



SUSTAIN
ABILITY

2 0 2 2

To be for
To belong for
To exchange for
To care for
To live for

Growing



What does it take to **keep growing together?**

This is a question that the thousands of people connected with MRN ask themselves every day. Company, employees, Quilombola and riverside communities, shareholders, the society. A single question capable of resulting in a countless number of answers.

Like the constant movement of the vibrant Amazon.

The 2022 MRN Sustainability Report gathers the year's initiatives within the company's sustainable mining philosophy, covering social, environmental and governance aspects.

Feedback from the commitment to renewal and to the understanding that, together, everyone goes further.

And if one action supports the other, the responses are also connected.

To be

To exist. To pulsate. To be aware of one's presence for oneself, for everyone and everything.

To belong

To perceive oneself as part of a whole. To understand the impact of one's existence with other beings and the environment around them.

To exchange

Experiences, knowledge, cultures, apprenticeship, wealth. Relationships based on transparent dialog.

To care for

To understand that it is from preservation that longevity arises. To live the present through actions with long-term perspectives.

To live

In harmony and with respect for people and the environment so that everyone can grow together with mining.

Enjoy it!

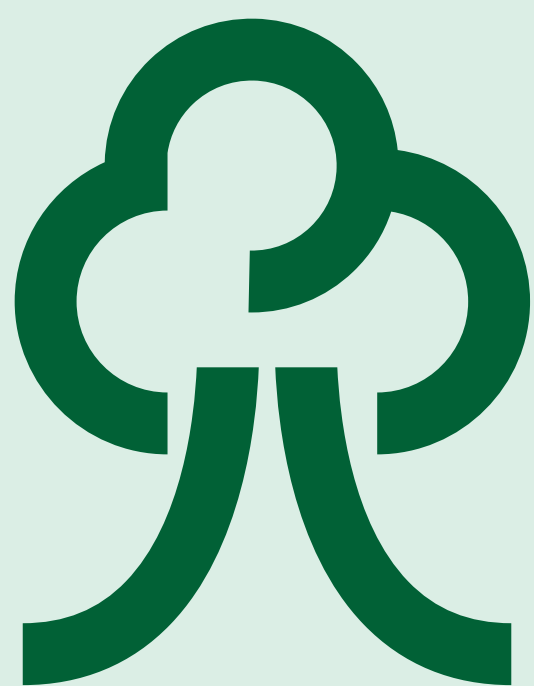
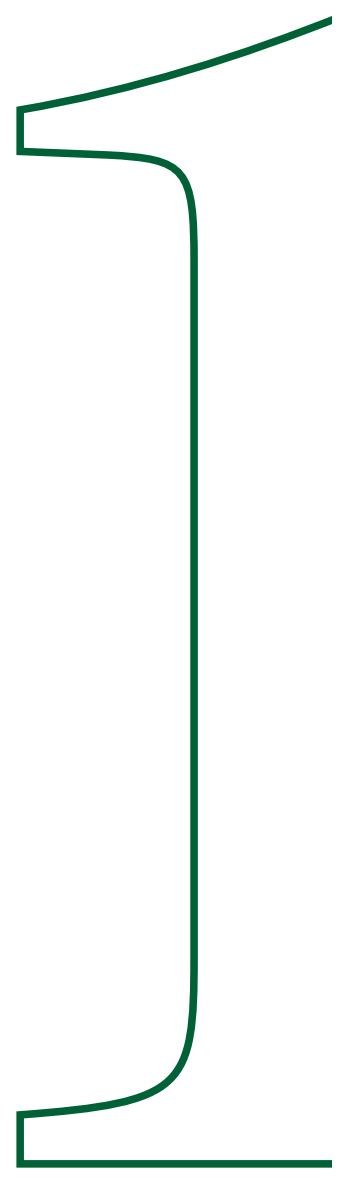


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A word from the CEO

Continuity of a legacy

MRN Profile

Knowing to grow together

Awards

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Financial Highlights

Transparency as a pillar of growth



A word from the CEO

Continuity of a Legacy: We continue building Together.

The world is experiencing constant evolution, marked by rapid innovation, technology, and the challenges of an agenda that continuously demands adherence to ESG (Environment, Social, Governance) practices. This transformation has had an impact on all sectors, including the mining industry.

We are attentive to these profound changes, as our commitment to responsible and sustainable mining is constant. At MRN, all of this is driven by what we value most: people. They bring their diverse ideas, talents, and pride to belong, care, and live in this unique place called the Amazon.

In this synergy we continue together with the purpose of producing bauxite to contribute to a more sustainable world, aiming to leave a legacy for future generations. Our purpose is guided by values that are non-negotiable for us: safety, respect, integrity, sustainability, and continuous improvement.

We feel joy and gratitude for the successful journey that has been built by our employees, neighboring communities, shareholders, suppliers, and partners over the past four decades. A journey we proudly present to you in the 2022 MRN Sustainability Report, a publication that reflects our way of being and doing sustainable mining in the heart of the Amazon.



Commitment to Sustainable Practices.

Aluminum is the metal of the future, infinitely recyclable and fundamental for energy transition. As the starting point of this production chain, we understand the importance of progress. That's why we always adopt the best industry practices. In 2022, we maintained our certification in the ASI (Aluminium Stewardship Initiative) Performance Standard, the only global voluntary sustainability initiative that covers the entire aluminum value chain, which bauxite is part of.

In the same year, we also consolidated the adherence to the ASI principles in the Chain of Custody standard (CoC). The effort and dedication of all teams culminated earlier this year with achieving this important seal, which focuses on traceability from bauxite extraction to shipment. With the ASI CoC, MRN attests to its commitment to responsible bauxite mining practices and starts to issue the Bauxite Certificate.

Always moving forward, we are seeking alignment with the International Finance Corporation (IFC) a World Bank association which promotes Socioenvironmental Sustainability Performance Standards and the Global Industry Standard on Tailings Management (GISTM), which defines criteria for management and operation of tailings dams, to mitigate environmental risks and impacts. We anticipate these accreditations for the next two years.

Innovating to Achieve More.

We have been on the path of innovation by continuously modernizing our operations. Our purpose is to have more efficient and productive processes to reduce impacts, optimize activities, and advance in all aspects. To mention some numbers: we invested over R\$ 58 million in Tailings Management System and another R\$ 380 million in Dam Safety works.

The Dry Tailings Pit Disposal Method, which involves returning dry tailings to the pit from which the ore was extracted, is undoubtedly one of our great achievements in 2022. This technology will prevent the construction of new reservoirs, reduce the need for vegetation suppression, and make our operations even more sustainable.

We also celebrate the 80% reduction in water abstraction volume in our operations.

Many were the challenges as well as the achievements. The fact is we grew in 2022 because we grew together.



A stylized, handwritten signature in white ink, appearing to read 'GG'.

Guido Germani

MRN Profile

Knowing to grow together

Where, how and what makes MRN to be MRN:

A company that guides its growth in a sustainable way and in the respect for the communities, the environment, its employees and partners.



More than six thousand professionals



12.5 million tons of bauxite produced/year



Exports to three continents



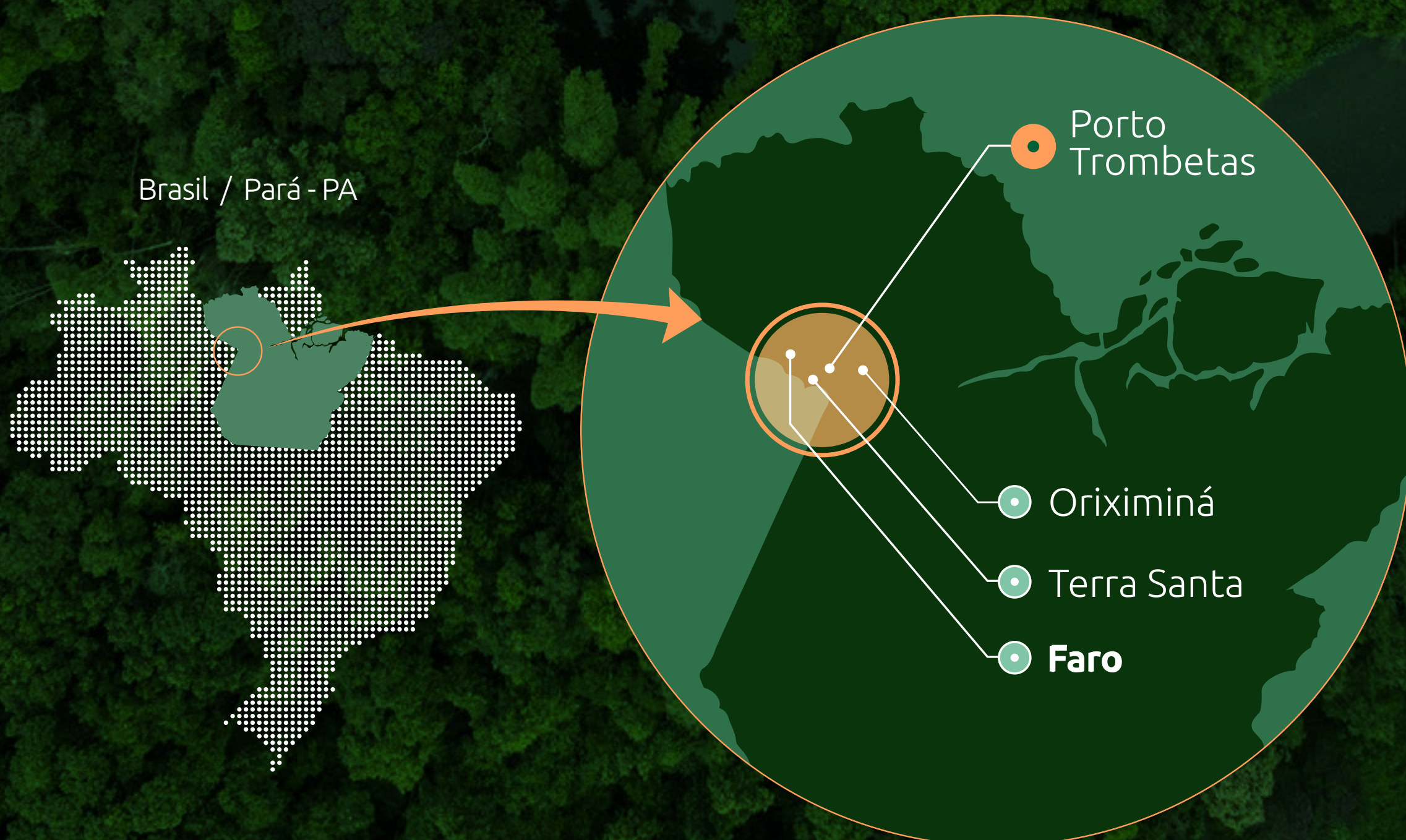
More than 60 socioenvironmental initiatives



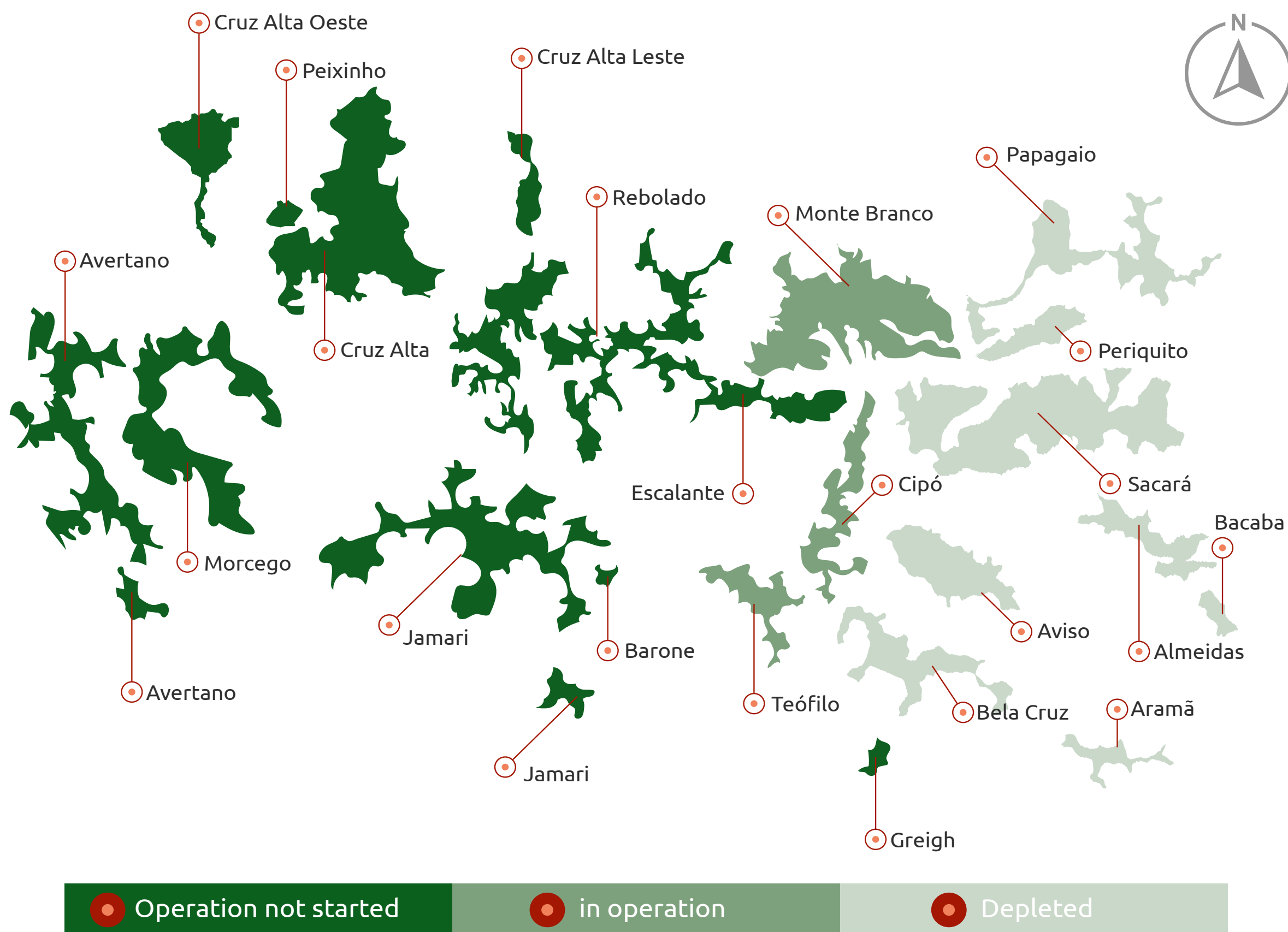
For over 40 years generating economic development and opportunities in the region

Origin: Pará | Destination: The World

Headquartered in the district of **Porto Trombetas**, in western **Pará**, MRN maintains operations that encompass the municipality of Terra Santa, both located in Western Pará State - in the heart of the Amazon Region. The company is close to major economic and tourist centers in the North Region, such as Santarém (in Pará State) and Parintins and Manaus (in Amazonas State).



Map of MRN's Mines:



The aluminum cycle:

Aluminum is one of the most common metals in our daily lives. We can find it in our homes, in electronics, cars and household appliances. And bauxite, a reddish rock found underground, is the main source of this metal that we all use so much.



Our daily aluminum

Aluminum's good conductivity and mechanical strength make it an excellent material for infrastructure and telecommunications, thus reducing energy consumption and helping to carry electricity over billions of miles of overhead and underground cables. Because of these properties, aluminum has been seen as key in the energy transition.

The metal can also be used in the automotive sector, as well as in tinsmithing, the food industry and construction. In the pharmaceutical sector, it is chosen for its characteristics that prevent oxidation and corrosion and ensure impermeability, which are essential to maintain the active ingredient of medicines.

As a highly recyclable material, it has become a source of income for many people. In addition, the lightness and infinite recyclability of aluminum reduces its carbon footprint and makes it more sustainable for society.

Vision

To be an excellence-oriented, sustainable company and a benchmark in the mineral sector throughout the life cycle of the business.

Mission

To produce bauxite while meeting customer's needs and generating return to its shareholders and respecting people and the environment.

Purpose

To produce bauxite that contributes to a sustainable world.

Our values:



SAFETY

To work with safety and pursue genuine care.



RESPECT

To care for people in an environment of collaboration, respect, diversity, inclusion and recognition.



INTEGRITY

To act with transparency, ethics and fairness by promoting good corporate governance practices.



