.127	0,37	0,07	0,06	237.022	30.318	0,13	0,10
Paper MG – Santa Luzia	-	-	-	0,72	0,69	58.470	19.906	0,34	0,27
Corrugated Containerboard Packaging SC Campina da Alegria	30.998	4.454	0,14	0,03	0,03	61.320	1.478	0,02	0,02
Corrugated Containerboard Packaging SP Indaiatuba	47.859	4.725	0,10	0,08	0,06	75.582	6.675	0,09	0,05
Corrugated Containerboard Packaging SP Vila Maria	-	-	-	0,22	0,21	59.075	4.144	0,07	0,08
Resin RS – Balneário Pinhal	5.467	550	0,10	1,79	1,79	13.472	354	0,03	0,01

(305-4.a) Note: the intensity reports the specific per unit, that is, the emission divided by the production causes the indicated intensity for each Operational unit.



GHG emissions by type of gas (Scopes 1,2 and 3)
 (305-2.c, 305-3.b, 305-4d and 305-5)

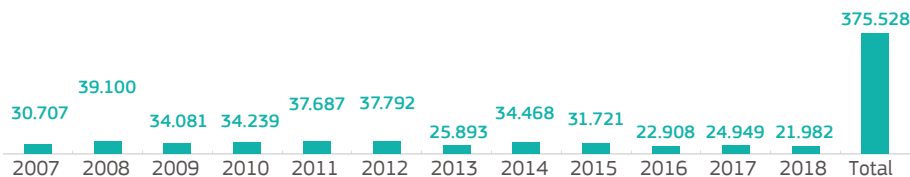
Units	Total in Mg CO ₂ eq					
	2017			2018		
	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)	Carbon Dioxide (CO ₂)	Methane (CH ₄)	Nitrous Oxide (N ₂ O)
Administrative	399	0	4	395	0	4
Paper SC – Campina da Alegria	10.831	11.981	9.131	9.554	12.077	8.686
Paper MG – Santa Luzia	19.850	86	39	19.782	88	36
Corrugated Containerboard Packaging SC – Campina da Alegria	1.529	79	3	1.392	84	3
Corrugated Containerboard Packaging SP – Indaiatuba	7.385	78	52	6.555	78	41
Corrugated Containerboard Packaging SP – Vila Maria	5.153	575	8	3.578	562	4
Forestry SC – Campina da Alegria	4.790	7	80	4.578	7	76
Forestry RS – Balneário Pinhal	1.424	35	24	1.003	34	17
Resin RS – Balneário Pinhal	102	59	78	213	58	82
TOTAL	51.463	12.901	9.418	47.050	12.987	8.950
	Percentage of gases			Percentage of gases		
	70%	17%	13%	68%	19%	13%

(305-4.a) Note: Forestry SC and Forestry RS correspond to Irani's forest areas. Administrative comprises our offices in Joaçaba and Porto Alegre.

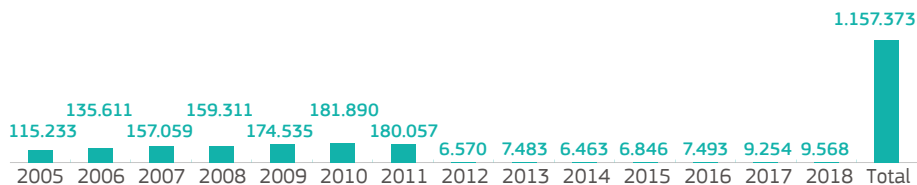
(103-3 and 305-5) The Company's emissions totaled 68,987 Mg CO₂eq. This result was 6% lower than in 2017 and 25 % below the year 2013 (base year). Starting in 2007, the CDM project of the Effluent Treatment Station was implemented with a consequent reduction of direct emissions. The increase identified as of 2013 considers the merging of the Paper MG and Corrugated Containerboard Packaging SP - Vila Maria units. As of 2017, direct emissions were reduced significantly in the RS Resin Unit, which failed to implement the anaerobic treatment of its effluents, starting to release them into a water body for irrigation purposes in the Rio Grande do Sul planting areas. There was also a

significant reduction of emissions in the Paper MG Unit, where there was a correction in the calculation of the natural gas consumption. This was because in 2016 the demand for the average Grid emission factor was accounted for in the power utility's invoice, justified by the greater use of renewable energy in the country in 2017 and the high rainfall levels that reduced the need for the activation of thermoelectric plants. For their part, indirect emissions from other sources increased mainly due to the registration of the consumption of diesel oil for the transportation of waste from the Corrugated Containerboard Packaging Unit SP - Indaiatuba. Our calculations are based on the guidelines of ISO 14064: 2006.

Certified emission reductions from the Effluent Treatment Station (in tons of CO₂eq) **(305-5)**



Certified emission reductions from the Energy Cogeneration Boiler (in tons of CO₂eq) **(305-5)**





Summary by emission category (2006 to 2018)
(305-3d and 305-5)

Categories	Escopo	Base year: 2006	2007	2008	2009	2010	2011	2012	Base year: 2013	2014	2015	2016	2017	2018	Change % (2006 2018)	Change % (2013 2018)
Effluent treatment (industrial + domestic)	1	58.761	28.966	222	187	509	1.383	5.012	14.391	31.135	15.323	24.244	790	788	-94,53%	-98,66%
Power consumption	2	1.188	1.013	2.480	1.400	2.432	1.520	695	7.279	12.172	12.959	13.723	10.167	8.047	10,56%	577,36%
Fuel consumption	1	9.282	7.811	4.589	5.700	4.062	4.480	4.856	49.162	63.241	65.433	56.319	42.034	40.110	-18,41%	332,13%
Outsourced fleet	3	4.647	5.742	5.945	6.927	9.246	10.361	9.882	11.302	10.884	12.523	12.312	12.763	10.950	-3,12%	135,63%
Reagent consumption	1	2.289	3.275	174	199	453	857	756	2.044	2.060	1.880	1.137	1.238	1.956	-4,33%	-14,55%
Solid waste treatment (industrial landfill)	1	1.518	2.504	3.456	4.760	5.799	6.282	6.830	6.917	6.947	7.371	6.176	6.626	7.004	1,26%	361,39%
Solid waste treatment (private landfill)	3	0	0	0	0	69	53	28	363	145	196	148	163	133	-63,46%	0,00%
TOTAL		77.685	49.311	16.866	19.173	22.570	24.936	28.058	91.458	126.584	115.685	114.060	73.782	68.987	-24,57%	-11,20%

(305-5e) Note: Our calculations are based on the guidelines of ISO 14064: 2006

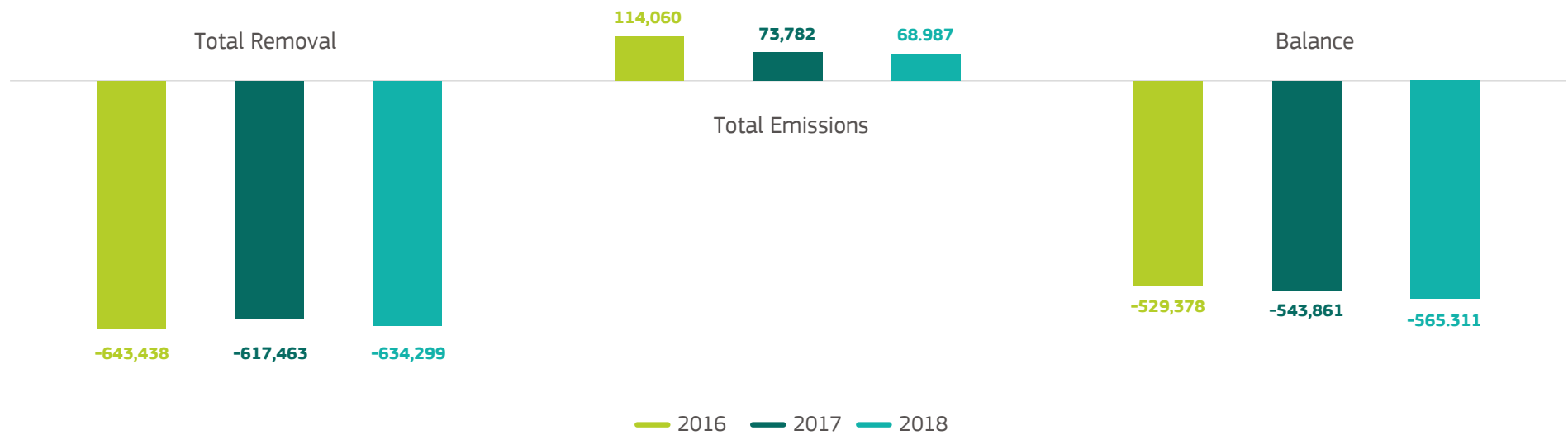
Analysis of causes for the observed change in emissions
(305-4.a and 305-5)