SUSTAINABILITY

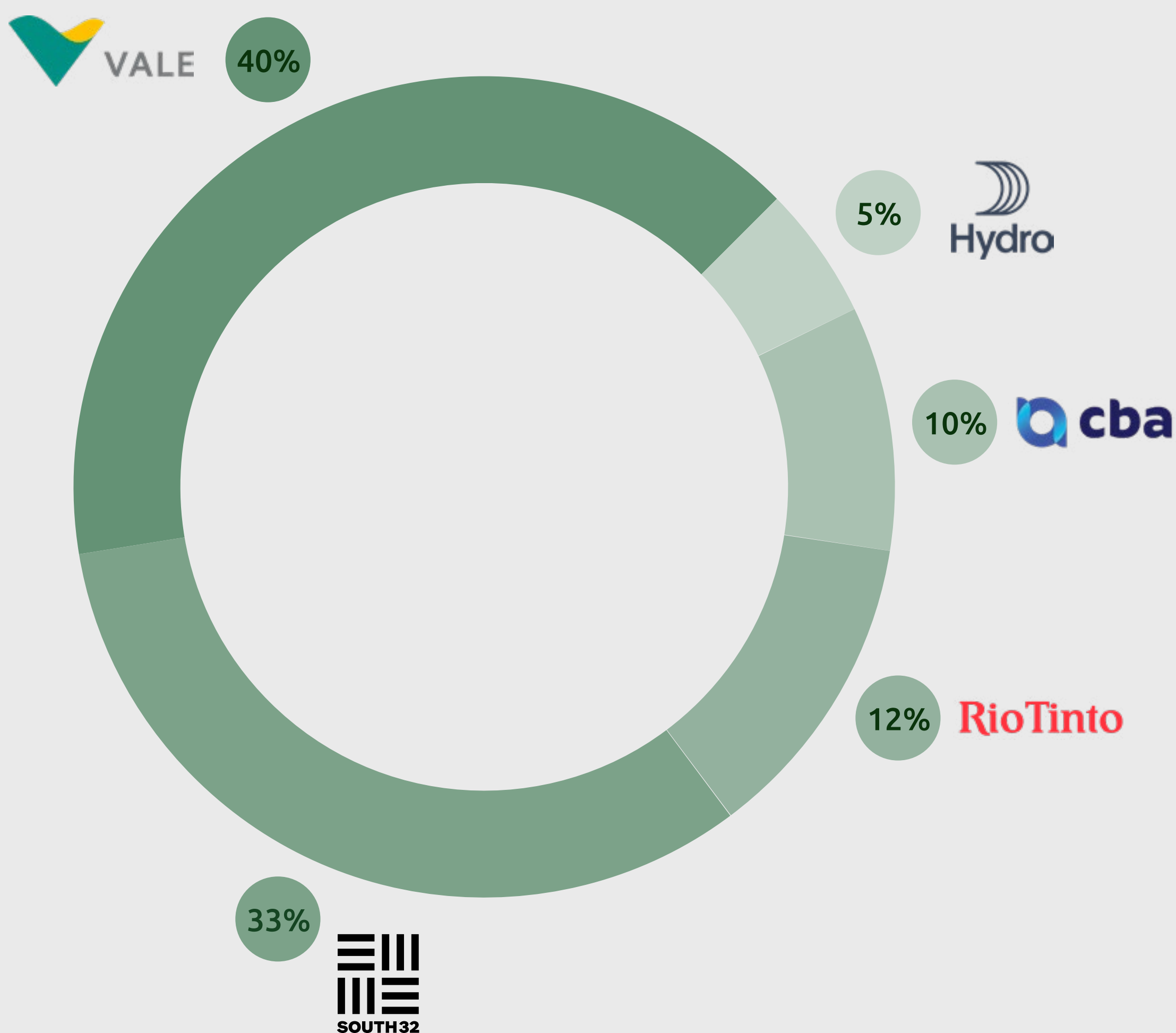
To commit to economic development while respecting people and natural resources.



CONTINUOUS IMPROVEMENT

To focus on continuous improvement with austerity and discipline.

Shareholding Structure:



Vale, Hydro and Glencore

On April 27, 2023, it was disclosed to the market that binding agreements were signed by and between the shareholders Vale and Hydro and by and between Hydro and the company Glencore. After the appropriate regulatory approvals, Glencore will hold 45% of MRN's shares.

About Glencore

Glencore has extensive industrial experience in metals and is one of the world's largest and most diversified natural resource development companies.

- More than 60 large-scale commodities, such as iron, nickel, zinc, cobalt, and others that support the building of life on the planet.
- Approximately 150 factories and offices
- Presence in over 35 countries
- More than 140,000 employees worldwide

Awards

Proud to be and to belong



Aberje Award

Inclusion as a local attitude, national recognition, and pride of being and belonging.

With the case “MRN for everyone: affirmative initiatives, diversity and inclusion in Porto Trombetas (PA)”, MRN won the first place in the Diversity & Inclusion category of the 48th edition of the Aberje Award, promoted by the Brazilian Association of Business Communication. It recognizes innovative strategies in the field of organizational communication throughout the country. MRN had already won three awards in the North/Northeast regional competition and was a triple finalist in the national stage of the same award with two other cases competing in the Internal Public and Brand categories.

“

This award is the result of continuous work to secure respect for differences and that the company is increasingly conquering equal and equitable opportunities in its operations, and it highlights the importance of organizational communication to drive trends and good practices in the Brazilian market.

*Karen Gatti
General Manager of Communications*

”



The program **“MRN para Todos” [MRN for Everyone]** was created to promote the inclusion of talents and to respect differences in the company. Two years ago, MRN hired a specialized consulting firm which performed diagnosis and census to understand which actions had worked well and which required improvement. Based on the findings, in 2022 MRN implemented actions to address diversity, including the creation of affinity groups led by employees for different generations, racial-ethnic origins, genders, people with special needs and LGBTQIAP+.

Results

One of the positive changes was the increased presence of women in MRN. Over the past two years, the participation of women has increased from 6.6% to 9.2% in all areas of the company. In addition, hundreds of people have been reached by campaigns and training offered to employees, leaders and teams in the program.

The actions of **“MRN para Todos”** are also in line with the eight strategies of the Commitment Letter from the Brazilian Mining Institute (IBRAM), which focuses on diversity in the mining sector, and with the Guide for the Prevention of Moral and Sexual Harassment, Bullying, Gender Discrimination and Ethnic-Racial Prejudice - a tool created by the company to create a support network and a safe and honest space.



I often emphasize that MRN’s culture of respect and care for the environment also extends to people. The recognition by Aberje shows only the materialization of this practice. Brazil is a country with enormous diversity and it is satisfying to know that, year after year, we have been keeping up with this reality and making our employees feel like key pieces of our evolution.

Guido Germani
MRN’s CEO



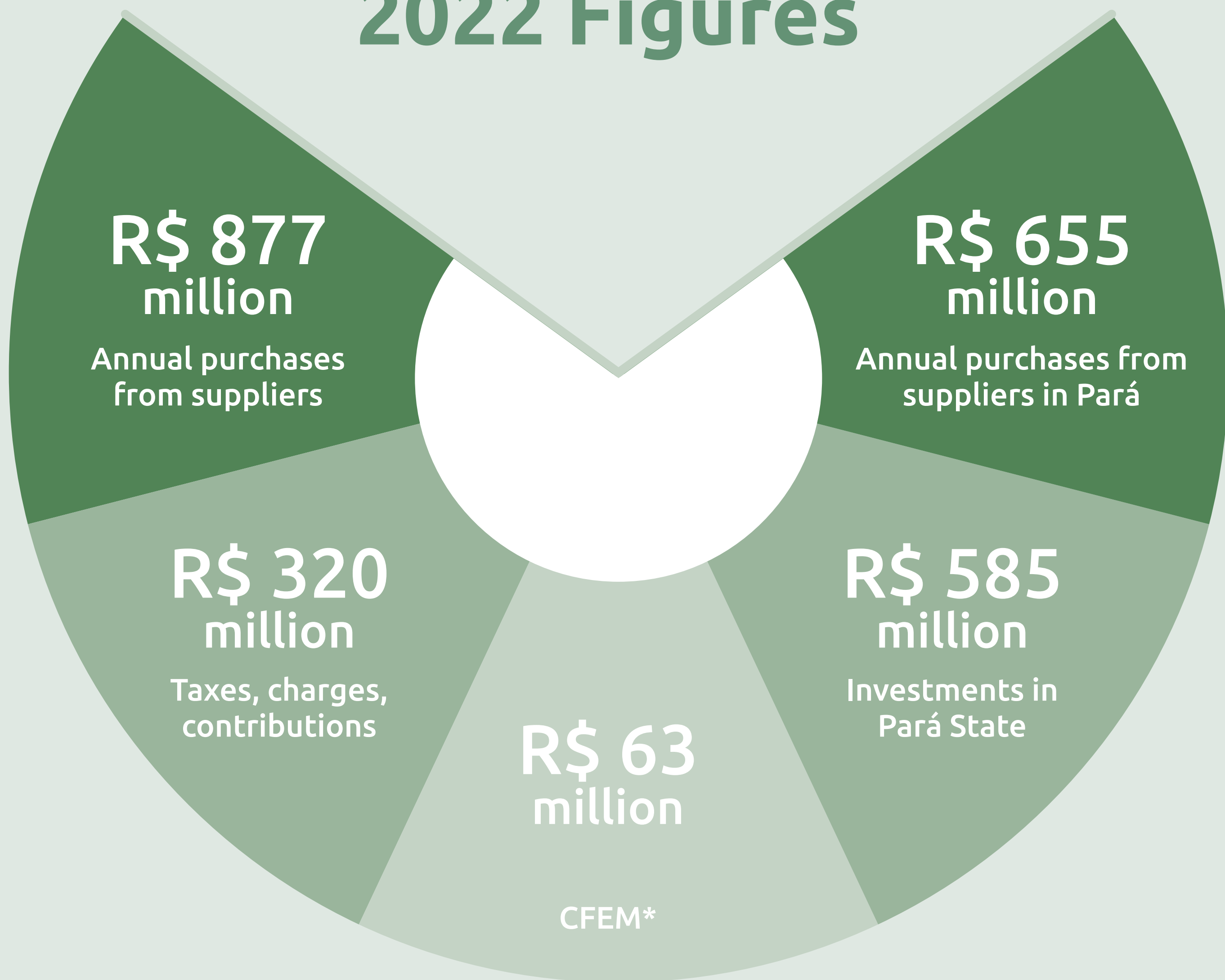
Financial Highlights

Transparency as a pillar of growth

Clarity and real data for strategic decisions.

MRN's financial area seeks to provide accurate and transparent information about the company's finances and operations, thus supporting strategic decision-making that drives its growth.

2022 Figures



The sector is responsible for **controlling costs and maximizing profit, thus securing long-term financial success.** Moreover, it secures compliance with tax and regulatory obligations, which is essential to maintain the company's reputation and credibility with its stakeholders.

*CFEM - Financial Compensation for the Exploitation of Mineral Resources is established by the 1988 Constitution and is intended for the States, the Federal District, the Municipalities and the bodies of the Union administration, due to the economic use of mineral resources.

Net revenue:

Over
**R\$1.8
billion**

Tons Sold:
Approximately

30 thousand
more than
in 2021

Net profit:

Over
**R\$162
million**



Economic and Financial Highlights

EBITDA*

In fiscal year 2022, MRN's EBITDA was **R\$529 million**, approximately **2.4% higher than in the previous year** (which was R\$ 516.8 million). The improvement in the indicator was mainly due to the increase in ore prices prompted by the rise in the LME (London Metal Exchange) and API (Alumina Price Index), as well as the increase in sales volume by **29 thousand tons**.

These effects were partially offset by higher fuel prices and other inflationary factors. It is worth noting that MRN managed to reduce most of the negative impacts through the Competitiveness Program and other cost and expense optimization initiatives during the fiscal year.

Net Revenue

In 2022, MRN had net revenues of approximately R\$1.893 billion, which represents **an increase by about 22% compared to 2021** (R\$1.555 billion).

One of the reasons for this increment was the rising price of bauxite due to the increase in the LME/API and sales volume by 291 thousand tons. These factors were partially offset by the effects of the falling dollar rate and the rise in production costs prompted by the negative variation in ore quality.

Net Profit

The company had a **net profit of R\$162.6 million** last year compared to a R\$6.3 million loss in 2021. **The main impact is related to the exchange variation on the debt balance in dollars.** Overall, the debt balance on 12/31/2021 was R\$1.193 billion, with a closing exchange rate of R\$5.58. The debt on 12/31/2022 was R\$ 1.210 billion, with a closing exchange rate of R\$ 5.22.

Considering the handling of debts between the years and the respective exchange rates, in 2021 MRN registered a negative exchange variation (negative impact) by R\$53.9 million, while in 2022 a positive exchange variation (positive impact) by R\$62.4 million was accounted for.

*Earnings before interest, taxes, depreciation and amortization.



Taxes, charges and contributions

Over the past year, R\$ 320.1 million in taxes, charges, and contributions, excluding withholding taxes, were collected. This amount represents an increase if compared to R\$199.5 million collected in 2021. The distribution of these resources was as follows:

TYPE	Unit	2022	2021
SOCIAL SECURITY CONTRIBUTIONS	R\$ Million	77.7	66.9
FINANCIAL COMPENSATION FOR THE EXPLOITATION OF MINERAL RESOURCES	R\$ Million	62.8	49.2
INCOME TAX AND SOCIAL CONTRIBUTION ON NET PROFIT	R\$ Million	69.2	16.6
PIS AND COFINS	R\$ Million	38.1	19.1
ICMS [STATE VAT]	R\$ Million	45.1	21.2
MINERAL RESOURCES INSPECTION FEE – TFRM	R\$ Million	25.6	23.1
WATER RESOURCES INSPECTION FEE – TFRH	R\$ Million	0	1.4
OTHER TAXES, CHARGES AND CONTRIBUTIONS	R\$ Million	1.6	2.0
TOTAL: TAXES, CHARGES AND CONTRIBUTIONS	R\$ Million	320.1	199.5

Cost of Products Sold (CPS)

In 2022, CPS added up to R\$1.413 billion, which represents an increase by 16% if compared to the previous year (in 2021, CPS was R\$1.218 billion). This increase in costs is mainly related to the significant increase in the price of fuel used in the operations, which were on average 38% higher than in 2021, in addition to inflationary pressure on payroll, materials, and services, and additional costs related to the increase in sales volume by 291 thousand tons.

Other operating income/expenses

Other operating expenses added up to R\$140 million in 2022, which represents an increase by 49% when compared to 2021. Among the expenses included in this category, we highlight the R\$53 million with tests for the Mechanical Tailings Removal project and the revenue of R\$41 million in 2021 referring to the recovery of tax credits related to the exclusion of ICMS [State VAT] from the Pis/Cofins tax basis. In 2022, expenses with the Covid-19 Contingency Plan were R\$28 million lower, which partially offset the negative impact in this category.



Financial Result

The financial result calculated for 2022 showed an expenditure of R\$84.8 million (in 2021 it was R\$192.5 million). The exchange variance was the main positive factor, partially offsetting the increase in interest expenses.

Shipments

LOADED SHIPS	PERFORMED
EXTERNAL MARKET	71
DOMESTIC MARKET	164
TOTAL	235

Further information:

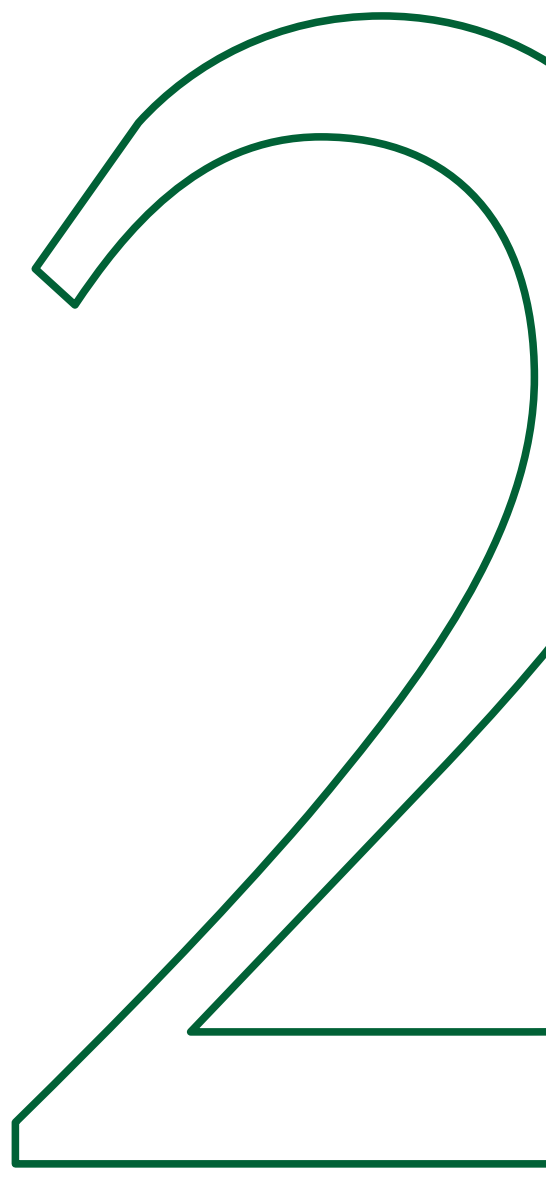
[2022 Management Report](#)



Nonconformity and Responsibilities

MRN complies with all applicable legislation. There are notifications and administrative and legal proceedings to which MRN has submitted a defense and which are still pending decision by the authorities concerned.

The summary of these ongoing contingencies is properly handled and published annually in the company's financial statements and is available on its website.



Environment

Mining integrated
with the environment



Environment

Mining integrated with the environment

The integration between the mining activity and the environment is fundamental for a responsible operation in the region, while focusing on effective actions of environmental control and management as an integral part of MRN's culture, which are essential for the sustainable production of bauxite. Therefore, throughout the year, the company performs several actions for the conservation of fauna and flora through reforestation of mined-out areas, besides managing urban and industrial waste and continuously monitoring the quality of air, water and soil.

Environmental programs are run by the company to guarantee that all activities are controlled and performed accordingly.

The Physical Environment programs:

- Control and Monitoring of Erosive Processes
- Water Control and Monitoring
- Wastewater Management and Monitoring
- Emissions Management and Monitoring
- Solid Waste Management
- Environmental Quality Monitoring at Fuel Stations

The Biotic Environment programs:

- Reclamation of Degraded Areas
- Implementation of Brazil-nut Germplasm Bank
- Rescue, Salvage, Multiplication and Reintroduction of Flora
- Wildlife Management for Mitigating the Impacts of Vegetation Suppression
- Monitoring of Two Species of Primates
- Ecological Reclamation Monitoring
- Monitoring of the Impact of Roads on Fauna
- Monitoring of the Impact of Vessel Traffic on Amazon-Turtle Populations on the Trombetas River
- Limnological and Ichthyological Monitoring of Streams
- Ecological Monitoring of the Batata Lake
- Limnological Monitoring of the Água Fria Stream and the Trombetas River

The activities performed in the monitoring programs are defined in the environmental studies and approved by the licensing agencies. Each year, the data from these activities are documented in the **RADA - Annual Environmental Performance Report**, which includes the monitoring results and details of the methods of execution. The RADA is submitted to the environmental agencies via the Electronic Information System (SEI), which belongs to the Federal Government and is accessible to the general public.

Highlights

The company conducted several programs to control its operations within the **Saracá-Taquera National Forest** in compliance with environmental laws and by maintaining strict operational controls. Thirteen programs stood out for reflecting the dedication and commitment of the company to act in a sustainable way.



1. Program for Reclamation of Degraded Areas

One of MRN's commitments is to combine environmental management for the restoration of mined-out bauxite areas with research to support the region's economic development. Throughout the year, the company continued with the Program for Reclamation of Degraded Areas (PRAD) seeking to promote vegetation restoration to reclaim the mined-out areas, therefore restoring the environment as close as possible to its original structure and functionality. The program encompasses all the areas mined out by the company on the operating and decommissioning plateaus, which are located in the Saracá- Taquera National Forest.

MRN's efforts resulted in the **planting of 492,207 seedlings** of 101 native species in mined-out areas, all of which being produced in the company's Forest Nursery. Planting was carried out from January to June and in November and December (**70 workers from neighboring communities were hired**). Also, **5.4 tons of seeds were purchased** from riverside and Quilombola communities. The techniques of planting seedlings and spreading branches on 'islands' were used to rehabilitate a total of **362 hectares**.

In compliance with the Normative Instruction of the Chico Mendes Institute for Biodiversity Conservation (ICMBio) No. 11, dated December 11, 2014¹, MRN follows an area reclamation methodology that uses the planting of native species and does not include exotic species in the Flona in its activities. Besides, the company does not use pesticides or highly toxic chemicals as part of its commitment to the conservation of fauna and flora. The company has initiated discussions and preliminary research for densification of the forest with species of economic interest. The idea is to create future opportunities for local communities.

MRN has met its goal of producing 622,092 seedlings of 130 native species and 39 botanical families by December 2022.

Footnote¹: This ICMBio Normative Instruction Establishes procedures for preparation, analysis, approval and monitoring of the execution of Projects for Reclamation of Degraded or Disturbed Areas (PRAD).



2. Solid Waste Management

Aimed at securing proper management of solid residues, including the stages of segregation, stowage, identification, intermediate and temporary storage, internal collection and transport for treatment, as well as internal and external final disposal.

Industrial solid waste management

Regarding industrial waste management, the construction of the Disposed Industrial Waste Station (CRID) represented a major advance.

In 2022, **4,259 tons of waste** were disposed of into the CRID, **99.72%** of which was treated through reprocessing, recycling or reuse, while **0.28%** was destined for incineration or to be dumped into a landfill.



The revenue generated by the sale of the disposed waste reached **R\$714,687.75**, which exceeded the disposal costs of **R\$604,926.80**.

The results achieved do reflect the company's commitment to the correct management of the waste generated in the process. A total of 745 actions were carried out to raise environmental awareness about reducing the amount of waste, correct segregation and reducing unnecessary costs, thus exceeding the goal set for the year.



Urban solid waste management

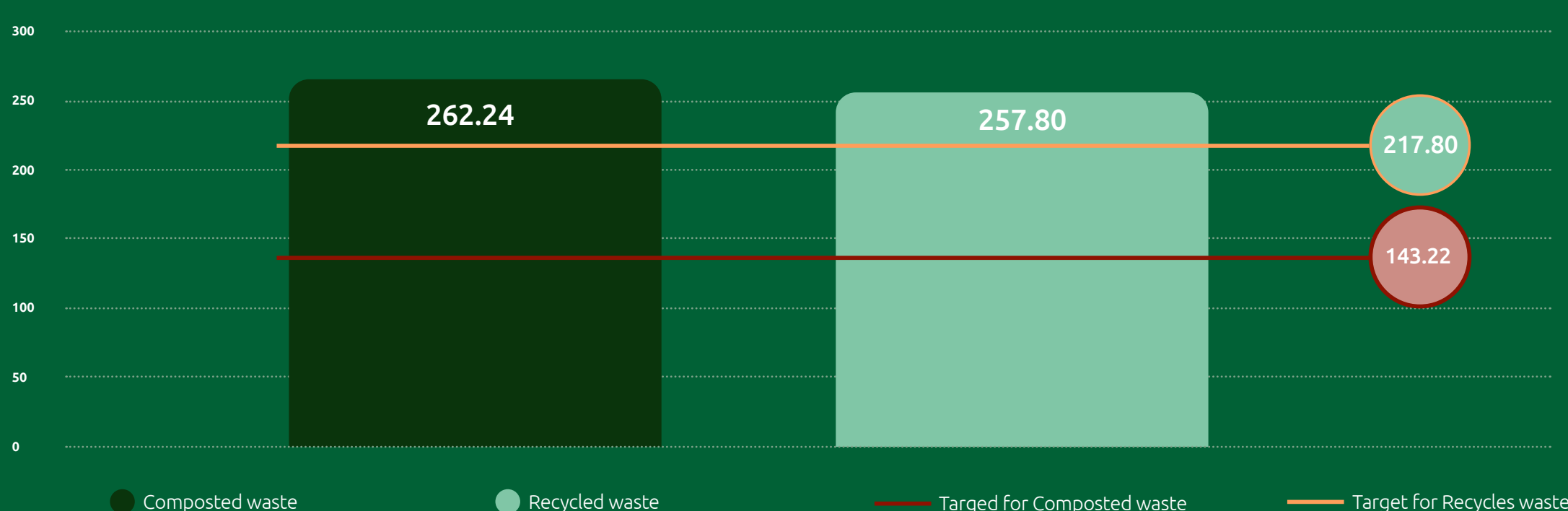
For urban waste management, MRN maintains the **Waste Treatment Center (WTC)**, where 12,837 tons of urban waste were treated in 2022. The company recycled **257 tons of inorganic waste** and **262 tons of organic waste were processed in the composting system**, thus generating an organic compost that is used in gardens and green areas in the village of Porto Trombetas and in local communities. A total of 1,221 tons of non-recyclable waste was disposed of at the landfill and 7 tons of hospital waste were incinerated.



In addition, **4,869 tons** of construction residues were reused and **6,221 tons** are still being temporarily stored for future reutilization. Environmental education campaigns are carried out to encourage the population to reduce waste generation, to reuse when possible and to segregate correctly in order to increase the amount of waste for recycling.

For urban solid waste, the goal was to increase by 10% the organic waste for composting and the inorganic waste for recycling by December 2022 - the reference was the base year 2021. The goal was exceeded, as shown in the chart below:

Organic waste for composting and recycling



3. Brazil-nut Germplasm Bank

MRN remains committed to the conservation of Brazil-nut trees (*Bertholletia excelsa* Bonpl., Lecythidaceae). In addition to the socioeconomic value to local communities, Brazil-nut trees are important for the ecological restoration of areas after bauxite mining.

Since 2013, the company has maintained the Brazil-nut Germplasm Bank*, located on the Almeidas plateau, where genetic materials of the species are preserved. In 2014, chestnut husks were harvested and seeds from thirteen native Brazil-nut groves from different states in the Northern Region were processed. From 2014 to 2016, seedlings were produced and silvicultural treatments were applied. Between 2017 and 2020, **more than 10 thousand Brazil-nut trees were planted.**

In 2021, 114 specimens of *Bertholletia excelsa*, remaining from the bank in MRN's Forest Nursery, were replanted, and crowning, weeding and fertilizing of the existing 8,750 individuals. There are records of plants introduced in 2017 that reached 10 cm in diameter at 1.3m from the ground and 7m in height, indicating success in the growth and adaptation of Brazil-nut trees planted at Almeidas.



In 2022, Marco Antonio Fernandez (right), General Manager of Licensing and Environmental Controls at MRN, shared the experiences gained through the program. The case was presented during the panel “**Contributions of the aluminum industry to a low carbon economy**”, at the 27th United Nations Climate Conference (COP 27), which was held in Sharm El-Sheikh, Egypt.



Germplasm Bank – the physical base where germplasm is conserved. Generally, these are public and private centers or institutions that preserve germplasm collections in the form of seeds, plant explant cultures, cell cultures, plants kept in the field, for example.



4. Monitoring the Impact of Roads on Fauna

MRN is very concerned with the care of animals during its activities and in the presence of traffic routes in the Saracá-Taquera National Forest, including the railroad. In this regard, it uses the Program for Monitoring the Impact of Roads on Fauna, which identifies and evaluates the points of highest incidence of road kill, considering variables such as climate and species involved. To mitigate these impacts, lower, land and overhead structures are used for fauna crossing in addition to environmental awareness actions.

Currently, MRN monitors 25 underground and 11 overhead fauna crossing structures. Throughout this monitoring, 427 individuals of 32 fauna species were recorded using these structures, which contribute to the non-loss of individuals in road accidents.

Last year, the company conducted a number of interventions aimed at raising the awareness of a growing public about the importance of preventing wildlife being run over. In total, about **155 awareness-raising actions** were promoted, reaching an audience of **2,478 people**. Highlights of this action are listed below:

- Icon warning about fauna care added to the safety briefing, which enabled a considerable reach of people, since this information is present in all of the company's presentations;
- Ecological Blitz intended for raising awareness of the drivers of vehicles that travel along the roadway, in order to minimize the incidence of collisions with fauna, thus ensuring the safety of road users;
- The "Parada Ambiental" (Environmental Safety Meeting) held during the Environment Week, which consisted of a special Daily Safety Meeting (DDS) on the theme Fauna Run Over in all areas of the company.

5. Wildlife Management

For each vegetation suppression activity, the area is inspected by specialized teams to evaluate and scare away the animals. The same team accompanies the suppression stage by checking to see if there are any animals with walking difficulties or injured. The rescued animals are returned to the natural environment and those that are injured are taken to the Wildlife Screening Center - CETAS.

Results

Animals chased away:
122 individuals (39 species)

Animals rescued in
suppression areas:
15,962 (124 species)

Survival rate:
99.68%

Note: The Annual Environmental Performance Report - RADA describes the information regarding the rescue of fauna as well as the areas, types and quantities of animals rescued and to be returned to the natural environment and/or zoo, which represents the survival rate. Animals destined for scientific collection or unavailable (perished) are accounted for in the mortality rate.





6. Monitoring of Bees in Mining Areas

Among the fauna programs, the Wildlife Management Program for Mitigating the Impacts of Vegetation Suppression promotes the rescue of bees. The rescued hives are kept in an appropriate place in the forest for later reintroduction after reforestation, given the key role bees play in environmental control.



Currently
**318 nests of
23 different species**
in the Amazon region are monitored.

In 2022, 384 nests were identified, 186 of which were transferred to the meliponary facility. This program plays an important role in increasing knowledge about breeding, species multiplication, and honey production.



7. Rescue, Salvage, Multiplication and Reintroduction of Flora

The initiative rescues flora, including epiphytes, hemiphytes and terrestrial plants, which were suppressed in the areas to be mined out, and reintroduces such species in the reforested areas. In order to conserve them, the program promotes their reproduction in MRN's Epiphytic Nursery/Forest Nursery and monitors their growth and associated ecology, while also producing a scientific collection to catalog the diversity of epiphytes.

Priorities in collecting germplasm include rare, endangered, and commercially interesting species, based on ecological, conservation, and economic criteria, as well as on the number of research lines in which they are inserted, such as the reclamation of degraded areas and conservation.

MRN rescued 34,249 plant specimens in areas to be mined out, classified as 103 species, 45 genera and 05 botanical families.

Most of these species are epiphytes (88.97%), followed by hemiphytes (10.94%), lianas* (0.05%), terrestrial (0.04%) and palm trees (0.01%).

*Lianas - woody vines.

8. Integrated Management Plan for Invasive Exotic Plants

The objective of MRN's program is to eliminate exotic species to guarantee the conservation of biodiversity in the Saracá-Taquera National Forest. Individuals are removed by cutting, clearing or girdling*. In the latter case, a 30 to 40 cm ring of the outer bark is removed until it reaches the sapwood**, thus interrupting the internal flows of the tree.

In 2022, 80,116 individuals of the species *Acacia auriculiformis* A.Cunn. ex Benth., *Acacia holosericea* A. Cunn. ex G. Don, *Acacia mangium* Willd. and *Leucaena leucocephala* (Lam.) de Wit.



*Girdling - is the cutting of the bark around the tree trunk.

**Sapwood - is the outer, youngest and most functional part of the wood in woody plants, situated between the bark and the heartwood.

9. Ecological Monitoring of the Batata Lake

For more than 30 years, MRN has been monitoring the environmental conditions and reclamation interventions in the Batata Lake.

Each year, four monitoring campaigns are carried out, as from the peak of flooding to the lowest water level, during the ebb tide, whereby water quality, aquatic organisms (including fish and algae) are monitored at eight different points in the lake. In addition, planting interventions are carried out aiming at the regeneration of the 'igapó' (flood forest), in the onshore portion surrounding the lake.

The aquatic groups and the conditions of the terrestrial environment at impacted sites in the past now feature ecological conditions equivalent to natural areas. There is evidence of improvement in turbidity and organic matter of the sediment, which are key factors for various groups of the aquatic environment, such as fish. In the terrestrial areas (igapó forest), the plantings over the years show that about 35% of the areas where replanting occurred are in a reclaimed stage, i.e. equal to the natural environment.





10. Water and Wastewater Monitoring

In line with its sustainability principles, MRN maintains evaluation, control and monitoring procedures to secure the quality of the water around its operations. Evaluation is performed before the beginning of the activities, when it is verified which water courses - surface or underground - could be affected by MRN's activities. Also, the environmental control systems to be installed are defined.

The environmental control systems include sewage treatment stations; water and oil separator boxes (mechanical workshops and maintenance yards) and systems for directing rainwater drainage and retaining entrained sediments. All the environmental control systems are inspected and monitored to verify the efficiency of their operation.

Water quality monitoring is carried out in the areas surrounding MRN's activities and inside the forest, thus encompassing more than 245 sampling points, which are distributed in the streams, lakes, Trombetas River and tubular wells and effluents. The Water Control and Monitoring Program includes monthly inspections of underground and surface waters, and inspections of springs three times a year.

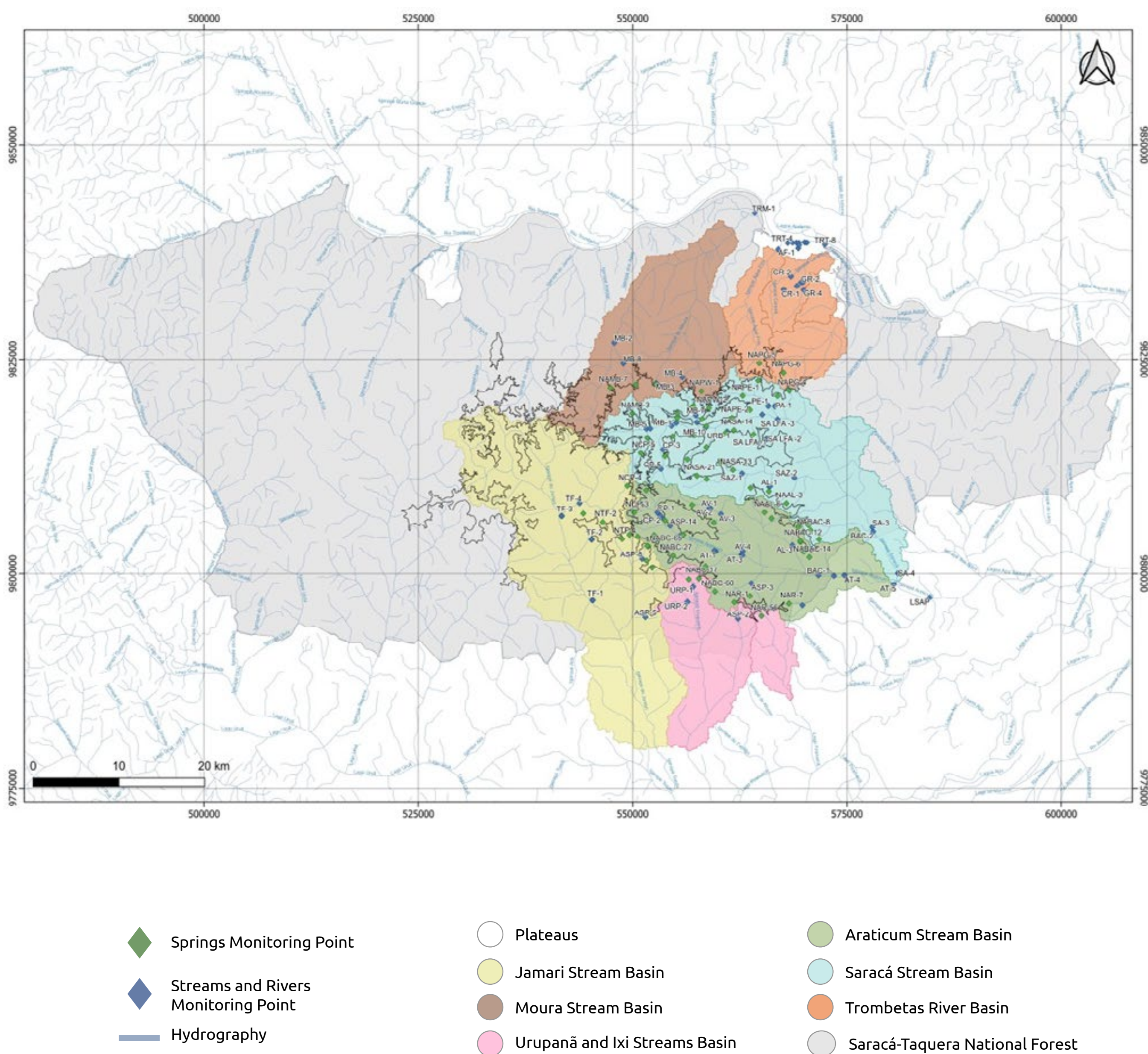


The Effluent Management and Monitoring Program covers the monthly collection of all industrial and sanitary effluents generated during the company's activities.