Activities	Causes
Power consumption (Scope 2)	Reduction in global consumption in MW / H compared to 2017 due to the production reduction at Paper SC - Campina da Alegria and Paper MG - Santa Luzia units. The reduction of emissions was also influenced by the GRID factor, disclosed by the Federal Government, pointing to a reduction in the average annual emission of the grid due to the greater use of renewable energy in the country.
Fuel consumption (Scope 1)	Influenced by the lower biomass consumption in the boiler of the Paper SC - Campina da Alegria unit and reduction of the natural gas consumption in the Corrugated Containerboard Packaging SP – Vila Maria unit.
Outsourced fleet (Scope 3)	Small reduction in the outsourced fleet fuel consumption. Reduction of transfers from the Paper producing units to the conversion units of this Paper into Corrugated Containerboard Packaging. Another factor was the reduction of third-party fuel consumption for transportation of employees, mainly at the Paper SC – Campina da Alegria and Resin RS – Balneário Pinhal units.
Reagent consumption (Scope 1)	Small increase influenced by the Paper MG - Santa Luzia unit and justified by the consumption of the cationic polymer.
Solid waste treatment (industrial landfill) (Scope 1)	Reduction of waste sent to landfill in relation to 2017, contributing to a small reduction in emissions by industrial waste sent to owned landfill.
Solid waste treatment (industrial landfill) (Scope 3)	Reduction in CO2eq emissions in private landfill due to the reduced volume of waste destined for third-party landfill.

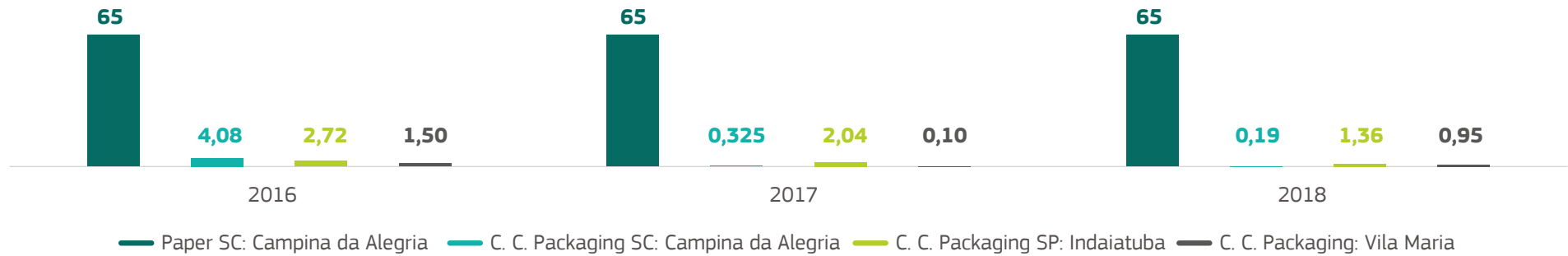
Emission by category (in Mg CO₂ eq)
(305-3d and 305-5)

Categorias de emissões	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	% 2006 – 2018	% 2013 – 2018
Escopo 1	71.850	42.557	8.441	10.846	10.823	13.003	17.454	72.515	103.383	90.007	87.876	50.689	49.858	-30,61%	-31,25%
Escopo 2	1.188	1.013	2.480	1.400	2.432	1.520	695	7.279	12.172	12.959	13.723	10.167	8.047	573,52%	9,93%
Escopo 3	4.647	5.741	5.945	6.927	9.315	10.414	9.910	11.665	11.029	12.719	12.461	12.926	11.082	146,63%	-1,75%
Total	77.685	49.311	16.866	19.173	22.570	24.936	28.058	91.458	126.584	115.686	114.060	73.782	68.987	-10,77%	-24,21%

Emissions vs removals balance (tons of CO₂eq)
(305-4)

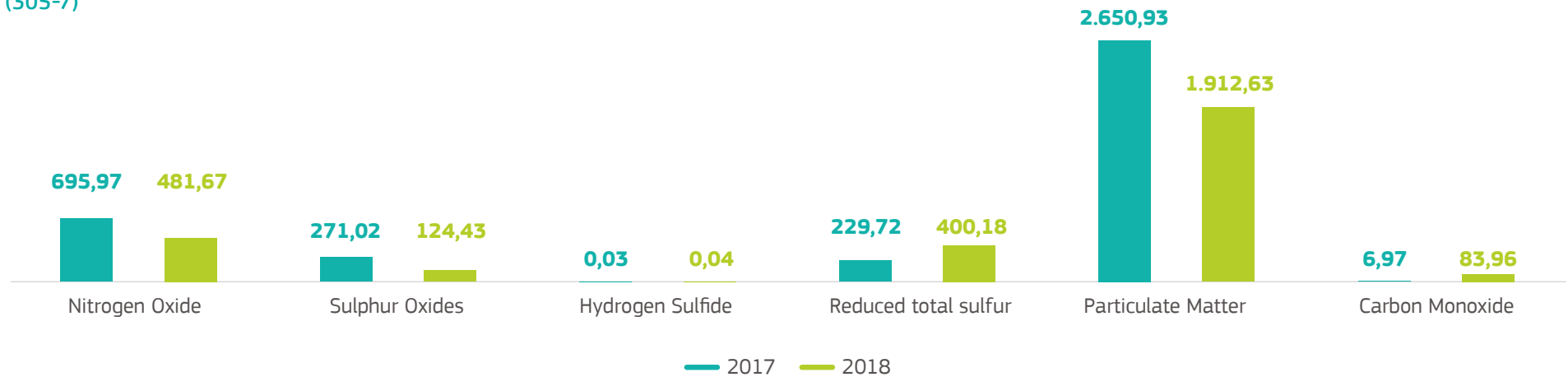


Emissions of ozone-depleting substances
(305-6)



Note: The calculation can be made directly. Both the CML-IA and the ReCIpe methods use the equivalent CFC-11 substance with an ozone depletion impact indicator. The two methods present the characterization factor as 0.05 kg of CFC-11 eq for each kg of HCFC-22. We have not adopted the formula indicated by the GRI because we do not produce, import or export ozone layer depleting substances. The data presented refer to emissions from the use of air-conditioning refrigeration gas.

Atmospheric emissions (tons/year)
(305-7)



Atmospheric emissions by business unit (tons/year)
(305-3d and 305-5)

	Nitrogen Oxide		Sulphur Oxides		Hydrogen sulfide		Reduced total sulfur		Particulate Matter		Carbon monoxide	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Paper SC - Campina da Alegria	665.54	448.70	270.89	41.49	0.03	0.04	229.72	400.18	2,638.67	1,902.48	-	-
Paper MG - Santa Luzia	15.67	15.67	-	-	-	-	-	-	-	-	6.95	6.95
Corrugated Containerboard Packaging SC - Campina da Alegria	2.37	-	-	-	-	-	-	-	-	-	0.01	-
Corrugated Containerboard Packaging SP - Indaiatuba	10.64	10.64	-	-	-	-	-	-	-	-	0.01	0.01
Corrugated Containerboard Packaging SP - Vila Maria	1.75	6.66	-	82.94	-	-	-	-	-	6.71	0.00	0.00
Resin RS - Balneário Pinhal	-	-	0.13	-	-	-	-	-	12.26	3.44	-	77.00
TOTAL	695.97	481.67	271.02	124.43	0.03	0.04	229.72	400.18	2,650.93	1,912.63	6.97	83.96

Notes: From 2018 onwards, the information from the Corrugated Containerboard Packaging SC Unit – Campina da Alegria were added to the Paper SC – Campina da Alegria Unit. The Company does not have POP and VOC emissions.

(305-7b) The source of the factors used is obtained from the analysis reports that are made by contracted companies.

(305-7c) The technical requirements of ABNT, CETESB and EPA were used as the basis for definition of the sampling methodology for emissions analysis.