The more than 40,000 analysis results prove that the company's operations do not compromise the quality of the water in the region where it operates, besides providing important information about the waters of the Saracá-Taquera Forest and attesting to the efficiency of the systems.

In 2022, there were remarkable advances in database organization, thus allowing for more dynamic monitoring of the management of water resources and effluents through interactive panels.

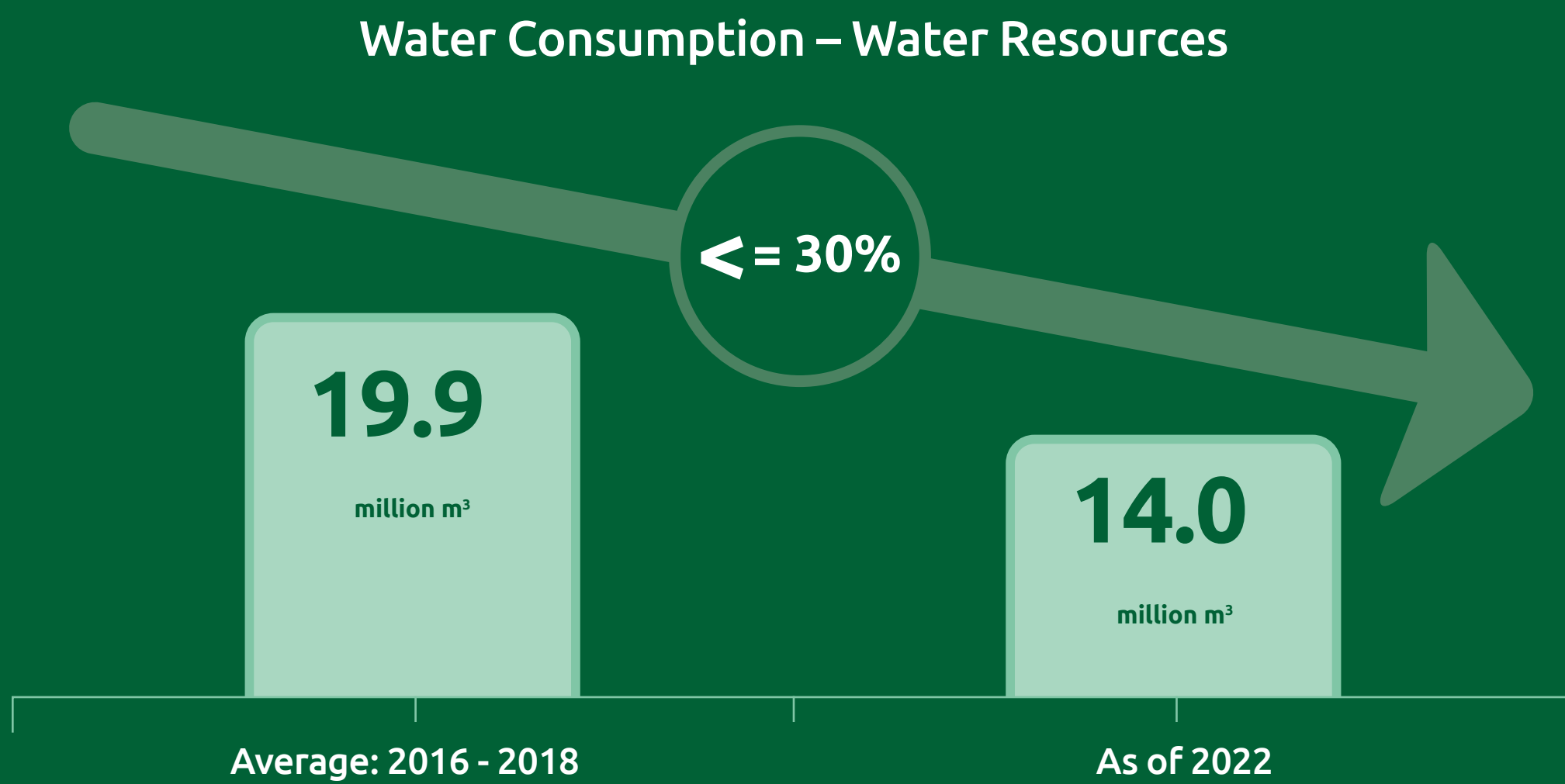
Monitoring points at springs, streams, lakes and rivers.



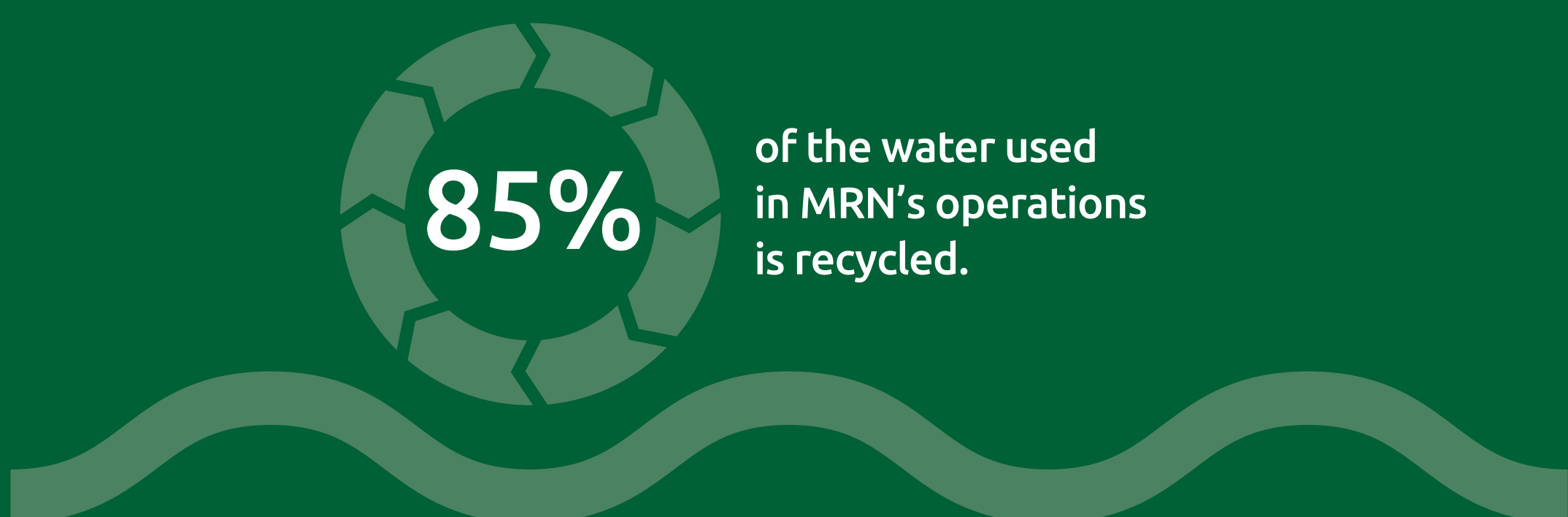


11. Abstraction and use of water resources

MRN has announced its goal of reducing the average consumption of industrial water from 19.9 to 14 million m³ as of last year - not including the volumes used for human consumption (supply to the Water Treatment Plants - WTP). It is worth pointing out that the reduction target is still valid for the coming years, even with the startup of the Saracá West dams.



The company uses water abstracted from the Trombetas River and streams located within the Saracá-Taquera National Forest. In addition, the plateaus in operation have authorization for underground water abstraction. Surface water abstraction is authorized by the National Water Agency (ANA), while groundwater extraction is authorized by the Pará State Department of Environment and Sustainability (SEMAS).



The data and information about water resources abstraction and use in 2022, both for industrial and human use (WTPs), are shown in the following tables:

*Total water abstracted by source	2022
Surface water (rivers, lakes, wetlands, oceans)	10,072,475
Trombetas River	3,230,995
Sacará Stream (Km 25)	5,472,324
Saracazinho Stream	81,558
Aviso Stream	462,310
Saracazinho (Almeidas) Stream	593,016
Monte Branco (Saracá)	232,272
Groundwater	129,276
Bela Cruz Wells	49,447
Teófilo Cipó Wells	79,829
UTC I (Sorting and Composting Plant) Wells	-----
Effluents from other organizations **	Not applicable
Concessionaire / utility company***	Not applicable
TOTAL	10,201,751

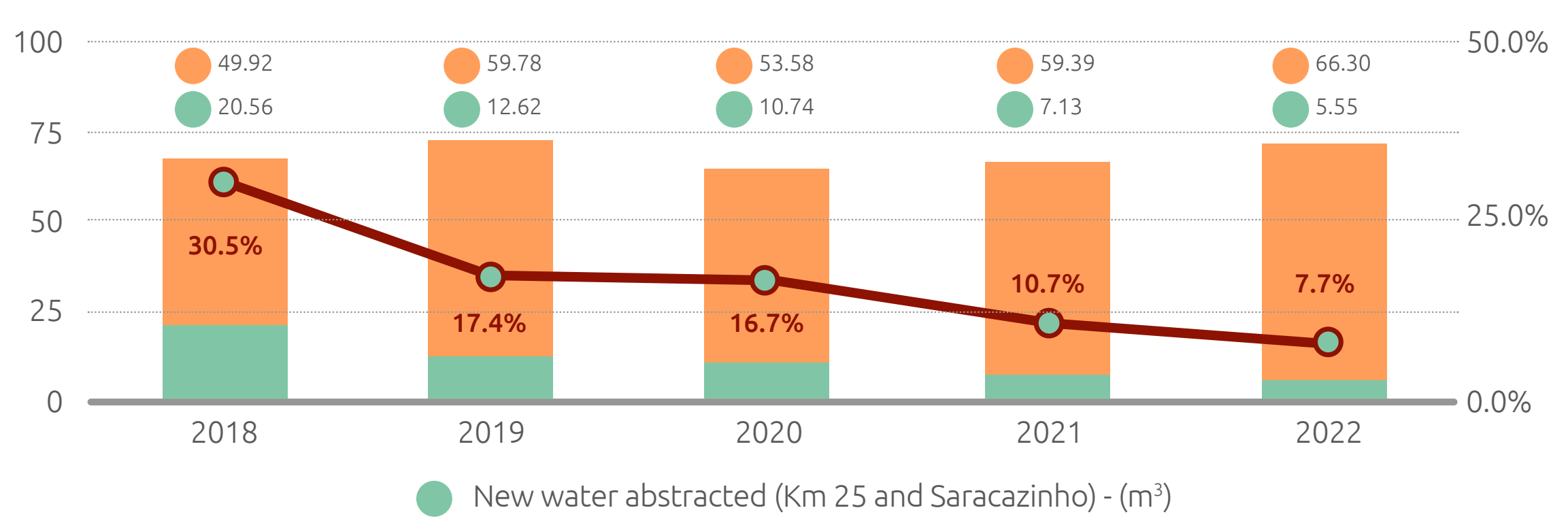
*Volume represents the total amount of water for human and industrial consumption in the year. Values reported in the DAURH;
 ** Wells with no abstraction since May/2018;
 *** MRN neither receives effluents from another organization nor purchases water supplied by a water supply company.

Recycled/reused water	2022
*Total volume of recirculated / reused water (m3)	66,298,177
** New water abstracted (m3)	5,553,882
Recovery rate (%)	92

*This volume represents the total amount of water recirculated/reused in the Beneficiation Plant's water supply;
 ** Volume abstracted to supply water to the Beneficiation Plant, pump sealing and booster system (compact pumping system) on the Saracá plateau.

*Measurement unit used: MMm³ (Million Cubic Meters).

MRN has mapped out the risk “Unavailability of water for production processes” for the Dams Management area, and this risk is classified, in 2023, as a “minimum” level; therefore, a risk to be monitored with low probability of occurrence, according to the evaluation done annually in the Risk Management Workshop.



In recent years, there has been a significant decrease in the volume of new water in the abstraction sites located at km 25 and the Saracazinho creek, both authorized for MRN, to supply water to the Beneficiation Plant. The lowest water abstraction in recent years was recorded in 2022 - a volume of 5.55 million m³. Parallel to the reduction in new water abstraction, the largest reuse of water in recent years was recorded - 66.30 million m³. This recovered volume consists of rainwater and water recovered from bauxite tailings.



12. Emissions Management and Monitoring Program

The operation of trucks and equipment can cause the dispersion of dust outside the operational areas. To mitigate this impact, MRN uses some techniques, such as the adequate maintenance of the roads and the use of water tankers for constant road watering for dust suppression. To check whether the tools are working well, air quality is monitored on a weekly basis in 16 stations, according to the progress of the mining sites, where mass concentrations of Total Suspended Particles and Inhalable Particles are monitored. In 2022, a total of 1,272 samples were collected.



To check the sound pressure (or the noises generated in the operation), daytime and nighttime measurements are taken at potentially noise-emitting sites at 19 points. Last year, 352 readings were generated.

Weather monitoring is also conducted in five automatic stations distributed on the plateaus and in the area around the village of Porto Trombetas. Weather monitoring provided 399 data readings.

All motor vehicles, light-duty or heavy-duty, traveling in the urban or industrial area of Porto Trombetas and in the operational areas, even the new ones, undergo measurements and monitoring of opacity of the exhaust gases. In 2022, 397 vehicles passed the opacity test.



13. Commitment to GHG emission reduction

As part of efforts to promote a more sustainable future, MRN has a goal to reduce greenhouse gas (GHG) emissions by 23%. The commitment is in line with global climate change mitigation targets and international sustainability standards, such as the Aluminium Stewardship Initiative (ASI).

GHG emissions have always been monitored by the company, which is constantly seeking new alternatives that promote reduction thereof in all of its operations. By means of annual inventories, the impact of these initiatives on several parameters is evaluated. The inventories go through a third-party audit by an agency accredited by the National Institute of Metrology, Quality and Technology (Inmetro) to be later published in the GHG Protocol platform of the Getulio Vargas Foundation (FGV).

The listings break down the company's GHG emissions by category/scope for the year 2022.