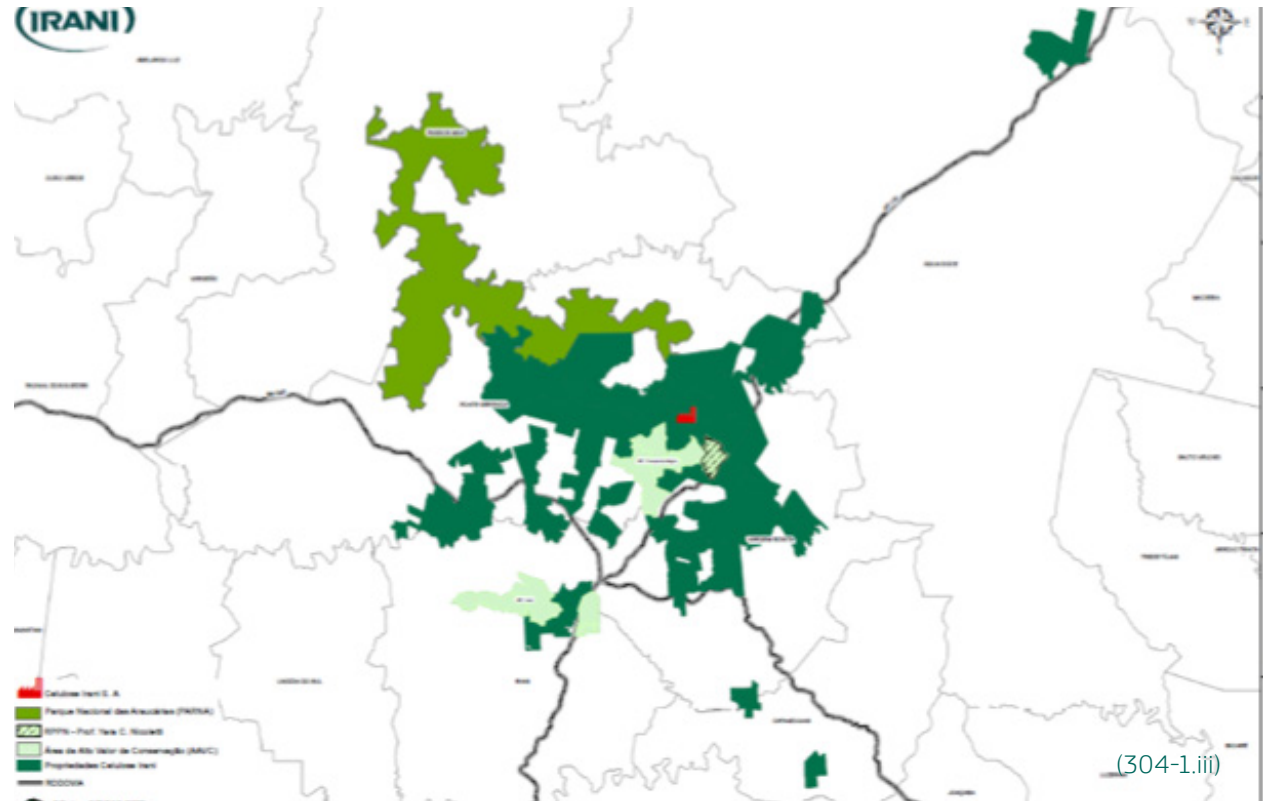
Biodiversity

(103-1 and 103-2) The balance in the interaction between our productive processes and natural resources is critical to business continuity. By presenting different biomes and needs, our forestry and environmental management teams in the states of Santa Catarina and Rio Grande do Sul monitor the impacts of operations and conduct mitigation practices.

Santa Catarina

(304-3.a) Of the total volume of forests planted in the state, 48% is dedicated to conservation areas.

(304-1) We maintain areas protected by law as permanent preservation areas and legal reserves, as well as areas that do not fall under this category of protection, but are voluntarily protected by Irani, totaling 2,294.76 hectares or 8% of land use in Santa Catarina, according to following map:



(304-3) In 2014, we signed a Term of Conduct Adjustment (TCA) with the Public Ministry of Santa Catarina (MPSC) and the Institute for the Environment (IMA) following the planting of exotic species in permanent preservation areas. In 2018, we completed the harvesting process respecting the agreed scope and timeline. The monitoring will continue in 2019, ensuring the proper recovery of the area.

Published on April 24, 2018, the Resolution No. 83/2018 of the Santa Catarina Institute for the Environment (IMA) made official the creation of Private Natural Heritage Reserve (RPPN) Prof. Yara C. Nicoletti in Campina da Alegria community in Vargem Bonita (SC). With 285 hectares, the area was named in honor of an important educator of the community and has actions focused on environmental education and scientific research.

In this location there is also an ecological trail of great importance due to the presence of water, riparian forest stands, endangered plant species and the local fauna. In 2018, seven guided tours were conducted involving 227 students from primary and elementary schools. Before going on the trail, visitors receive safety guidelines and minors have authorized entry upon express authorization from parents and / or guardians.

(304-3) Part of our land of operation and / or forestry in Santa Catarina is located in or adjacent to the Araucarias National Park (ParNa). This park is a federal conservation unit created by a decree in 2005, covering the cities of Ponte Serrada and Passos Maia. We have representation on the Advisory Board, participating directly in the discussions regarding execution of the ParNa management plan, on working groups to meet specific demands, public use of the area and support of the activities carried out in the park.

The **ProForest Guide and the FSC®** Principles guided the verification of conservation attributes in our forest areas. Expert studies and public stakeholder consultation also underpin this guideline. The result of this evaluation defined two areas with high conservation value attributes, totaling 3,150 hectares.

High Conservation Value Areas (HCVAs)

(304-3)

	Area (in hectares)	HCV Type	Evaluation outcome
Campina da Alegria	1.441,34	1, 2 and 3	<ul style="list-style-type: none"> • Presence of endangered species of birds, mammals, and flora in high threat categories; • Remaining stretches in a good state of conservation;
Irani	1.708,66		<ul style="list-style-type: none"> • Large remnants (over 1,000 hectares), compared to the extremely fragmented region; • Reserved and Preserved Legal Reservation Area
TOTAL	3.150,00		

Protection and Monitoring Measures

(304-3)

	Campina da Alegria	Irani
Environmental education	✓	
Natural asset surveillance (monitoring with iBottons)	✓	✓
Mastofauna survey	✓	✓
Avifauna survey	✓	✓
Herpetofauna survey	✓	✓
Flora survey	✓	✓
Invasive alien species control	✓	✓
Maintenance of firebreaks	✓	✓
Roadway erosion control	✓	✓
Private Conservation unit creation initiative	✓	
Environmental Impact Assessment	✓	✓

Note: firebreak is a gap in vegetation that acts as a barrier to slow or stop the progress of a bushfire or wildfire.

(304-1.vi and 304-2) At the Public Summary on Forest Management available at <http://www.irani.com.br/en/irani/bussines-area/forestry/>, there is additional information about the High Conservation Value Areas (HCVAs) such as the stage of each area, partnerships established with a focus on protection and recovery and impacts in relation to the introduction of Pinus, which is considered invasive species.

(103-3) Periodically, we carry out a fauna and flora survey with external support to evaluate the preservation and conservation measures for local biodiversity.

Flora survey

Registrou a presença de 44 famílias e 120 espécies em nossas áreas florestais. A família mais rica é a *Myrtaceae* com 26 espécies, seguida da *Asteraceae* (6), *Lauraceae* (6) e *Fabaceae* (5). Algumas das espécies inventariadas estão ameaçadas de extinção, como:

Scientific name	Common name	Threat assessment
<i>Araucaria angustifolia</i> (Bertol.) O. Kuntze	Candelabra tree, Parana pine	*CR, **EN
<i>Butia eriospatha</i> (Mart. ex Drude) Becc.	Woolly jelly palm	*VU**VU
<i>Cedrela fissilis</i> Vell.	Cedar	**VU
<i>Dicksonia sellowiana</i> Hook.	Xaxim, imperial samambaiaçu	*CR, **EN
<i>Ocotea porosa</i> (Nees & Mart.) Barroso	Brazilian walnut, Imbuia	*CR, **EN
<i>Podocarpus lambertii</i> Kl.	South American podocarpus	*NT
<i>Quillaja brasiliensis</i> (A.St.-Hil. & Tul.) Mart.	Quillaja	*EN

* The IUCN Red List of Threatened Species, Version 2016-3 – (International Union for Conservation of Nature and Natural Resources).

** Brazilian Ministry of the Environment (MMA) Ordinance Nº 443, 17 December 2014. CR = critically endangered; NT = near threatened; EN = endangered; VU - vulnerable. Last survey conducted in 2016

Mastofauna mapping

It registered occurrence of 31 species distributed in eight orders. Of this total, eight appear on endangered species lists.

Order	Species	Common name	Threat assessment
Primates	<i>Alouatta guariba clamitans</i>	Southern brown howler	VU (BR, SC)
Carnivorans	<i>Leopardus pardalis</i>	Ocelot	VU (BR), EN (SC)
Carnivorans	<i>Puma concolor</i>	Puma	VU (BR, SC)
Carnivorans	<i>Puma yagouaroundi</i>	Eyra	VU (BR)
Even-toed ungulates	<i>Mazama americana</i>	Red brocket	EN (SC)
Even-toed ungulates	<i>Pecari tajacu</i>	Collared peccary or Musk hog	VU (SC)
Even-toed ungulates	<i>Tayassu pecari</i>	White-lipped peccary	VU (BR), CR (SC)
Rodents	<i>Cuniculus paca</i>	Lowland or Spotted paca	VU (SC)

* MMA Ordinance Nº 444, of 17 December 2014.

** Santa Catarina State Department on the Environment (CONSEMA) Nº 002, of 06 December 2011. VU = Vulnerable; CR = Critically Endangered; EN = Endangered. Last survey conducted in 2015.

Avifauna survey

Essentially forest-based, with representative species dependent on preserved forests and other occupants of bush lands and woodland edges, the avifauna is, therefore, less susceptible to environmental changes.

Our surveys recorded the existence of 168 species with an emphasis on taxons that are highly dependent upon environmental quality, such as the: Mantledhawk (*Leucopternis polionotus*), King vulture (*Sarcoramphus papa*) and the Pileated or Red-capped parrot (*Pionopsitta pileata*), and/or micro-specific habitats, such as the: Rufous-tailed or Brazilian antthrush (*Chamaeza ruficauda*), Black-bellied seedeater (*Sporophila melanogaster*), Speckle-breasted antpitta (*Hylopezus nattereri*), and the Blackish-blue seedeaters (*Cyanoloxia moesta*).

Taxon/Scientific Name	Common Name	Threat assessment
<i>Tinamus solitarius</i>	Solitary tinamou	**VU
<i>Triclaria malachitacea</i>	Blue-bellied or Purple-bellied parrot	** VU
<i>Pyroderus scutatus</i>	Red-ruffed fruitcrow	** EN
<i>Sporophila melanogaster</i>	Black-bellied seedeater	* VU, ** VU

* MMA Ordinance Nº 444, of 17 December 2014.

** Santa Catarina State Department on the Environment (CONSEMA) Nº 002, of 06 December 2011. VU = Vulnerable; EN = Endangered. Last survey conducted in 2015.

Herpetofauna survey

Completion of the planned update to the end of 2019. The last survey, held in 2016, registered 24 amphibian species, among which was a small glass frog, *Vitreorana uranoscopa*, that is under threat of extinction in the state of Santa Catarina; two other types of frogs, *Ischnocnema henselii* and *Trachycephalus dibernardoi*, whose distribution is restricted to the Araucaria moist forests. As regards reptiles, we evidenced the presence of nine species, among which were *Echinanthera cyanopleura* and *Chironius bicarinatus*, both common to forest environments.

(304-3.b) Biodiversity studies developed in our forest areas are conducted in partnership with researchers and government institutions. This included:

- **Monitoring of fauna and flora**

Executed by specialists, the monitoring of fauna (mastofauna, avifauna and herpetofauna) takes place every two years, and flora every five years, to show the maintenance of attributes that characterize High Conservation Value Areas (HCVAs) in our properties. Several specimens with conservation status have been identified in HCVAs (High Conservation Value Areas) totaling 3150 hectares in the municipalities of Vargem Bonita and Irani. At RPPN Profª Yara C. Nicoletti there are species bioindicator of highly conserved areas of Mixed Ombrophilous Forests (FOM) and endemic species. In these areas, in addition to monitoring, procedures are adopted to maintain and / or improve attributes of high conservation value, according to the table.

Foram identificados diversas espécimes com status de conservação nas AAVCs (Áreas de Alto Valor de Conservação) que somam 3150ha nos municípios de Vargem Bonita e Irani. Na RPPN Profª Yara C. Nicoletti encontram-se espécies bioindicadoras de áreas altamente conservadas de Floresta Ombrófila Mista (FOM) e espécies endêmicas. Nestas áreas, além dos monitoramentos, são adotados procedimentos para manter e/ou melhorar os atributos de alto valor de conservação, conforme tabela.

- **Capuchin Monkey Project** Carried out in partnership with Embrapa Florestas (the forestry division of the Brazilian Agricultural Research Corporation), this was a study of the Black-horned Capuchin (*Sapajus nigritus*) and its interactions with our native and planted forests, as a means of reducing the damage caused by this species in our commercial plantations.

- **Reintroduction of the Vinaceous-breasted amazona parrot**

We partnered with the Espaço Silvestre NGO, which is dedicated to the rehabilitation of wild fauna, to assist us in reintroducing this species to the Araucarias National Park (ParNa) in the state of Santa Catarina.

Rio Grande do Sul

(304-3) Favoring the conservation of local biodiversity, our planted forests, located along the Rio Grande do Sul coastline, form mosaics with permanent preservation areas (APPs) and other natural spaces.

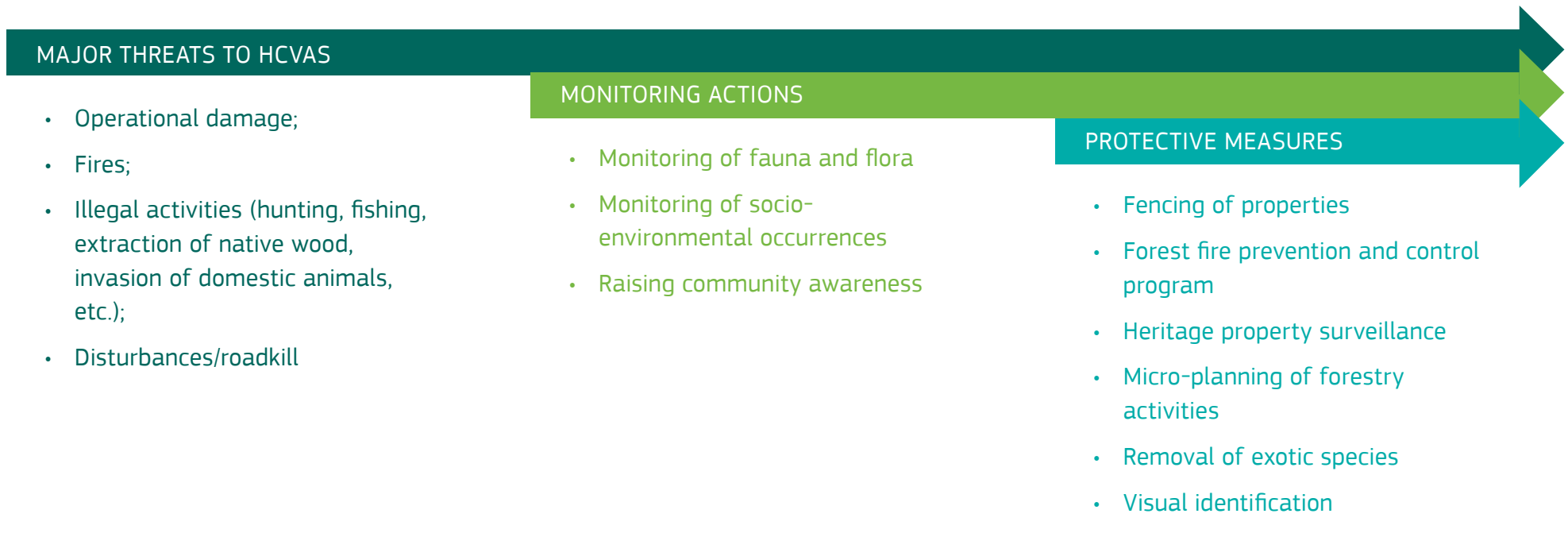
(304-1) We do not own, lease or manage any area in or adjacent to protected areas and areas of high biodiversity value outside protected areas. In the municipalities of Cidreira and São José do Norte, we have 75 hectares in High Conservation Value Areas (HCVAs) where, according to the methodology elaborated by Proforest, it is possible to identify native vegetation of great importance and regional representativity.