Scope	Category	TCO2e Emissions
Scope 1	Agricultural	53.14
	Stationary combustion	170,350.34
	Mobile combustion	89,025.03
	Fugitive	2,981.10
	Land use change	314,671.37
	Solid residues and liquid effluents	6,112.97
Scope 2	Purchase of electric energy	0.40
Scope 3	Leased assets (the organization as lessee)	1,984.16
	Purchased Assets and Services	2,453.71
	Residues generated in the operations	4,756.88
TOTAL		592,389.10

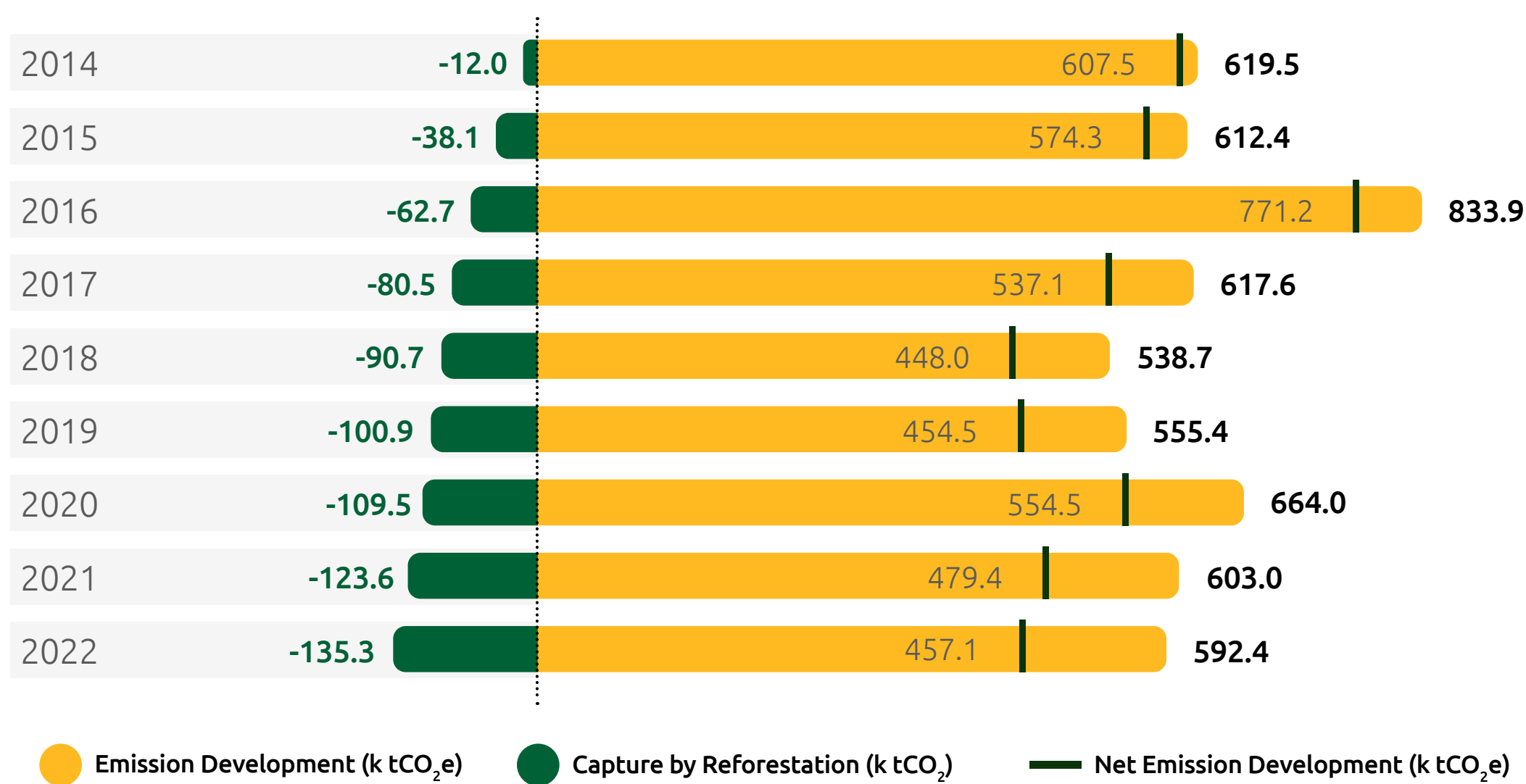
Reforestation activities play a crucial role in the conservation of biodiversity. Reforestation has the power to remove carbon dioxide (CO₂) from the atmosphere, thus contributing to the reduction of global warming.

Renewable CO₂ removals (tGEE)

Scope	Category	Renewable CO ₂
Scope 1	Land use change	-135,306.19
Total		-135,306.19

According to the Inventory Qualification Policy of the Brazilian GHG Protocol Program, **MRN received the Gold Seal in 2022**, as well as its 2022 inventory. This achievement bolsters MRN's commitment to

Reduce 70+ thousand tons of CO₂



*This decrease in tons of CO₂ is due to the reduction in native vegetation suppression.

Our decarbonization roadmap* has a number of the most relevant initiatives to achieve the GHG emissions reduction goal, such as:

- Building and operate a transmission line connected to the national grid;
- Converting the dryer's energy source to natural gas;
- Developing a new product: Low-Carbon Bauxite;
- Review the emission factors related to plant physiognomy and carbon capture.

The details of the GHG emission reduction plans are detailed in the Sustainability Targets Plan and available at MRN's website.

*Roadmap - a visual tool that works like a map to guide teams through a project. It resembles a timeline and is used in companies to organize and manage product development, strategic planning for the year, people development, among other applications.



Information Backup

Data by scope and category

Scope	Category	GHG Inventory MRN - 2020	GHG Inventory MRN - 2021	GHG Inventory MRN - 2022
Scope 1	Agricultural	63.10	87.89	53.14
	Stationary combustion	175,584.89	174,079.85	170,350.34
	Mobile combustion	99,064.01	100,151.61	89,025.03
	Fugitive	4,014.60	2,725.49	2,981.10
	Land use change	366,595.93	305,955.69	314,671.37
	Solid residues and liquid effluents	2,837.73	4,953.07	6,112.97
Scope 2	Purchase of electric energy	0.23	1.04	0.40
Scope 3	Leased assets (the organization as lessee)	3,479.99	2,858.23	1,984.16
	Purchased Assets and Services	6,828.96	5,323.27	2,453.71
	Other Scope 3 emissions	1,246.96		
	Residues generated in the operations	4,240.12	6,875.95	4,756.88
Total		663,956.51	603,012.10	592,389.10

Public Disclosure of Spills and Leakages

The remediation of environmental impacts resulting from possible spills and leakages of products, such as bunker oil, diesel, gasoline, lubricating oil and grease, is extremely important for MRN, which adopts several operational control measures. They are established by taking into consideration the characteristics of the products and activities and the potential impact on the environment, such as:



- Containment bays for temporary storage of products;
- Waterproofed floors;
- Routine inspections;
- Warning devices;
- Measuring instruments;
- Preventive maintenance of equipment and vehicles;
- Operational training;
- Emergency drills;
- Valve lock-up;
- Containment troughs;
- Environmental emergency kits.

The company follows an internal procedure for analysis and investigation of environmental accidents and any spill or leakage that causes damage to the environment is submitted to an internal analysis and investigation procedure. In addition, in compliance with the regulations in force, it is communicated to the relevant environmental agency.



Throughout the year, **no spills** with a potential to cause significant damage to the environment **were recorded**.

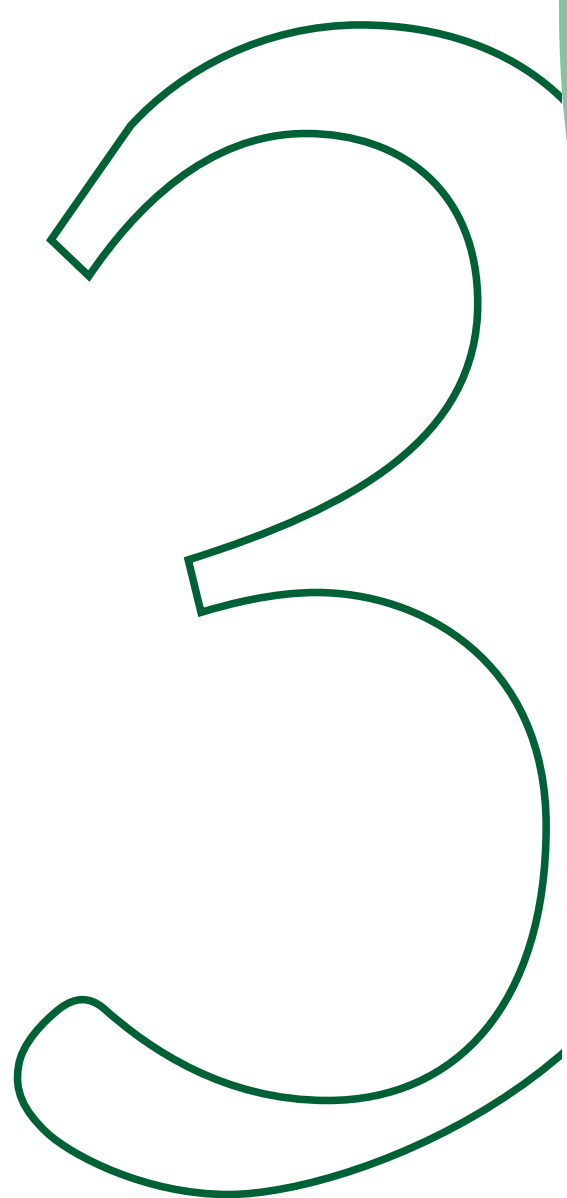
Licensing

In November 2022, the Brazilian Institute of Environment and Natural Resources (IBAMA) published in the Federal Official Gazette (DOU) the acceptance notice of the Environmental Impact Study (EIA) and its respective Environmental Impact Report (RIMA) concerning the New Mines Project (PNM). That study was developed by MRN and featured a significant change in the handling of dry tailings, which will be used to recover the pits and prepare these areas for planting, thus preventing new sites to be opened for the tailings **(details on this technology can be found in the chapter on the New Mines Project).**

MRN's Environmental Licensing area not only managed the PNM, but also supervised the fulfillment of the environmental commitments established in the constraints and programs of the **55 environmental licenses granted to the company.** Out of these licenses, **16 are Operation Licenses (OL), 12 are Vegetation Suppression Permits (VSP) and 9 are water use concession grants.**

In 2022, the following Licenses/Authorizations were obtained:

Document	License/Authorization No.	Issuing Agency
VSP – Vegetation Suppression Permit	1053.9.2022.70407	IBAMA
VSP – Vegetation Suppression Permit	No number	SEMMA/Oriximiná
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.83295	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.82588	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.89952	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.89986	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.90010	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.90017	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.90018	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.92543	IBAMA
Authorization for the Use of Forest Raw Material - AUMPF	1053.9.2022.92410	IBAMA
Direct Authorization - DA	09/2022	ICMBio Trombetas
Direct Authorization - DA	26/2022	ICMBio Trombetas
Preliminary License - PL	001/2022	SEMMA/Oriximiná
Installation License - IL	002/2022	SEMMA/Oriximiná
Installation License - IL	001/2022	SEMMA/Oriximiná
Operation License - OL (Renewal)	697/2007	IBAMA
License for the Use of Vehicle or Engine Configuration - LCVM	2022/85229	IBAMA
Grant	189/2022	ANA
Authorization for capture, collection and transportation of biological material - ABIO	1389/2022	IBAMA



People

Everyone together in one purpose

Occupational Health and Safety

Caring for everything and everyone

Community Relations

Dialog and partnership hand in hand



People

Everyone together in one purpose



The pride of being and belonging is what moves people around MRN. Every day, in search of much more than reinventing themselves, in the yearning to discover their full potential and to identify themselves as a key piece within this fantastic gear of mining that never stops, walking in the same course as that of the Amazon rivers, that is, in constant movement. In this continuous process of transformation, they realize that it is no longer the world of one or the other, but of a universe that is plural in talent and inclusive in ideas. By pooling it all together, they discover they can go beyond, overcome barriers and give meaning to the common purpose, thus building an MRN for everyone.

Humane, Inclusive Mining



In 2022, for the second consecutive time, **MRN was elected one of the 50 best companies to work for in Brazil**, according to the Great Place To Work (GPTW) ranking, in the Industry category. The company had already won 2nd place in the local phase.

Last year, MRN also expanded the culture of Diversity & Inclusion in all its dimensions through the “MRN para todos!” (MRN for Everyone). The program completed 2 years in 2022. It is aimed at securing greater representativeness and rethinking its actions in order to provide equity both in people management policies and practices and in business strategy.



MRN develops **actions that support and build** an increasingly better place to work.

Training and Development

The Human Resources area provides the employees with Continued Education actions, by MRN's initiative or in partnership with teaching institutions from all over Brazil, aiming at the development of the necessary competencies for the performance of their activities.

The Continued Education program also includes online courses on relevant themes, such as Innovation, Diversity, Leadership, New Skills, and Digital Transformation, which can be accessed by PC or cell phones.

To comply with the NR-22 Standard, an annual calendar with 766 classes of occupational safety training is offered to MRN employees and outsourced companies, amounting to more than 10,000 attendees.

Thousands of hours in development.

R\$ **1.2**

million
invested in
training

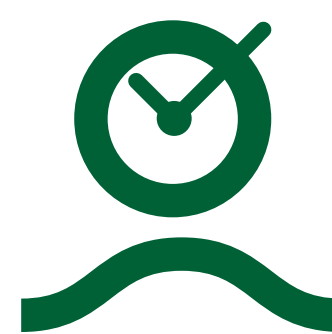
1,625
employees

participated in training
and development actions



87+

thousand hours
of man hours
(MHT) trained.



Main professional improvement initiatives



Leadership Development Program

The performance of the leaders is decisive for the professional development of the teams. For this reason, the company's leadership participates annually in the customized program, for which main themes in 2022 were Diversity & Inclusion, Engagement and Leadership. The result was the improvement in employee perception of their leaders in the following items: trust, relationship quality, communication, competence, and structural and operational support.



Successor Development Program

The action aims at improving the skills and competences of those employees with a potential to assume their first management position or more complex positions. The program has customized tracks for each leadership passage.



Trainee Development Program

Aimed at development of technical and behavioral skills through learning in the area, career mentoring and training, thus favoring adaptation to the mining context and the labor market. In 2022, the Program had 77% of its members hired, 90% of whom being women, which strengthens the company's Diversity & Inclusion strategy.



Young Apprentice Development Program

It prioritizes the continuity of development in technical qualification by getting young people better prepared for seeking their first job. The program is carried out in partnership with the National Service for Industrial Learning (Senai) and focuses on theoretical and practical development.

Through the qualification program for Young Apprentices, 111 people were trained - out of which, 18% have already been incorporated into MRN's headcount since 2022. In addition, there are 105 community members in the process of qualification through the Education Program.



Individual Development Plan

The objective is to promote professional growth and enhance competences and skills by focusing on the specific development needs of each audience.



Y-Career Program

Career building by means of two professional growth paths, thus allowing the employee to choose to take on a managerial position or become a specialist in a certain technical area.



Engagement Program

Since 2020, MRN has had a Multidisciplinary Engagement Program. Over the past year, its employees have worked on strategies to strengthen the practices that bolster the company's culture. In addition, the company conducts ongoing customized surveys in order to map out the actions that continuously impact everyone's engagement.



Performance and Career Management

The company carries out an annual performance evaluation to structure the Individual Development Plan for each employee. There is also a Career and Succession Program for leadership positions in which career committees are held to discuss the progress of the potential professionals being mapped out.

The Integrated People Cycle occurs annually and aims at reinforcing MRN's commitment to the development of its employees. The process includes a phase to analyze the competences of all professionals. Based on it, a structured agenda on career, future challenges and feedback is produced, which the Individual Development Plan is based upon.



Based on the new Strategic Planning, the Competences panel was reconfigured with important changes in order to associate people strategy to the business objectives and challenges.



Diversity and Inclusion

One of the main results of “MRN pra Todos” was the increased participation of women in leadership positions, which rose from 9% to 12% in 2022. MRN recognizes that it is necessary to work even harder for this number to increase at an accelerated pace and, to this end, it is committed to the continuous development of affirmative actions.

Implemented in 2021, “MRN para todos” emerged with an educational bias on respect for differences in order to secure equity in people management policies and practices and in the strategy of the business.

The goal is to monitor indicators in each strategy, thus demonstrating progress in all areas that need improvement within the sector.

This initiative also involves professionals from various areas to secure greater representation, to encourage and appreciate the participation of diversified talents, such as women, black people, people with disabilities, and LGBTQIAPN+ individuals.

Since the launch of the program, MRN has relied on a Work Plan involving the Diagnosis, Training, Governance, and Strategic Planning fronts, which will sustain the affirmative actions over the next few years.



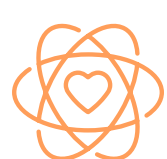


I arrived at MRN in 2012 through a lecture and analysis of resumes, especially for people with disabilities (PcD). I got training for a year and acquired experience and qualifying myself. It was essential to have this opportunity to get here. Today I realize that the company is more and more open to all PcDs”.



*Erivane Santos
Administrative assistant,
hearing-impaired.*

Main actions:



Activation of the affinity groups, with support from the specialized consultancy in Diversity, Equity, and Inclusion.



Workshop for leadership training, aiming at breaking unconscious biases in the recruiting process.



Capacity building for the work group - advisory committee.



Training and mentoring for the affinity groups for structuring and action plan of the first steps to be taken by the groups.



D&I Week: featuring a talk on humanized relationships, unconscious voices theater, sensitizing film session, privilege race dynamics, and a talk on place of speech and the role of the allied person.



D&I booklet for affinity groups, emphasizing and complementing the Guide to Preventing Moral and Sexual Harassment, Bullying, Gender Discrimination and Prejudice.



Development track on D&I themes for deepening, qualifying and sensitizing the MRN public on the corporate education platform.



Encouraging conversations about humanized relationships.



Baby Kit

MRN has expanded its benefit basket by offering all employees a Baby Kit to celebrate such an important moment in everyone's life: the birth of a child.

When celebrating the birth of these newborns, a gift is given to the father or mother, in a demonstration of affection from the MRN family, to welcome the dependents of all employees as a gift for this new family member, and to emphasize the importance of the family with something special for the new baby, thus valuing what really matters: life and love.

Humanized dismissal

In 2022, the humanized dismissal process was implemented to conduct the dismissal of MRN's employees in a humanized way, so that they feel welcomed in this delicate moment.

The humanized dismissal is a process that needs to be communicated and explained carefully, taking into consideration the respect for the employees and their entire history in the company, thus demonstrating the clarity, transparency, and ethics of all those involved during the steps of the process.

Hence, the following are the results of this process:

- Improvement in the organizational environment;
- Increased employee confidence in the leader and the company;
- The organization's values and social responsibility grow stronger;
- Reduced labor lawsuit risks;
- Finally, this is a strategy that is being incorporated into MRN's organizational culture.

Compensation Survey

Aimed at supporting MRN's Remuneration Management Board in formatting its strategy by providing updated market information, parameters for decision making with regard to market positioning and internal structure and equity.

Starting Over

In 2022, several people were contemplated with the project, which is part of MRN's Quality of Life Program and proposes to prepare the employee for retirement by enabling a dismissal process that values and recognizes the contribution of its professionals.

MRNprev

The company's Supplemental Pension Plan, managed by Bradesco Vida e Previdência, aims at providing employees with a complementary benefit to that paid by the Social Security, plus coverage for cases of disability and death.