(304-2) Measures such as management effectiveness monitoring are applied in HCVAs with the objective of ensuring the maintenance and improvement of the identified values, consolidating their conservation and perpetuating their benefits.

HCVA	Location	Area description
Nascente e Banhado do Salazar	Cidreira	It is characterized by different ecosystems close to each other, among these, pioneer formations of marine influence, the Restingas Litorâneas. In this area can be seen specimens of Fig tree (<i>Ficus organensis</i>) of very old age forming galleries of forests that house specimens of epiphytic species representing the families Bromeliaceae and Orquidaceae.
Lagoa e Mata de Restinga do Bojuru	São José do Norte	There is a gallery forest with species characteristic of the Ombrophilous Dense Forest (<i>Coussapoa microcarpa</i>), crowns (<i>Scutia bruxifolia</i>), whites (<i>Sebastiania commersoniana</i>), araçás (<i>Psidium araca</i>), three- tips cancor-osas (<i>Iodina rhombifolia</i>) and capororocas (<i>Myrsine umbellata</i>), which harbor orchids and bromeliads species. In the middle of the dunes, we can see the occurrence of a species of wild fauna classified as vulnerable in the IUCN - red list, tuco-tuco, rodent belonging to the genus <i>Ctenomys</i> .

(304-4) In 2018, we monitored fauna and flora in these localities to understand the environmental dynamics of these areas and the impacts of activities on the environment.

The partnership established with the state government through the RS BIODIVERSITY project allowed the rapid ecological evaluation (AER) in one of these locations, pointing out:





Permanent preservation areas and legal reserves and other forest fragments of the Company also have management and monitoring measures in place to curb illegal activities and promote biodiversity conservation, such as integrated forest production system, restoration activities, heritage property surveillance and operational care.

(304-2) We have an evaluation and monitoring system for social and environmental impacts that may occur in the forest operation. Through the aspects and impacts matrix methodology, we map the impacts on fauna, soil, flora, water resources and surrounding communities. These impacts are monthly monitored before and after the operation occurs. For each negative impact identified a corrective action is generated. During the year 2018, in the forest operation in RS only 2% of activities had a significant negative impact.



The Future We Want

- Conduct at least seven guided tours to the Xaxins Trail in 2019, of which 5 are dedicated to the schools located in the municipalities where we have our own forest areas (Água Doce, Vargem Bonita, Ponte Serrada, Irani and Catanduvas) and 2 open to the general public.
- Complete the herpetofauna survey in Santa Catarina until the end of 2019.
- Progress with the fauna and flora monitoring campaigns in the HCVAs, in Rio Grande do Sul.

Contribution to the development of surrounding communities

(103-1, 103-2 and 103-3)

Sustainable initiatives promoting the shared value generation, contributing to the achievement of the strategic objective towards the development of the surrounding communities during the 2018-2027 cycle.

(413-1) We define surrounding communities to be those municipalities where we have offices and industrial units, and where most of our employees live. This is one of the criteria used to define investment and relationship priorities and is considered when analyzing new partnerships or social activities.

	Priority Attention	Prompt Attention
Santa Catarina	<ul style="list-style-type: none"> Vila Campina da Alegria and city of Vargem Bonita Irani Ponte Serrada Joaçaba Herval d'Oeste Luzerna Catanduvas Concórdia 	<ul style="list-style-type: none"> Água Doce
São Paulo	<ul style="list-style-type: none"> Indaiatuba Vila Maria (neighborhood located in the northside of the capital) 	<ul style="list-style-type: none"> Guarulhos Itaquaquecetuba
Rio Grande do Sul	<ul style="list-style-type: none"> Vila Bojuru Balneário Pinhal Cidreira 	<ul style="list-style-type: none"> Porto Alegre São José do Norte Tavares Osório Mostardas Santo Antônio da Patrulha
Minas Gerais	<ul style="list-style-type: none"> Santa Luzia 	<ul style="list-style-type: none"> Belo Horizonte

(413-1) 100% of Irani's operations have development programs in their local communities, whose goal is the development of children and youth on fronts such as education, the environment, citizenship and sports.

Initiatives promoted and / or supported by Irani in surrounding communities:

- **Outstanding Student Project:** offers exclusive pedagogical guidance and a monthly scholarship to the five best students from the Galeazzo Paganelli Elementary School, with the objective of preparing them for the National High School Examination (ENEM) and vestibular (college entrance exams). Throughout the year, volunteer professionals from Irani are invited to attend meetings to introduce young people to their graduation / continuing education journey and to teach how their profession contributes to the Company's processes.
- **Broto do Galho:** promote sustainable development in the Campina da Alegria community through recycling of waste from Irani, transforming them into useful handicraft products and decoration, stimulating the social integration and the generation of extra income to the participants.
- **Partnership with Junior Achievement:** established in all states where we operate, this partnership encourages our employees to voluntarily participate in training and applications related to sustainability and the business world for more than 700 young people from public and private schools in the area.
- **Partnership with the Joaçabense Volleyball Association (AJOV):** through sports practices, this program encourages citizenship among 300 school age youth residing in the communities of Joaçaba, Vargem Bonita, and Campina da Alegria
- **Sports Programs in Partnership with Industrial Social Services (SESI):** fostering citizenship through sports and addressing related themes, such as mutual respect and teamwork. Through this initiative, we have benefited an average of approximately 1,500 young people in Indaiatuba, São Paulo and Santa Luzia, Minas Gerais.
- **137 employees dedicated more than 600 hours in volunteering in 2018.**
In 2018, we donated more than 10,000 native seedlings produced in our forest nursery for environmental events and recovery of degraded areas, including species such as Araucaria, Imbuia and Butiá.

Investimentos sociais (em R\$ mil)
(201-1)

	2016	2017	2018
Direct Investments	199	314	214
Cultural Action Program – ProAC	98	0	0
One-Off Donations	28	41	10
TOTAL	325	355	224

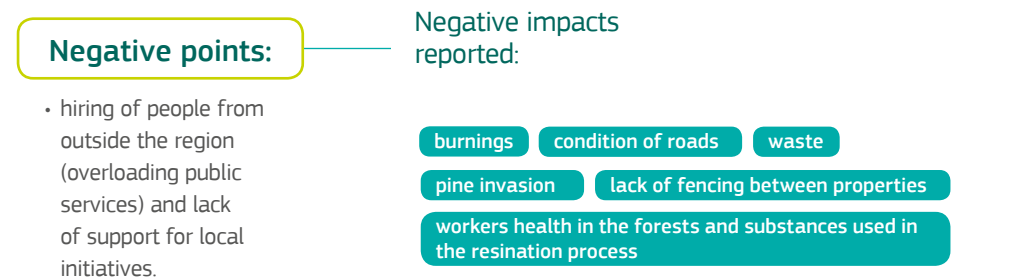
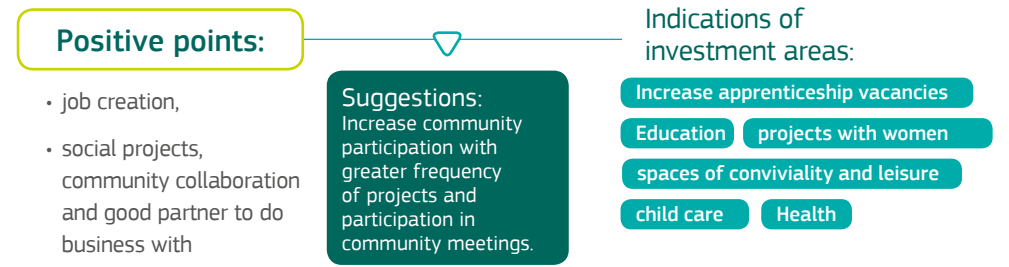
Note: Since 2016, we have not invested in projects supported by the Rouanet Law.

(102-43, 413-2) Still in 2018, with the support of external consultants, we carried out an update in our assessment for social and environmental impacts in the communities surrounding our forestry and industrial operations in the states of Santa Catarina and Rio Grande do Sul. This work involved consultations with local leaders and interviews with representatives of our relationship public collecting perceptions as image, communication and relationship of the Company and the social and environmental impacts arising from our activities.

Results verified in the socio-environmental impact assessment in Santa Catarina (102-44)



Evaluation of Socio-environmental Impacts in surrounding communities Rio Grande do Sul – Results (102-44)



The results obtained in these studies are carried out by multidisciplinary teams, responsible for drawing up and executing action plans to mitigate negative perceptions while reinforcing the positive ones in order to guarantee the social license to operate. In the states of Minas Gerais and São Paulo the studies are conducted internally with a view to completion in 2019.

Also in 2018, we signed a commitment to buy and sell an area of 49 hectares for the Municipality of Irani to expand its industrial district, opening space for the insertion of about 70 new companies while contributing to the development of this community. This commitment is to establish each contractor's obligations for the purpose of the sale, especially those related to the release of the property to develop the area.

(102-13) We continually communicate with governments and social entities representative of society through our leaderships, which sits on boards, executive boards and / or contribute in projects and actions developed in organizations such as:

- Brazilian Association of Publicly-Held Companies (ABRASCA)
- Brazilian Corrugated Cardboard Association (ABPO)
- Brazilian Pulp and Paper Technical Association (ABTCP)
- Catarinense Association of Forest Enterprises (ACR) Associação Comercial e Industrial do Oeste Catarinense (ACIOC)
- Association of Parents and Friends of the Challenged Youths (APAE) from the municipalities of Joaçaba, Vargem Bonita, and Concordia, in Santa Catarina
- Brazilian Resiners Association (ARESB)
- Business Association of Santa Luzia (AESL)
- Rio Grande do Sul Association of Forest Companies (AGEFLOR)
- Rio Grande do Sul Quality Association/PGQP
- Center of Industries of Rio Grande do Sul (CIERGS)
- State Department of the Environment (CONSEMA)
- Federation of Commercial and Service Associations of Rio Grande do Sul (FEDERASUL)
- Federation of Industries of the State of Santa Catarina (FIESC)
- Technological Foundation Center for Industrial Production– CETEPI from Joaçaba (SC)
- Fundação Centro Tecnológico de Produção Industrial (Cetepi)
- Brazilian Tree Industry Association (IBÁ)
- Brazilian Institute of Engineering Assessments and Expertise (IBAPE)
- Euvaldo Lodi Institute (IEL)
- Santa Catarina Movement for Excellence – SC Excellence
- Brazilian Bar Association of Santa Catarina (OAB-SC)
- Santa Catarina Secretariat for Sustainable Development (SDS)
- The Cabinetmaking, Sawmill, Carpentry, and Cooperage Industries Syndicate of Caxias do Sul (SINDIMADEIRA RS)
- Cardboard Industry Association of the State of São Paulo (SINPEP)
- Pulp and Paper Industries Association of the State of Santa Catarina (SINPESC)
- Pulp, Paper, and Cardboard Industries Association of the State of Minas Gerais (SINPAPEL)
- Paper, Cardboard, and Cork Industries Association of the State of Rio Grande do Sul (SINPASUL)
- Paper and Cardboard Industry Workers' Union of Santa Luzia (SINTIPEL)
- Paper, Cardboard, and Cork Artifacts Industries Workers' Union of Joaçaba and Region (SITIAPAPEL)
- Paper, Cardboard, and Cork Industries Workers' Union of São Paulo, ABCDM, Osasco, Taboão da Serra, and Region (SINTRAPEL)
- Osório Rural Workers' Union (SITRROSO)
- Poderoso-Vermelho Subcommittee – Rio das Velhas Hydrographic Basin Committee
- Young's Presidents Organization (YPO)



About the **Report**

About the Report

This is Irani's thirteenth Sustainability Report. **(102-45, 102-50, 102-52 and 102-54)** Disclosed annually, it contains information for the period from January 1st, to December 31, 2018, on all our industrial and controlled units, in accordance with GRI Standards: "Comprehensive option".

The content definition is based on the list of material topics reviewed in 2018 during an in-house team work, inspired by the process conducted by BSD Consulting in 2014 and the guidelines of the Global Reporting Initiative (GRI) and the Fundação Dom Cabral (FDC). This work was divided into five stages, the first being the analysis of internal sources that included corporate publications, reports, studies or internal surveys and face-to-face interviews with the members of the Board of Executive Directors.

(102-21 and 102-43) Subsequently, external sources such as publications, reports, studies, research and materiality of companies in the sector were consulted, as well as thirteen new consultations with external stakeholders. The selection of those consulted is based on the company's stakeholder map, which defines the main stakeholders in our business, and the nominations are made by the leaders responsible for managing this relationship. Sampling considers the diversity of audiences and scope, i.e. all regions where we have units need to be covered in this consultation.

Out of the set of internal and external consultations, 38 themes emerged, each one being assigned a score according to its recurrence and source of indication. The average calculated by theme was arranged in a matrix from which it was possible to extract the topics of greater relevance considering internal and external stakeholders. **(102-44, 102-46 and 102-47)**

During the material topics review, we noted the need to evolve in addressing the theme "Admirable and Well-Deserved Profits" so that the approach to our efforts to build appropriate, transparent, innovative and sustainable value relationships and processes was clearer and more objective. The consequence of these efforts, which materializes in the generation of shared value with admirable profits, deserved and legitimized by our stakeholders, composes what we understand as an institutional image, which from this cycle of reporting becomes adopted as a material topic.

Finally, 17 subjects were prioritized, which were internally evaluated and integrated, taking us to the final list of 11 themes, which were validated by the entire Board of Executive Directors.

Material topic	(101-1) Why was this identified as a material topic?	Impacted Links						GRI indicators related to the theme
		FOREST	SUPPLIERS	UNITS	CUSTOMERS	SOCIETY	COMMUNITY	
Environmental Performance	Our commitment to generate positive impacts through the efficiency of our processes, with a focus on resource reuse and environment preservation.							102-11, 301-1, 301-2, 301-3, 302-1, 302-2, 302-3, 302-4, 302-5, 303-1, 303-2, 303-3, 303-4, 303-5, 304-1, 304-2, 304-3, 304-4, 305-1, 305-2, 305-3, 305-4, 305-5, 305-6, 305-7, 306-2, 306-3, 306-4
People development	Challenging people and creating the conditions necessary for them to achieve their full potential, developing themselves professionally and personally.							102-8, 102-36, 102-37, 401-1, 401-2, 401-3, 404-1, 404-2, 404-3, 405-1, 405-2
Local development	Promote the development of communities around our units.							102-12, 102-13, 102-41, 413-1, 413-2
Excellence	Ensure excellence, strengthening the culture of innovation, learning and producing continuous improvements in everything we do.							102-15, 102-16, 102-17, 201-1, 201-2, 201-3, 201-4
Customer's point of view	Our challenge lies in understanding how to satisfy our customers' expectations. We stand shoulder-to-shoulder with our customers, looking at the same scenario. Thus, with our knowledge and experience, we propose solutions aimed at reducing costs and producing operational improvements.							102-15, 102-16, 102-17, 201-1, 201-2, 201-3, 201-4, 416-1, 416-2
Results-focused	Make every effort to optimize business profitability and ensure return to shareholders							102-15, 102-16, 102-17, 201-1, 201-2, 201-3, 201-4

*(The more intense the color, the greater the degree of perceived impact)

LEGEND: Economic impacts Environmental Impacts Social Impacts

Material topic	(101-1) Why was this identified as a material topic?	Impacted Links						GRI indicators related to the theme
		FOREST	SUPPLIERS	UNITS	CUSTOMERS	SOCIETY	COMMUNITY	
Governance	We focus on transparency, ethics, and integrity to drive our governance model and all our relationships.	■	■	■	■	■	■	102-18, 102-19, 102-20, 102-21, 102-22, 102-23, 102-24, 102-25, 102-26, 102-27, 102-28, 102-29, 102-30, 102-31, 102-32, 102-33, 102-34, 102-35, 102-37, 102-38, 102-39
Institutional Image	We are not only an economic agent, we contribute to the prosperity of our stakeholders and to the promotion of social development. The recognition of this effort materializes in admirable and well-deserved profits.	■	■	■	■	■	■	102-15, 102-16, 102-17, 201-1, 201-2, 201-3, 201-4
Innovation	For Irani, innovation is more than a choice: it's a value. A fundamental element in the personality of companies that seek to be among the best.	■	■	■	■	■	■	102-15, 102-16, 102-17, 201-1, 201-2, 201-3, 201-4
Value Relationships	Building value relationships is part of our strategic intent. Develop and strengthen successful and meaningful partnerships with all our stakeholders.	■	■	■	■	■	■	102-6, 102-9, 102-10, 102-11, 204-1, 308-1, 308-2, 414-1, 414-2, 416-1, 416-2
Health and safety	We want to go beyond compliance, safety is a value for Irani. Our health and safety culture is strengthened by engaging our leaderships and our employees to ensure the health and safety of everyone.	■	■	■			■	403-1, 403-2, 403-3, 403-4, 403-5, 403-6, 403-7, 403-8, 403-9, 403-10

*(The more intense the color, the greater the degree of perceived impact)

LEGEND: ■ Economic impacts ■ Environmental Impacts ■ Social Impacts

(102-31) This process will undergo a new review throughout 2019, taking advantage of the Company's updated documents such as the Integrity Program and socio-environmental impact assessments in surrounding communities in the states where we have industrial operations (Minas Gerais, São Paulo, Santa Catarina and Rio Grande do Sul) and forestry operations (Santa Catarina and Rio Grande do Sul). This update will guide the strategic planning review scheduled for 2020.