Financial Support

Last year, 143 MRN dependents were benefited with the "Financial support for employee's child in technical or higher education."





Corporate Volunteering Program

The volunteering program was implemented in 2022 to stimulate the connection between people and the experience of living in the Amazon. By promoting meetings between professionals and local communities, the action provides mutual learning and the construction of a shared legacy.

The program is divided into 13 initiatives, which rely on the participation of 50 employees from different areas, including in-house and outsourced employees. The volunteers are involved in the construction of each of the stages of the projects. The participation in voluntary initiatives in the corporate environment is closely connected to personal and professional development.



“

It was something that appealed to my heart and my attention because it is an action that is in line with my purpose in life.

Luciana Sousa
People Management Analyst

”



11 actions performed



Approximately 1,000 people positively impacted by the actions



50 volunteers involved



More than 3,000 dedicated hours

Abhorrence of forced labor

Respect for people is a value at MRN. Based on this principle, the company has a Labor Relations Manual, which guides its professional conduct and establishes that the relations with in-house and contracted employees are conducted in strict compliance with the labor legislation.

The company provides all the infrastructure, remuneration, and training support, with professional appreciation and safety to perform the labor activity, and condemns any kind of forced labor, and not to condone activities related to modern slavery.

The ILO Forced or Compulsory Labor Convention (No. 29, adopted in 1930) defines forced or compulsory labor as any work or service exacted from a person under the threat of a penalty and for which the person has not offered himself/herself spontaneously. Its exploitation can be undertaken by state authorities, by the private sector or by individuals.

As a way to combat this situation, MRN has resolved to “reproach the practice of forced or compulsory labor” and has implemented internal and external policies to ensure that the possible existence of such behaviors can be countered. For example, all its employees are guaranteed the freedom to terminate their employment contracts in accordance with the labor legislation in effect in the country. The broad right to leave the workplace at the end of the workday or when there is imminent serious danger is also guaranteed.



Upon hiring, all employees and leaders are informed about the prohibition of threatening, abusive and exploitative behaviors, including gestures and language. This commitment is also applicable to MRN’s suppliers, who are informed of these conditions in the recruiting and hiring processes.

To ensure that these regulations are met, the company has several reporting channels, and no complaints regarding forced or child labor have ever been registered.

Place of Origin X Headcount										
Region	State		Quantity							
NORTH	PA	PA-ORIXIMINA	259	16.29%	1,066	67%	1,329	83.58%	1,365	85.85%
		PA-SANTAREM	458	28.81%						
		PA-TERRA SANTA	261	16.42%						
		PA-FARO	7	0.44%						
		PA-ALENQUER	3	0.19%						
		PA-JURUTI	0	0.00%						
		PA-OBIDOS	78	4.91%						
	OTHER	263	17%							
	AM			21	1.32%					
	AC			0	0.00%					
	AP			14	0.88%					
	RO			1	0.06%					
	RR			0	0.00%					
TO			0	0.00%						
NORTHEAST	AL			2	0.1%	65	4.09%	1,590		
	BA			24	1.5%					
	CE			5	0.3%					
	MA			14	0.9%					
	PB			3	0.2%					
	PE			4	0.3%					
	PI			4	0.3%					
	RN			6	0.4%					
SE			3	0.2%						
MID-WEST	DF			1	0.1%	14	0.88%			
	GO			13	0.8%					
	MS			0	0.0%					
	MT			0	0.0%					
SOUTHEAST	ES			7	0.4%	136	8.55%			
	MG			85	5.3%					
	SP			31	1.9%					
	RJ			13	0.8%					
SOUTH	PR			8	0.5%	10	0.63%			
	RS			1	0.1%					
	SC			1	0.1%					

Total headcount without young apprentices and trainees	100%	1,590
Total young apprentices	0.1%	1
Total trainees	0.0%	0
Total headcount with young apprentices and trainees	100%	1,591
Total headcount with young apprentices	100%	1,591
Total Pará State management body (born in Pará State)	2.45%	39
Total Quilombola descendants without young apprentices and trainees	3.9%	62



Local labor

67% of MRN's employees come from Oriximiná, Terra Santa, Faro, Óbidos, Alenquer, Juruti and Santarém, municipalities in the Western Pará Region.

Collective bargaining

100% of employees are covered, except the Young Apprentices.

Productivity

MRN's productivity in 2022 was 9,209 tons of bauxite per employee, slightly higher than in 2021, when the company reached the mark of 9,193 tons per employee.

Equality

The Career Plan Policy secures equal pay for both men and women. None of the company's positions has restrictions on retaining professionals by sex.



Total number of workers by type of employment, employment contract and region, broken down by sex:

	2022		2021		2020	
	Men	Women	Men	Women	Men	Women
Workforce/total employees						
Total employees with young apprentices	1,483	153	1,393	173	1,460	122
Permanent contracted employees (third parties) + Works	3,774	624	3,206	571	3,757	460
Total workforce	5,212	777	4,599	744	5,217	582

	2022		2021		2020	
	Men	Women	Men	Women	Men	Women
Number of employees by type of employment contract						
Fixed-term* young people	3	1	27	30	15	9
Indefinite period	1,364	152	1,366	143	1,445	113
Total by sex	1,367	153	1,393	173	1,460	122

*152 women on normal contracts and 1 young apprentice.

	2022		2021		2020	
	Men	Women	Men	Women	Men	Women
Number of employees by region						
Porto Trombetas (PA)	1,406	135	1,364	159	1,454	112
Belém (PA)	1	4	2	4	2	4
Other regions	31	14	27	10	4	6
Total by sex	1,438	153	1,393	173	1,460	122

*2022
48 people working remotely, 29 men and 12 women. 2 people working in person at the Belém office.

Occupational Health and Safety

Caring for everything and everyone

The prevention of incidents and the care for people is part of MRN's daily routine. The company believes that the development of its activities is linked to the safety, health and well-being of its employees. Therefore, it continuously invests in initiatives aimed at improving the quality of life and maintenance of productive, healthy and safe work environments.



Developing in safety culture is about bolstering prevention barriers and genuine care for people.

Last year, the company issued 22 Safety Alerts with themes oriented to accident prevention, in addition to several campaigns such as: hand care, traffic safety, 5S, commemorative dates, among others. Regarding health, in addition to the prevention and health care campaigns, more than 700 telemedicine consultations were provided to the employees.

The technology solves several logistical and operational challenges in the health system of Porto Trombetas by redirecting simpler cases to outpatient services, thus minimizing the overload in highly complex services, organizing the service flows safely and quickly, and offering quality assistance.

Get to know more initiatives in the Occupational Health and Safety areas:

Safety

To maintain the safety of its operations, MRN performs inspections in the work sites on a daily basis. The objective is to certify that the conditions of the work environment are adequate for the safe performance of the activities. The inspections also encourage the adoption of preventive behavior and active care among its employees.



In addition to daily inspections, internal and external audits are carried out periodically to identify conformities of the management system. Deviations and opportunities for improvement are recorded and analyzed for implementation of improvement actions.

In addition to the audits, the company also relies on the support of a consulting firm specialized in mapping out the new legislations applied to its operations.

The alignment and registration of all safety, health and environment actions are done by means of the Integrated Management System (IMS). Integrated management allows MRN to identify, map out, mitigate and control its risks. Annually, training courses, workshops, mapping and control tests of the company's main risks are carried out. The operational and maintenance areas, with the support of the safety, health and environment teams organized by means of the IMS, perform jointly annual cycles of analysis and secure the maintenance of the control barriers. This is essential to prevent the materialization of risks and enhance the maintenance of safety in MRN's activities.



Enhancement of the Internal Commission for Accident Prevention (CIPA)

Another major element at MRN is the representation of its employees through the Internal Commission for Accident Prevention (CIPA). In addition to in-house campaigns, the members of CIPA get differentiated training and are the catalysts of actions in their areas. They are active listeners in all sectors and provide consultations, clarifications, and communication.

Right of Refusal or Stop Card

An initiative implemented and signed by the Executive Board that enhances the practice of active care. Each employee is responsible for their own safety and that of their colleagues, based on the maxim "If it's not safe, make it safe." It states that everyone has the right and duty to stop any activity if they do not feel safe or perceive something that could compromise their safety or that of their colleagues.

“

I have never had an accident in the company. My colleagues and I work very autonomously and safely; we identify and avoid risky situations.

Israel Santos
Operation Technician

”



To integrate and keep the employees qualified for the development of their activities, MRN has two training centers, which in 2022 assisted more than 13,000 people and provided more than 55,000 hours of training to its own employees, contractors, construction sites, and projects.

The maintenance of qualified and prepared work teams supports preventive actions, practices, and safety tools, including:

- Integration and training plan
- Commitment Matrix
- Safety Toolbox Meeting
- Inspections
- Volunteering Brigade
- Safe practices for working at heights
- Safe practices for confined spaces
- Correct use of PPE
- Work permits
- Energy lock-out
- Job Safety Analysis.
- Safe vehicle condition / preventive driving
- Off-road driving
- Driving trucks and heavy-duty vehicles

These tools help to control operational risks and hazards and prevent unintended occurrences.



Number of work-related accidents

Performing these actions supports MRN in reducing occurrences and maintaining healthier and safer work environments.

As a result, we have the following rates:

Rate	2020	2021	2022
Non-lost time accidents	0.51	0.56	0.32
Lost time accidents	0.09	0.36	0.16
Global Rate	0.60	0.87	0.49
MHW	11,696,448	12,603,418	12,361,462

These efforts guarantee that MRN can be among the best indicators of the sector in comparison to the benchmarking by the International Council on Mining and Metals (ICMM).

More safety and engagement

Last year, MRN kept the focus on the control actions implemented in 2021 and expanded the employee engagement initiatives, including:

- Campaign to emphasize the Near Miss Report: **“Your account can save lives”**, with the release of six educational videos on the Safety Road Show Platform.
- Monthly and annual recognition of the highlights in Management by the Example of Leadership and of the Employees in Operating Areas.
- Safe Traffic Campaign: highlight for the **“Green April”** action, with the involvement of Colégio Equipe students, contractors, Military Police, and the community.
- Increase in the number of educational traffic blitz, use of breathalyzers, and expansion of off-road training.
- Carrying out four General Safety Shutdowns focusing on prevention and care actions that are the responsibility of each employee and their teams.
- Two integrated actions between MRN and contractors, with themes related to safety opportunities in the work environment, equipment and facilities.
- Internal Accident Prevention in Mining Week (SIPATMIN), which reached approximately 6,000 participants and addressed the theme: **“Safety is energy that moves and strengthens us!”**



Emergency Response Plan

- MRN maps out its activities seeking to identify the scenarios of highest risk. Based on this scenario, preventive actions and simulation drills are performed.
- In 2022, 13 simulation drills were performed involving several areas, their employees, and the MRN emergency brigade team.

The brigade team also performed the following:

Services / Support in capturing animals	175
Clinical support / care / transportation	834
Support in events using equipment	11
Support to events involving fire outbreak	33
Support to various environmental events	11
Emergency tree removal	20
Firefighter training	205
Firefighter Requalification	59
Firefighter training as Ship's Master	30
Emergency vehicle driving requalification	30

Innovation

In 2021, MRN started using drones for the monitoring and surveillance of activities in hard-to-access places. In 2022, drones were also used in support of traffic control on roads and intersections inside the mines. These initiatives increasingly seek to support and guarantee the safety of employees.



Occupational Health

As a result of the Covid-19 pandemic, MRN created, in 2021, a Mental Health program, which provides psychology, psychiatry and social assistance professionals to its employees. In 2022, the company continued with these services and improved the structure of this area in order to offer its employees continuous follow-up. Learn more about our Occupational Health initiatives:



MRN believes that healthy professionals contribute to the growth of the company.

Initiatives in compliance with the legislation

Occupational Health Medical Control Program

This is a legal requirement established in NR (Regulatory Norm) 7, which aims at preventing physical harm to employees as a result of work-related activities. MRN's entire occupational health structure is developed inside the Porto Trombetas Hospital (HPTR), which has a wing dedicated to workers' health and features an audiometric booth and an outpatient clinic. In 2022, 5,093 Occupational Health Certificates (ASOS) were issued to in-house and contracted employees.

Hearing Conservation Program

MRN provides personal audiometry follow-up for each employee. In case of any eventual change, the Health area verifies the existence of a causal link with the work activity or whether it follows a world trend, which is 1/3 of hearing loss in the population.



Voluntary Initiatives

Ergonomics Program

Through the ergonomics program “Fit for Life - Fit for Work,” MRN conducts on-site evaluations in the areas by observing the physical and ergonomic conditions of each employee, so as to prevent repetitive strain injuries, back problems, among others.

In 2022, 42 areas of the company were evaluated and a 50% decrease in presenteeism with work restrictions related to orthopedic complaints was observed.

Health Monitoring Program

It observes the scale of risk of cardiovascular diseases in employees based on pre-employment and periodic exams. Those with a higher degree of predisposition are included in a group with quarterly follow-ups. In 2022, out of the 102 employees being monitored, 72% showed improvement in clinical and laboratory data.

Fatigue Control Program

Especially, the operations area and some outsourced companies conduct follow-up four times a year by running exams to identify apnea and bruxism, for example.

Referrals for physiotherapy and the acquisition of devices for the treatment of apnea are supported by MRN, as well as cases of bruxism, with support from the company’s dentistry sector

Alcohol and Drug Abuse Prevention Program

In partnership with the Human Resources area, two samples are tested on a daily basis, one from the company’s employees and the other from contractors, to evaluate the consumption of alcohol and drugs. The test is also performed in accidents and incidents and, when necessary, the employee is referred for treatment.

Occupational Health Indicators	2021	2022
Presenteeism*	700	655
Absenteeism Rate*	1.2	0.9
Rate of audiometric tests***	39.4	44.1
Polysomnography rate****	2.76	0.54

*Presenteeism - these are patients on work restriction, cumulative over the whole year.

**Absenteeism - consists of the annual average made by the formula: Number of Days Not Worked x 100 / Total Employees x Days Worked.

***Percentage of altered audiometry exams throughout the year.

****Percentage of polysomnography examinations with moderate or severe changes (Fatigue Program).

Community Relations

Dialog and hand-in-hand partnership



Respect. Dialog. Care. Learning. MRN's commitment to sustainable mining in the Amazon is connected to the recognition of traditional knowledge and appreciation of the roots of local communities. To invest in initiatives that promote the ownership by riverside dwellers and Quilombolas, that encourage education to transform generations and provide opportunities to train talents and improve the quality of life is a legacy for the company, for the communities and for the Amazon.

Respect and transparency

MRN operates in Quilombola territories protected by the Saracá-Taquera National Forest. It believes that listening to the voice of the communities is about respecting their ownership, and that acting with transparency strengthens the bonds of trust built over more than 40 years. The decisions that may generate impacts for the Quilombola and riverside communities are presented and discussed in advance, seeking to obtain contributions from these populations.

While being aware of the importance of building relationships based on trust, respect and good faith with the population in the region, and seeking to establish measures to reduce the adverse impacts and nuisances from its operations, MRN has incorporated the concept of Social License to Operate (SLO).

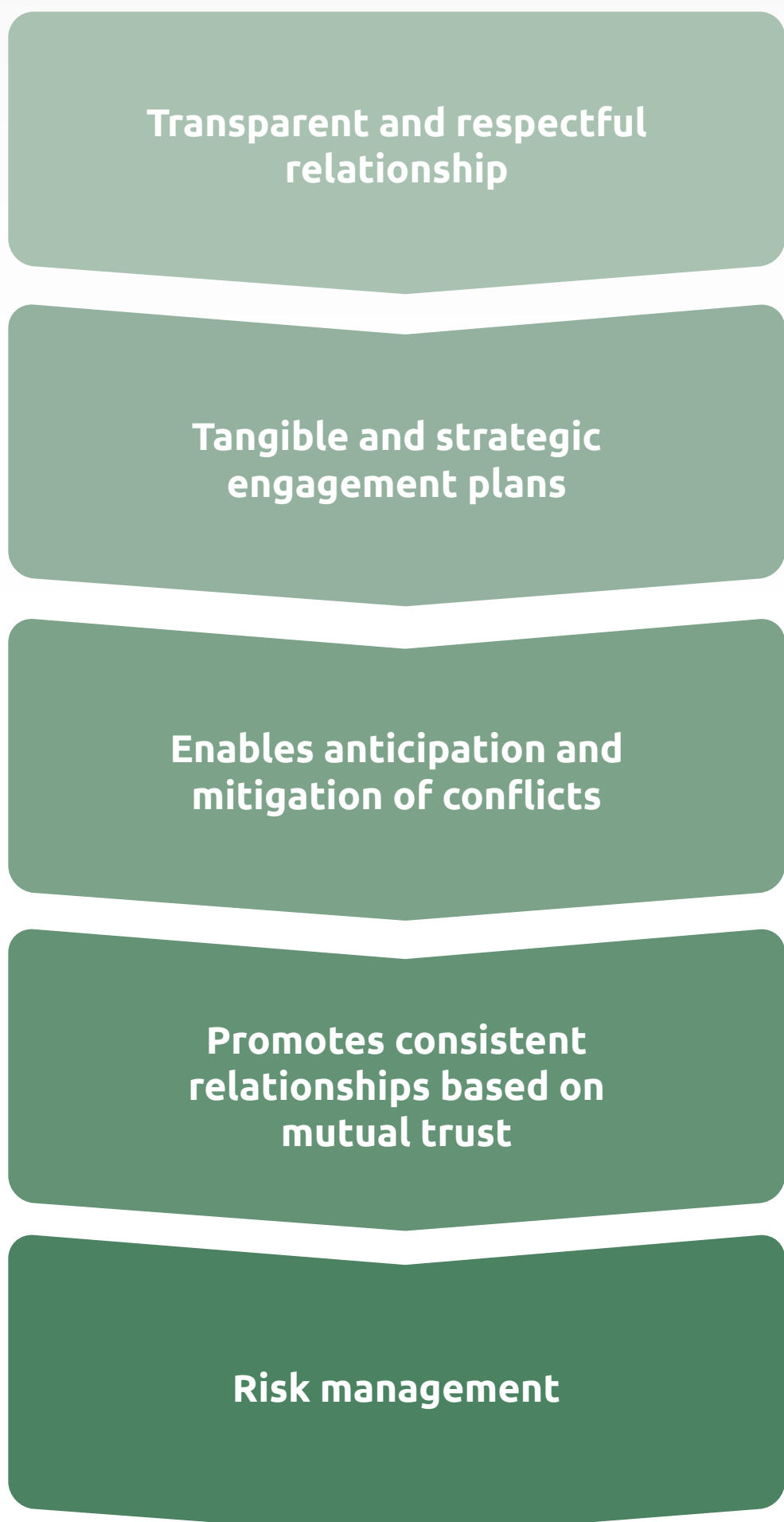
Created in the 1990's in the mining industry, the SLO reflects the advance in the understanding about the contributions and responsibilities that companies have with the population in the locations where they are installed.