(102-32) The content of this report is approved by Irani's Sustainability Committee and the financial information is assured by KPMG Auditores Independentes. **(102-56)** Non-financial information has undergone an independent verification process from BSD Consulting, responsible for issuing the Assurance Statement that you can read clicking here [\(inserir link para acesso direto à declaração de garantia quando ela for disponibilizada\)](#).

(102-53) If you have any questions or suggestions, please contact us through the Contact Us on our website, available at: <http://www.irani.com.br/ideias-em-acao/contato/>

Assurance Statement

102-56

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GRI Standards Content Index – “Comprehensive” option

(102-55)

GRI 101: Foundation 2016

General Disclosures

Organizational profile

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-1 Name of the organization	Celulose Irani S.A.	-
	102-2 Activities, brands, products, and ser	Kraft papers, sheets and corrugated cardboard boxes and resins	-
	102-3 Location of headquarters	Rio Grande do Sul Office: Rua General João Manoel, 157 9th floor, Porto Alegre (RS) CEP 90010-030	-
	102-4 Location of operations	Exclusively Brazilian operation with offices in Joaçaba (SC) and Porto Alegre (RS) and industrial units in Vargem Bonita (SC), Indaiatuba (SP), São Paulo (SP), Santa Luzia (MG) and Balneário Pinhal (RS)	-
	102-5 Ownership and legal form	Publicly-held corporation, since 1977	-
	102-6 Markets served	Domestic and international Pg. 9, 86, 87 and 88	-
	102-7 Scale of the organization	Pg. 6, 14, 16, 17, 19, 22, 48, 69 and 71	-
	102-8 Information on employees and other workers	Pg. 69, 70 and 71	-
	102-9 Supply chain	Critical suppliers make up the five purchasing groups presented in the Report. The breakdown is treated separately, as described by each group on pages 76, 77, 78, 79, 80, 81 and 82	-
	102-10 Significant changes to the organization and its supply chain	None	-

General Disclosures

Organizational profile

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-11 Precautionary Principle or approach	We have adopted all economically feasible measures to apply the precautionary principle. Such measures are in line with our strategic intent and are approved by the Board of Directors and Executive Board, financial and sustainability policies.	-
	102-12 External initiatives	Pg. 3, 83 and 99	-
	102-13 Membership of associations	Pg. 44 and 128	-

Strategy

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-14 Statement from senior decision-maker	Pg. 3	-
	102-15 Key impacts, risks, and opportunities	Pg. 3, 14, 17, 26 and 30	-

Ethics and integrity

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-16 Values, principles, standards, and norms of behavior	Pg. 6 and 25	-
	102-17 Mechanisms for advice and concerns about ethics	Pg. 27	-

General Disclosures

Governance

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: Divulgações gerais 2016	102-18 Governance structure	Pg. 39, 40, 41 and 43	-
	102-19 Delegating authority	Pg. 39, 43 and 44	-
	102-20 Executive-level responsibility for economic, environmental, and social topics	Pg. 39, 43 and 44	-
	102-21 Consulting stakeholders on economic, environmental, and social topics	We do not have a formalized consultation process between the stakeholders and the highest governance body.	-
	102-22 Composition of the highest governance body and its committees	The Executive Board is the only executive body. The Board of Directors is comprised of representatives of shareholders and Irani's controlling family group. There are no representatives from minority groups on the Board of Directors. Pg. 40, 42	-
	102-23 Chair of the highest governance body	Pg. 40 and 42	-
	102-24 Nominating and selecting the highest governance body		There are no formal procedures
	102-25 Conflicts of interest	Pg. 27, 39, 40 and 42	-
	102-26 Role of highest governance body in setting purpose, values, and strategy	Pg. 25 and 26	-
	102-27 Collective knowledge of highest governance body	Pg. 44	-
102-28 Evaluating the highest governance body's performance		There are no formal procedures	

General Disclosures

Governance

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-29 Identifying and managing economic, environmental, and social impacts	The Board of Executive Officers is responsible for monitoring and validating the discussions and definitions regarding risk management. Pg. 30, 42, 43, 44	-
	102-30 Effectiveness of risk management processes	The Board of Executive Officers is the body responsible for evaluating the effectiveness of risk management. Pg. 30, 32	-
	102-31 Review of economic, environmental, and social topics	The Sustainability Committee is responsible for reviewing the economic and social-environmental topics related to the business. Pg. 43, 44 e 133	-
	102-32 Highest governance body's role in sustainability reporting	The content of this report is approved by Irani's Sustainability Committee Pg. 43 e 133	-
	102-33 Communicating critical concerns	The report is the responsibility of the Chief Executive Officer. Pg. 44	-
	102-34 Nature and total number of critical concerns	-	Information not available
	102-35 Remuneration policies	Pg. 36 and 45	-
	102-36 Process for determining remuneration	Pg. 45 and 72	-
	102-37 Stakeholders' involvement in remuneration	We do not currently hold consultations affecting stakeholders regarding the compensation strategy. We have external consulting to conduct the process of job evaluation and market salary research, which generate support for the decision-making of the Board of Executive Directors regarding the Company's compensation strategy.	-
	102-38 Annual total compensation ratio	Pg. 73	-
102-39 Percentage increase in annual total compensation ratio	-	The Company is evaluating the possibility of disclosing this information in upcoming reports.	

Stakeholder engagement

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General Disclosures 2016	102-40 List of stakeholder groups	Pg. 6	
	102-41 Collective bargaining agreements	Pg. 70	
	102-42 Identifying and selecting stakeholders	Pg. 6	
	102-43 Approach to stakeholder engagement	Pg. 66, 81, 85, 86, 87, 88, 91, 126 and 130	The approach to this indicator is intrinsic throughout the description of how we manage each material subject.
	102-44 Key topics and concerns raised	Pg. 34, 66, 81, 85, 86, 87, 88, 127 and 130	Our leaders are responsible for managing the main topics and concerns of their direct relationship stakeholders.

General Disclosures

Reporting practice

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 102: General disclosures 2016	102-45 Entities included in the consolidated financial statements	Celulose Irani S.A., Habitasul Florestal S.A., HGE – Geração de Energia Sustentável S.A., Irani Geração de Energia Sustentável Ltda and Iraflor Comércio de Madeiras Ltda.	-
	102-46 Defining report content and topic Boundaries	Pg. 130	-
	102-47 List of material topics	Pg. 131 and 132	-
	102-48 Restatements of information	Explanatory notes were incorporated throughout the text where there was a need to adjust information.	-
	102-49 Changes in reporting	None.	-
	102-50 Reporting period	January 1, 2018 to December 31, 2018.	-
	102-51 Date of most recent report	June 5, 2018	-
	102-52 Reporting cycle	Annual	-
	102-53 Contact point for questions regarding the report	faleconosco@irani.com.br	-
	102-54 Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with GRI's Comprehensive Standards.	-
	102-55 GRI content index	Pg. 137	-
	102-56 External assurance	Pg. 133	-

Material Topics

Economic Performance 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 47	-
	103-2 The management approach and its components	Pg. 47, 50 and 52	-
	103-3 Evaluation of the management approach	Pg. 47, 49 and 53	-
GRI 201: Economic performance 2016	201-1 Direct economic value generated and distributed	Pg. 53 and 126	-
	201-2 Financial implications and other risks and opportunities due to climate change		A study on the impact of climate change on our business is planned for the upcoming Strategic Planning Review.
	201-3 Defined benefit plan obligations and other retirement plans		Irani does not have pension plans for employees
	201-4 Financial assistance received from government	None	-

Material Topics

Procurement Practices 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 132	-
	103-2 The management approach and its components		The Company is evaluating the possibility of disclosing this information in upcoming reports.
	103-3 Evaluation of the management approach		-
GRI 204: Procurement practices 2016	204-1 Proportion of spending on local suppliers	Pg. 84	-

Material Topics

Materials 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 99 and 131	-
	103-2 The management approach and its components	Pg. 99	-
	103-3 Evaluation of the management approach	Pg. 100	-
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Pg. 99	-
	301-2 Recycled input materials used	Pg. 100	-
	301-3 Reclaimed products and their packaging materials	Pg. 100	-

Material Topics

Energy 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
	103-1 Explanation of the material topic and its Boundary	Pg. 96 and 131	-
GRI 103: Management Approach 2016	103-2 The management approach and its components	Pg. 96	-
	103-3 Evaluation of the management approach	Pg. 96	-
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Pg. 96, 97 and 98	We do not sell electric power, heating, refrigeration or steam.
	302-2 Energy consumption outside of the organization	Pg. 98	-
	302-3 Energy intensity	Pg. 96	-
	302-4 Reduction of energy consumption	-	The information about conservation and efficiency initiatives for reduction of energy consumption is not available. The Company is evaluating the possibility of disclosing this information in upcoming reports.
	302-5 Reductions in energy requirements of products and services	Pg. 96	-

Material Topics

Water and Effluents 2018

GRI Standard	Disclosure	Response/Where to find information	Omissions
	103-1 Explanation of the material topic and its Boundary	Pg. 92 and 131	-
GRI 103: Management Approach 2016	103-2 The management approach and its components	Pg. 92 and 93	-
	103-3 Evaluation of the management approach	Pg. 93	-
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Pg. 92, 93	-
	303-2 Management of water discharge-related impacts	Pg. 94	-
	303-3 Water withdrawal	Pg. 93	-
	303-4 Water discharge	Pg. 94	-
	303-5 Water consumption	Pg. 94	303-5d Not applicable

Material Topics

Biodiversity 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 117 and 131	-
	103-2 The management approach and its components	Pg.117	-
	103-3 Evaluation of the management approach	Pg. 119	-
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	Pg. 117, 119 and 122	-
	304-2 Significant impacts of activities, products, and services on biodiversity	Pg. 13, 14, 119, 122 and 124	-
	304-3 Habitats protected or restored	Pg. 117, 118, 121 and 122	-
	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operati	Pg. 123	-

Material Topics

Emissions 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 131 and 107	-
	103-2 The management approach and its components	Pg. 107	-
	103-3 Evaluation of the management approach	Pg. 111	-
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Pg. 107 and 108	-
	305-2 Energy indirect (Scope 2) GHG emissions	Pg. 107, 108 and 110	-
	305-3 Other indirect (Scope 3) GHG emissions	Pg. 107, 108, 110, 112, 114 and 116	-
	305-4 GHG emissions intensity	Pg. 109, 110, 113 and 114	-
	305-5 Reduction of GHG emissions	Pg. 110, 111, 112, 113, 114 and 116	-
	305-6 Emissions of ozone-depleting substances (ODS)	Pg. 115	We have not adopted the formula indicated by GRI because we do not produce, import, or export ozone-depleting substances. The data presented are related to emissions from the use of air conditioning refrigeration gas.
	305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Pg. 115 and 116	-

Material Topics

Efluentes e resíduos 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 92 and 131	-
	103-2 The management approach and its components	Pg. 92 and 94	-
	103-3 Evaluation of the management approach	Pg. 94	-
GRI 306: Effluents and Waste 2016	306-1 Water discharge by quality and destination		Reported in GRI 303: Water and Effluents topic (2018)
	306-2 Waste by type and disposal method	Pg. 101 and 105	-
	306-3 Significant spills	None	-
	306-4 Transport of hazardous waste	Pg. 101 and 103	-
	306-5 Water bodies affected by water discharges and/or runoff	Pg. 94	Reported in GRI 303: Water and Effluents topic (2018)

Material Topics

Supplier Environmental Assessment 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 76	-
	103-2 The management approach and its components	Pg. 76	-
	103-3 Evaluation of the management approach	Pg. 76	-
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Pg. 83 and 84	The Company is evaluating the possibility of disclosing this information in upcoming reports
	308-2 Negative environmental impacts in the supply chain and actions taken	Pg. 76, 78, 79 and 83	The Company is evaluating the possibility of disclosing this information in upcoming reports

Material Topics

Employment 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 55 and 131	-
	103-2 The management approach and its components	Pg. 55	-
	103-3 Evaluation of the management approach	Pg. 66	-
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Pg. 69, 70 and 72	-
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	All Irani industrial units and offices are considered as important operational units. Pg. 73	-
	401-3 Parental leave	Pg. 73	-

Material Topics

Occupational Health and Safety 2018

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 132	-
	103-2 The management approach and its components	Pg. 57	-
	103-3 Evaluation of the management approach	Pg. 58	-
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Pg. 58 and 59	-
	403-2 Hazard identification, risk assessment, and incident investigation	Pg. 58 and 60	-
	403-3 Occupational health services	Pg. 58	-
	403-4 Worker participation, consultation, and communication on occupational health and safety	Pg. 61	-
	403-5 Worker training on occupational health and safety	Pg. 58	-
	403-6 Promotion of worker health	Pg. 58 and 59	-
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Not applicable	-
	403-8 Workers covered by an occupational health and safety management system	Pg. 58	-
	403-9 Work-related injuries	Pg. 58 and 62	-
	403-10 Work-related ill health		The Company is evaluating the possibility of disclosing this information in upcoming reports

Material Topics

Training and education 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 131	-
	103-2 The management approach and its components	Pg. 63	-
	103-3 Evaluation of the management approach	Pg. 64	-
GRI 403: Occupational Health and Safety 2018	404-1 Average hours of training per year per employee	Pg. 63	-
	404-2 Programs for upgrading employee skills and transition assistance programs		Information on programs for employment continuity and end-of-career management are not available. The Company is evaluating the possibility of disclosing this information in upcoming reports.
	404-3 Percentage of employees receiving regular performance and career development reviews	Pg. 67	-

Material Topics

Diversity and Equal Opportunity 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 131	
	103-2 The management approach and its components	Pg. 72	
	103-3 Evaluation of the management approach		The Company is evaluating the possibility of disclosing this information in upcoming reports.
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	The Board of Directors is comprised of 5 men over the age of 50. Of these, 40 % belong to the Company's founders family group and 60 % are specialists with no family connections.	
	405-2 Ratio of basic salary and remuneration of women to men	Pg. 72	

Material Topics

Local Communities 2016

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 125, and 131	
	103-2 The management approach and its components	Pg. 125	
	103-3 Evaluation of the management approach	Pg. 125	
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	Pg. 125	
	413-2 Operations with significant actual and potential negative impacts on local communities		The Company is evaluating the possibility of disclosing this information in upcoming reports.

Material Topics

Supplier Social Assessment

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 132	
	103-2 The management approach and its components		
	103-3 Evaluation of the management approach		Information on actual and potential significant social impacts, as well as the percentage of suppliers evaluated, were not available for reporting. The Company is evaluating the possibility of disclosing this information in upcoming reports.
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria		
	414-2 Negative social impacts in the supply chain and actions taken	Pg. 78	

Material Topics

Customer Health and Safety

GRI Standard	Disclosure	Response/Where to find information	Omissions
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its Boundary	Pg. 131	
	103-2 The management approach and its components	Pg. 85	
	103-3 Evaluation of the management approach		There are no formal procedures
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Pg. 19 and 91	
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	None	



Credits

(102-53)

Chairman of the Board of Directors

Péricles Pereira Druck

CEO

Sérgio Luiz Cotrim Ribas

Administration, Finance and Investor Relations

Officer - CFO

Odivan Carlos Cargnin

People, Strategy and Management Officer

Fabiano Alves Oliveira

Corrugated Containerboard Packaging

Business Officer

Lindomar Lima de Souza

Paper and Forestry Business Officer

Henrique Zugman

General Coordination

Health and Safety, Quality and Sustainability Area

Content Review

Communications Team

Independent Verification

BSD Consulting

Graphic Project

RICCA Comunicação e Sustentabilidade

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Disclosure

April/2019

Distribution

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