It is a multiple license, which involves the engagement of several groups to mitigate the impacts and risks generated by the company's operations, to consolidate a relationship based on trust, respect, and the social legitimacy of the enterprise.

SLO presupposes the recognition by stakeholders that the company acts responsibly and generates value beyond its shareholders and employees.

MRN has also been seeking adherence to the United Nations (UN) Guiding Principles on Business and Human Rights and certifications from the Aluminium Stewardship Initiative (ASI), the International Finance Corporation (IFC) and the International Council on Mining and Metals (ICMM).

Strategies that support the SLO:





Human Rights

The protection of human rights throughout its chain of suppliers, employees and partners is a priority for MRN. To this end, the company holds training sessions and discussions to disseminate its Human Rights Policy. At the same time, it keeps its doors open so that everyone can get to know the details of its sustainable bauxite production flow, and ask questions and make contributions.

Every year, MRN promotes the Human Rights Due Diligence (HRDD), an independent technical audit that acts as a tool and methodology to verify the performance of the company in relation to human rights principles and standards. The HRDD is conducted by a specialized consultancy firm that performs interviews to capture the levels of acceptance and perception of the stakeholders about the the company's adherence to human rights standards.

This audit also contemplates the prevention and remediation of negative impacts generated on the rights of the individual. In 2022, actions were identified for 11 fronts, and an action plan was generated with opportunities for improvement in the conduct of processes and relationships to be implemented in 2023.

For MRN, it is essential to actively listen to the interests, perceptions and opinions of its stakeholders.

Commitment to local communities

MRN works for the preservation of the region's intangible heritage. To this end, it previously analyzes the risks of impacts in the licensing process of any bauxite mining area.

The actions and projects are included in the fields of Health and Safety, Education and Culture, Environment, and Income Generation, and their mission is to promote the rescue, preservation, and valuation of the environmental, cultural, and archeological heritage, in addition to institutional strengthening.

The company is also committed to strengthening community identity and organization by recognizing local history and techniques and practices that reflect the Quilombola and riverside culture, and by supporting cultural manifestations and traditional festivities.



Free, Preliminary, and Informed Consultation: the Quilombola Component Study (QCS)

It is the participative process of identification and evaluation of socio-environmental impacts on Quilombola lands related to the location, installation, operation, and expansion of a work, activity, or venture.

The QCS is the report that brings together the work of participatory construction of the environmental impact assessment of the project and its respective measures to avoid, reduce, mitigate, or compensate the impacts on this population and their territories. These measures are translated into programs and projects, which make up the Quilombola Basic Environmental Plan (QBEP), also built in a participative way.

The QCS is part of the Environmental Impact Assessment (EIA) as an element for evaluating the social and environmental viability of a project in the scope of the federal environmental licensing process, currently conducted by the National Institute of Colonization and Agrarian Reform (INCRA). It is through this process that the Free, Preliminary and Informed Consultation of the Quilombola communities affected by the company's operation is materialized.

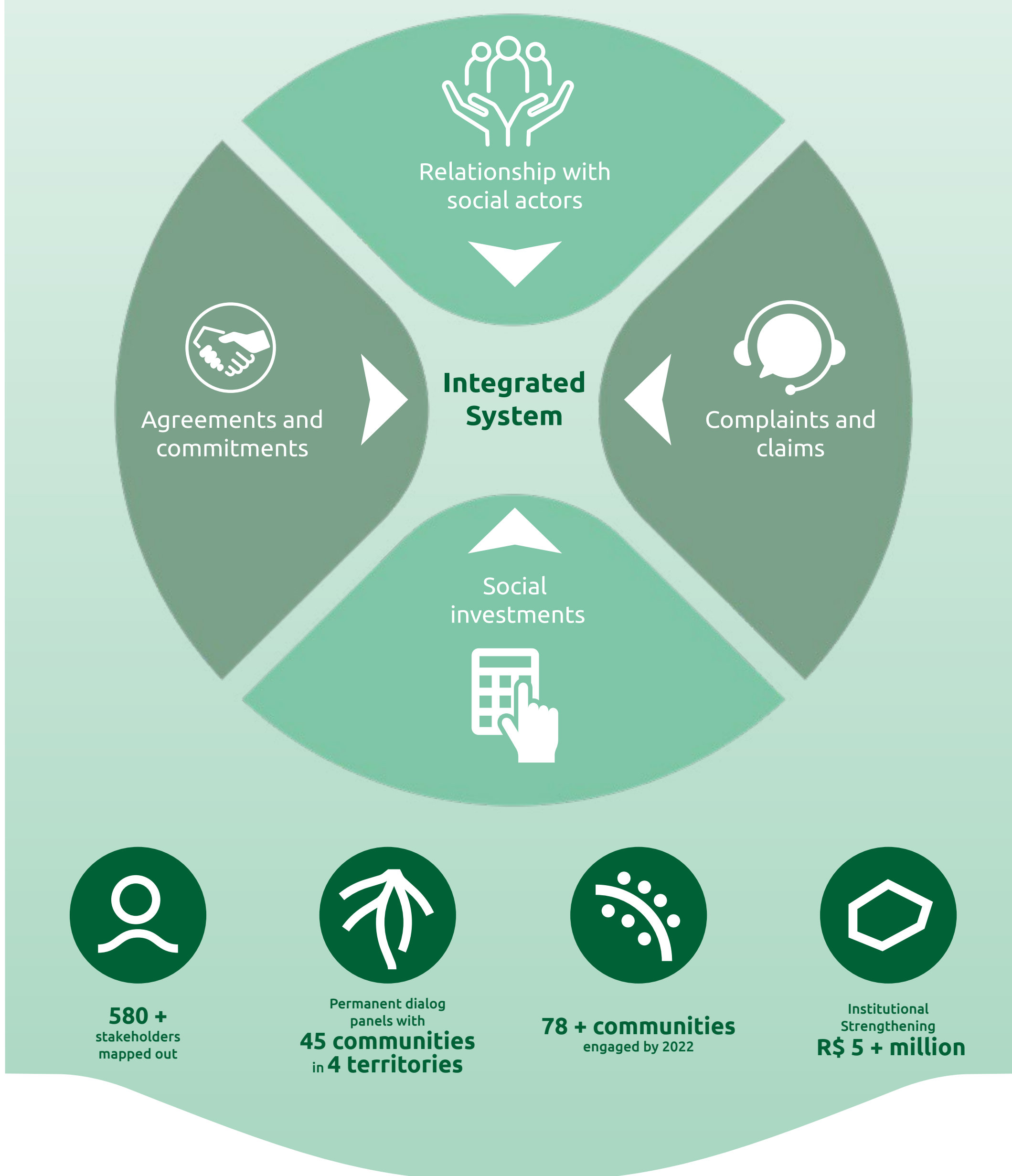
Currently, the processes related to obtaining the preliminary license for the New Mines Project (PNM) and the renewal of the operation license for the Monte Branco plateau are underway, both conducted by Ibama.

Permanent social engagement

All the work done by the Community Relations team, in partnership with other areas, is based on engagement and constant social interaction.

To manage this relationship, the company adopts the Integrated Social Management System, a method that connects the relationship with social players, the complaints and claims received, enables the covenant of agreements and commitments that result in the set of social investments made by the company on a yearly basis.

Integrated Social Management System



To this end, a stakeholder mapping software is used that acts as a guardian, storing information about the relationship history and the demands of the social actors in the company's relationship. This information supports the construction of engagement plans with the communities.

In 2022, permanent dialog tables were held with more than 45 communities, divided into four territories. In total, more than 70 communities were visited by MRN or visited the company's operations.



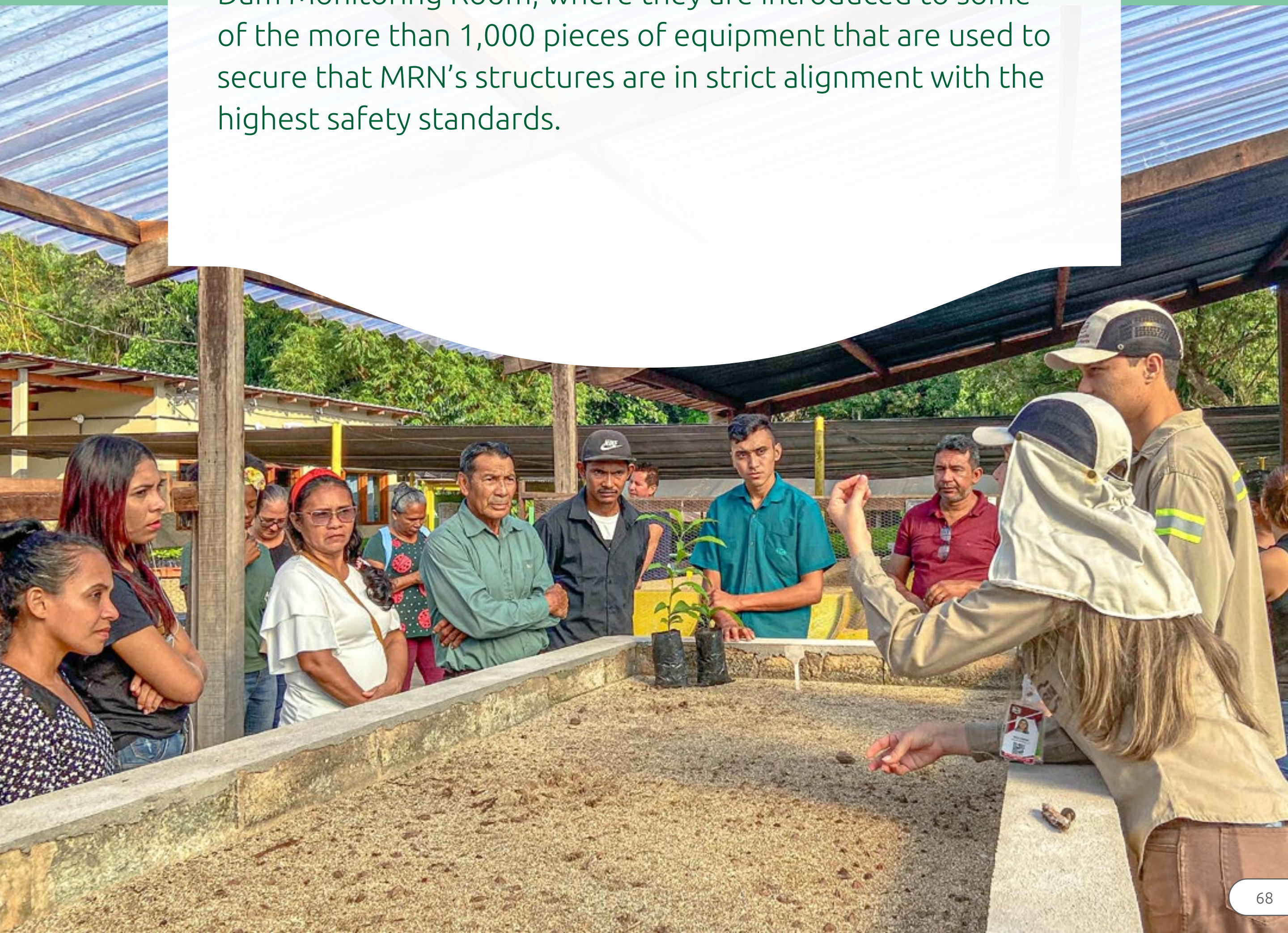
Open doors for sustainable flow

For more than 20 years, the company has developed the Visits Program, a moment in which community members and families of employees have the opportunity to get to know the sustainable bauxite operational flow up close.

Visitors attend the Nursery, where they have the opportunity to learn about the process of producing seedlings of the native forest species that are used in the process of reclaiming the area after the ore is removed. Then, they visit a bauxite mine in operation, where they are shown the process of extracting, crushing and washing the ore.

Also, as part of the program, the community members visit a tailings pond, where they better understand the characteristics of the bauxite tailings, which are composed of soil and water only, and experience walking on dried tailings.

The visit concludes with an explanation about safety in the Dam Monitoring Room, where they are introduced to some of the more than 1,000 pieces of equipment that are used to secure that MRN's structures are in strict alignment with the highest safety standards.



Dynamic and continuous communication

For MRN, the exchange of knowledge and information is paramount for the construction of this relationship with the communities. Therefore, the company uses accessible means of communication geared directly at the community to provide for greater transparency and approximation. In this package of contents, the community receives three important newsletters, which focus on socio-environmental actions that directly benefit the community:

- **Konduri tá no rio** | weekly card sent along with audio every Wednesday via WhatsApp to local community members.
- **Estação Konduri** | a biweekly radio program broadcast on Saturdays by Sucesso Radio, in Oriximiná.
- **Konduri Newspaper** | a bimonthly bulletin delivered to the leaders of more than 50 communities so that they can make it available to the residents of their territories.





Falai Comunidade!

Intended for expanding communication, active listening, and engagement with the communities where it operates, MRN launched a new relationship channel in 2022: Falai Comunidade.

The platform provides an opportunity for community members to submit, in a faster, more accessible way, criticisms, suggestions, complaints, and compliments on issues related to the company's operations and its daily relationship with the neighboring communities.

The tool is aligned with the best international practices, such as the ASI Performance Standard, and reinforces the company's commitment to sustainability and ESG practices.

Community Relations Channel



How demands are met?

- When registering the demand at Falai Comunidade, the person does not need to identify himself/herself. If it is a simple question, the channel's team answers it and the procedure is closed.
- In more complex issues, the demand is referred to a team of specialists.
- The registration is processed within 48h, with a confirmation message and response within five working days.
- If the person does not identify himself/herself, the answer is forwarded to the community leaders.



Inside the initiatives.

Now that you are familiar with the processes of dialog and engagement with the communities and know that everything is done with great transparency, respect, and responsibility, MRN presents its social responsibility actions, encouraged projects, and socio-environmental initiatives.

Corporate Social Responsibility

Education as legacy

Education is one of the greatest legacies one can leave to future generations. It is through education that knowledge is produced, autonomy is promoted and people are encouraged to broaden their horizons. Therefore, MRN invests in educational initiatives that provide Quilombola and riverside communities with access to Basic Education, Higher Education and Professional Qualification.



Created in 1997, the Basic Education Support Program (PAEB) has already benefited 490 students. The Program provides full funding for Quilombola children and teenagers to study at Colégio Equipe, an institution located in Porto Trombetas.

In addition to the costs with school fees, MRN provides students with school supplies (stationery) and books and workbooks, transportation, and meals, and tutoring, thus providing an all-round education for students.

Initially, the first beneficiaries were the students living in the Boa Vista community (elementary school and high school). Since 2020, high school students living in the Quilombola territory of Alto Trombetas II have also been assisted. This was made possible by the Teófilo and Cipó Agreement, a Term of Commitment established between the Association of Remaining Quilombo Communities of Alto Trombetas II, the Palmares Cultural Foundation and MRN, within the scope of the licensing process for the mines of the same name.

In 2022, the company invested R\$2.5 million in the Program, directly benefiting 125 children and young Quilombola and riverside children.

“

I strive to do all the tasks. I make the most out of this to be able to complete high school and go to medical school, because I dream of helping people in my community.

*Clemerson de Oliveira, 15
a PAEB beneficiary student*

”





Created in 2000, it works as an extension of the support to Basic Education. The initiative supports young people from the Quilombola communities Alto Trombetas II and Boa Vista territories who are entering undergraduate or distance learning courses.

The Program annually provides 60 scholarships and monthly financial aid payments to support the students in their academic background. The students get an annual ticket to return to their hometowns in their school vacations, since they attend classes away from their homes. For the communities of Alto Trombetas II, the scholarships are part of the Teófilo and Cipó Agreement.

“

Education is a transforming agent. Through education you can reach heights that, without it, would not be possible.

*Jeferson dos Santos, 36
a Quilombola graduated in Chemistry
from the Federal University of Amazonas (UFAM)
with the help of PAES*

”

In 2022, the exciting stories of transformation through education could be known by the public through the campaign **“How to keep growing together with education?”** Each one telling their story, talking about the challenges and translating in smiles and tears the overcoming and conquering of dreams. To learn more, just access the QR Code on the side.

Watch our webseries:



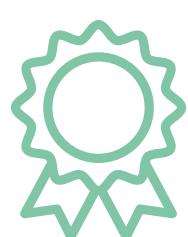
The result of a partnership between MRN and the Center for Interstate Social Studies (CESI), the initiative's objective is to support the completion of basic-level studies and provide professional qualification to local communities, involving Quilombolas, riverside dwellers, and indigenous peoples.

For each community, specific strategies were devised, considering the local reality, based on surveys carried out with community leaders.

The project operates on three axes, namely:



Increase education level - aimed at students or workers who have not completed elementary school or high school. They take a preparatory course for the National Examination for the Certification of Skills of Young People and Adults (Encceja).



Professional Training and Qualification - capacity-building of locals to opportunities in MRN or in local companies.



Free Courses - Qualifies professionals who want to have their own business.



I was unemployed when the project brought the Civil Firefighter course to our community. When I tried to take the same course in another institution some time ago, they told me that I wouldn't pass the tests because I was short. This time, I said I would try, for I would learn something. And that's when everything worked out fine.

*Josiane Monteiro,
civil firefighter from the Boa Vista Quilombola community*



Development and opportunity come where you need them.

12 communities involved



214 participating students

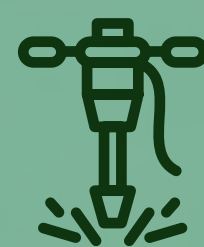
Courses



Firefighter



Vulcanizer



Mining equipment



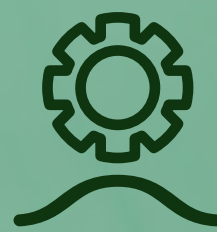
Increase education (elementary and high school)



Tailoring and dressmaking



Bakery



Cooperative management technologist

Free of charge



Course books



Transportation



Personal Protection Equipment (PPE)

R\$ 1.5 million invested in 2022



Care matters: support in medical and hospital care

In 2022, the Porto Trombetas Hospital (HPTR) provided more than 8,000 medical services to riverside dwellers and Quilombolas. Moreover, R\$1.9M was invested in logistical support to enable the access of community members and in transfers to other centers.

The company also offers dental care to three Quilombola territories, covering 16 communities and approximately 1,000 families.





Environmental preservation allied with income generation

In partnership with the Associação das Comunidades das Glebas Trombetas e Sapucaá (ACOMTAGS) (Communities Association), MRN has been developing a program geared at income generation associated with environmental preservation and promotion of local knowledge involving dozens of families from the Espírito Santo, São Francisco, São Sebastião and São Tomé communities, located in the region of the Maria Pixi Lake.

Intended for promoting sustainable development in line with local knowledge, stimulating the generation of income, reforestation, and food security, the actions were planned as based on a socio-economic and productive diagnosis carried out in 2022 by means of interviews and data gathering.

As a result, three work axes were stipulated:

- Agroforestry Systems;
- Integration of Animal Husbandry, Grubbing, and Forest Planting;
- and Community-Based Sustainable Tourism.



The projects have a closed-cycle sustainability vision. To this end, innovative techniques are proposed that are constructed together with the community members, taking into consideration the needs of the communities, their limitations (linked to infrastructure), and traditional knowledge.



These projects can rescue what we had forgotten, namely our handicraft and farming productions. We, as a community, always fight for the best for our families - that they have income generation, but with a production that is valued.



*Helena Sales Leal
resident of the Espírito Santo
community, in Oriximiná.*

In addition to valuing sustainable growth and development of the region where it operates, MRN is also committed to social responsibility initiatives. In 2022, the company invested **R\$12 million** in programs, projects and socio-environmental actions and in agreements signed directly with Quilombola communities.

Promoted Projects

Maré do Amanhã Orchestra

The Maré do Amanhã Orchestra Project was created in Rio de Janeiro in 2010 and introduced in Porto Trombetas in 2019. Since then, it has promoted talents and cultivated dreams by providing free viola and violin lessons for children and teenagers of Porto Trombetas and Quilombola communities Moura and Boa Vista.



Children and Adolescents Fund

Protected childhood and adolescence guarantee healthy future generations. Every year, the company contributes with financial resources to the Municipal Funds for the Rights of Children and Adolescents in the municipalities of Oriximiná, Terra Santa, Faro and Óbidos. The amounts are transferred to the municipalities through the Fund for Childhood and Adolescence (FIA) and are managed by the Municipal and State Councils for the Rights of Children and Adolescents, which decide on the allocation thereof according to the service policy, programs and actions to be implemented for the protection of children and adolescents in situations of social risk and vulnerability.

Authorized by Federal Law No. 8069/1990, the FIA is an important tool created to raise and apply financial resources aimed specifically at the area of childhood and adolescence.



R\$1.6
million
invested in
ongoing projects



Rouanet
Law Projects
Vaga Lume and
Orquestra Maré
do Amanhã



Children and
Adolescents Fund
Projects:
Children and
Adolescents City
Councils of Faro, Terra
Santa, Oriximiná and
Óbidos.



Sports Incentive
Law Project:
Sports in
the City

Sports in the City

Held in the municipality of Terra Santa, western Pará, the initiative is conducted by the Organização Social de Peito Aberto (DPA) via Federal Law of Incentive to Sports, sponsored by Mineração Rio do Norte and White Martins, and the support of the Municipality of Terra Santa. The goal is to encourage the practice of sports by public school students.





Vaga Lume Project

Empower children in rural communities of the Amazon through reading and management of community libraries, bring knowledge and stimulate critical mind and creativity, these are the goals of the VagaLume Project. By understanding that this is another important tool to boost education by stimulating the pleasure and habit of reading, MRN entered into a partnership with the NGO VagaLume, via Rouanet Law of Cultural Incentive, to take the project to Quilombola and riverside communities in 2023.

VagaLume will serve the communities of Serrinha, Santa Inês - Flexal, Lago do Ajudante, Boa Vista, Moura and Jarauaca - Território Cuminã, in the municipality of Oriximiná, by promoting free-of-charge activities such as workshops for reading mediators, production of handmade books, distribution of new printed and digital books, infrastructure for community libraries, encouragement of community management, empowerment of volunteers and meeting of volunteering networks.

Socio-environmental Constraints

Socio-Environmental Education Program



From the environmental licensing processes related to MRN's operations in the region, the measures to reduce, mitigate and compensate the socio-environmental impacts were organized and grouped in what we call the Socio-environmental Education Program (PES). This process is conducted, followed up and inspected within the scope of the federal environmental licensing by the Brazilian Institute for the Environment and Renewable Natural Resources (Ibama).

The program consists of 11 initiatives developed in the municipalities of Oriximiná and Terra Santa (Pará State) which promote income generation, health, safety, education, culture, and environmental preservation.



These activities have the active participation of the communities involved. Throughout 2022, the PES performed 932 activities, benefiting more than 21 thousand people. Check out, below, the details of these actions.

Environmental and Heritage Education Project (PEAP)

The PEAP's mission is to promote the rescue, conservation, and valuation of the environmental, cultural, and archeological heritage together with the communities. To this end, it promotes the strengthening of identity and community organization, by recognizing local history and techniques and practices that are part of the Quilombola culture, as well as providing an alternative for income generation.



2

Environmental Education Project (PEA)

It promotes integrated educational actions to raise awareness about the rational use of the environment. In 2022, the PEA worked with participative workshops given to adults, young people, and children addressing such themes as “Care of wild animals”, “Fauna conservation, garbage and its impacts”, “Types of garbage and chelonian conservation.”



It provides basic medical care, nursing consultations, access to medication, and promotes educational lectures with health-related themes for the community members of the Alto Trombetas region.

The communities are visited monthly by a health team composed of a doctor, nurses, and nursing technicians.

Besides the consultations through the project, people are referred to laboratory tests and emergency care.



4

Project to Support Meliponiculture

It promotes the training of 20 families of producers from the rural communities of Jaguaruna, Alema, and Urubutinga, located in the municipality of Terra Santa (Pará State), for the management of native bee species with economic potential.

Meliponiculture is a sustainable activity that provides income generation for the city's producers, besides contributing to the protection of biodiversity through the increase of ecosystem services provided by stingless bees, such as pollination.



5

Agroforestry Systems Project (SAFs)

It assists families living in the rural area of the municipality of Oriximiná (Pará State) to promote income generation and environmental conservation by encouraging the adoption of the SAFs methodology. The project includes 29 families from the riverside communities Boa Nova, Casinha, and Saracá, on Sapucuá Lake; Camixá, on the middle Trombetas River; and Bom Jesus, on Batata Lake.

The initiative offers technical training to farmers by using collective and individual methodologies such as courses, workshops, and technical visits on agricultural and socio-environmental topics that increase the productivity of the systems and the quality of the environment and the life of the families assisted.

The project has been developing the participants in seeking business autonomy, with environment-friendly practices, with a strategic vision of the business, and with the strengthening of the rural property and the brand. The producers are encouraged to participate in fairs, events, and in the productive organization through the creation of cooperative associations.



“

It was from the project that I learned how to plant and even how to care for the plants using fertilizers. Also, our production has lasted longer because we learned how to properly store the seeds and products.

*Maria Luiza Amaral
farmer at the Boa Nova community*

”



6

Family Farming Support Project

Serves farmers in the Ascensão community, rural area of Oriximiná, Pará State. The goal is to encourage agricultural practices aimed at community development, especially in the production chain of cassava, which traditionally developed in the area. The project also improves the management techniques adopted in the crops and stimulates the diversification of rural property, thus promoting a positive impact on income generation for the 18 participating families.

As a general guideline of the projects, the action seeks to develop the productive autonomy of the families and the development of their business.



7

Project for the Construction of Water Microsystems and Artesian Wells

Aimed at building structures to supply drinking water to the communities Saracá and Boa Nova, on the Sapucuá lake, and on Batata lake and in the Alto Trombetas II region.

In 2021, micro-systems powered by solar panels were built and structured, an innovation that conferred greater sustainability, lower greenhouse gas emissions, perennial water supply, and zero fossil fuel costs.

In 2022, MRN continued to carry out works in the microsystems. Water tank support towers were built to replace the wooden towers, and the diesel engine was replaced by solar photovoltaic energy (solar panels).



This project provides training for the residents of the communities Tarumã, Bacabal, Jacuraru and Acapuzinho, in the middle Trombetas River, in raising tambaqui fish using techniques developed locally. The methodologies used in the breeding of the fish are based on studies developed by the Environmental Physiology Research Group (GPFA) of the Western Pará Federal University (UFOPA).

The project develops initiatives that provide higher yields in fish production, considering working time, the resources being used, and the time it takes for the fish to mature. Throughout the project, the families receive training, technical visits, and support with materials and feed.

They are also encouraged to participate in fairs and events.

Through this initiative, MRN aims to develop knowledge and exchange know-how. To this end, it provides the necessary training to work autonomously, with activities ranging from learning how to build tanks to biometrics, handling and enriching the feed with local fruit trees, among others.

In 2022, the technical team improved the architectural design of the tanks and developed equipment to pressurize the PET bottles to be used as the support base for tank flotation. The initiative allowed for reducing the cost of implementation and maintenance of the structures, in addition to contributing to the environment. The benefits of this sustainable innovation also include the increase in the tank's service life and better stability.



The Project is carried out with the Quilombola communities of Alto Trombetas II, mainly Curuçá and Jamari. In 2023, 42 families were involved in the direct process of inventory, monitoring and training in the course of the actions planned in 2022.

It also promotes the management of the existing copaiba trees on the Monte Branco plateau, one of the bauxite extraction sites, through the following activities:

- Inventory and mapping out of copaiba trees;
- Technical assistance to the nurseries for replanting and production of seedlings for reforestation of the area;
- Extraction of copaiba oil;
- Monitoring the development of copaiba trees and production volume of copaiba oil;
- Training and capacity building for the community members involved in the project.

One of the axes of the project is income generation, either by selling the oil-resin to the cosmetics and pharmaceutical industries, or by paying per diems to the community members involved.

In 2022, four 25-day campaigns were conducted, totaling 100 days of work

The forest inventory includes only *Copaifera langsdorffii*, which has 28 cataloged species. Out of these, 16 are endemic to Brazil, mainly in the Amazon and Cerrado biomes, where they are found on upland and flooded land, on the banks of lakes and streams.

The species that occur in Brazil are considered to produce oil-resin, which is widely used in the cosmetics and pharmaceuticals industries and as an additive in the manufacture of varnish and paint. In popular medicine, it is used in the treatment of several diseases, being a powerful anti-inflammatory.



Malaria Control Project

As a Malaria endemic area, identified by the Ministry of Health, MRN implements the project with the objective of improving the quality of life in the villages and communities along the Trombetas river by preventing malaria and other diseases.

The Malaria Control Project operates in 23 communities near Porto Trombetas, performing pest control (spraying and thermo-spraying), in order to combat and repel insect vectors of diseases, especially the mosquitoes that transmit malaria, dengue, yellow fever, and leishmaniasis. The project also works with an educational approach, explaining to families the best way to take care of the environments that are favorable to the proliferation of insect vectors.



Pé-de-Pincha Project

Every year, hundreds of thousands of chelonian hatchlings are caught in the rivers of the Amazon. The work is the result of the Pé-de-Pincha Project, developed for 24 years by the Federal University of Amazonas (UFAM) in a partnership with MRN, local municipalities and community volunteers. The initiative is broad, covering 118 communities in 18 municipalities between Pará and Amazonas. In the state of Pará, 31 communities of the municipalities of Oriximiná and Terra Santa are participating.

In these municipalities, the Project has made it possible to introduce more than 6 million chelonian hatchlings into the wild, such as Amazon turtles, irapuca, tracajá, and pitiús, encouraging the conservation of species by means of participatory management.



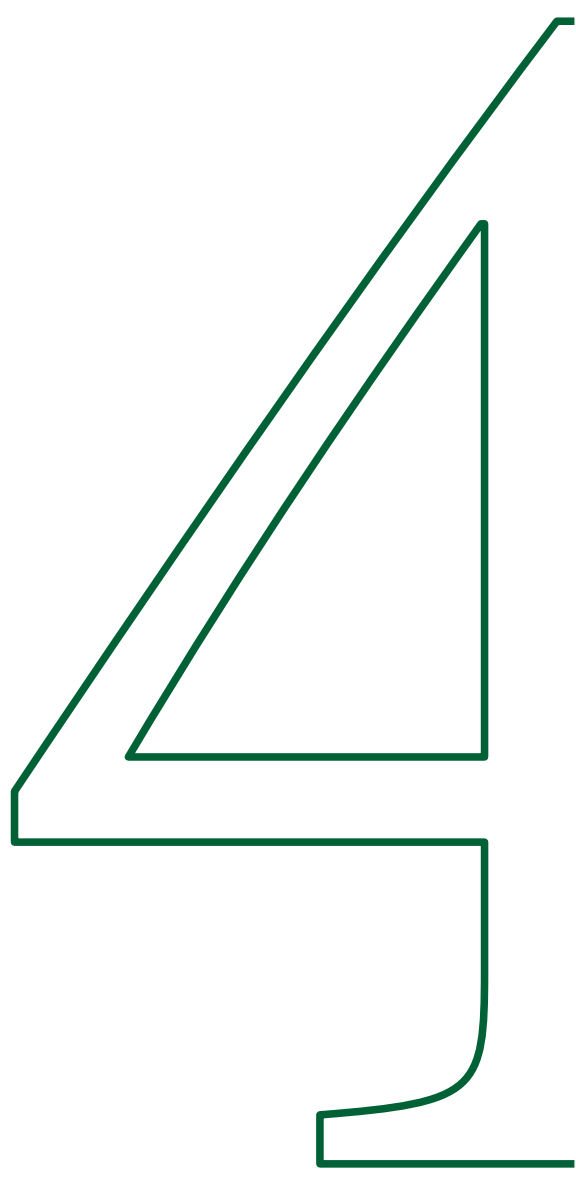


Trombetas River Turtles Program

Another initiative that adds to the preservation of chelonians in the Amazon is the Trombetas River Turtle Program (PQT), conducted by the Trombetas Integrated Management Center of the Chico Mendes Institute for Biodiversity Conservation (ICMBio), in a partnership with MRN, the Ecological Research Institute (Ipê), and communities.

For more than 40 years, the program has been carrying out chelonian conservation activities in the Trombetas River Biological Reserve, involving 33 volunteering families, who receive support such as food baskets, fuel and lubricating oil, as well as materials for nest management. The PQT has already returned to nature about 5 million hatchlings, including tracajás, pitiús and Amazon turtles.





Governance

Wealth beyond aluminum

Operations and Innovation

Evolution experienced together

Compliance

Growing with ethics and integrity



Governance

Wealth beyond aluminum

MRN defines its short-, medium- and long-term goals by thinking beyond a market performance and based on values such as safety, respect, integrity, sustainability and continuous improvement. The Company's leadership is committed to establishing and disseminating the purpose of producing bauxite that increasingly contributes to a sustainable world, based on transparency, ethics, dialog, appreciation of people and care for the environment



Responsible, sustainable business

MRN's guidelines are governed by the Integrated Management System (IMS) of its operations, which is based on three sustainability pillars, namely:



Governance



Environment



Social



1- Governance

In order to converge interests for the company, the government and the society, MRN works in partnership with institutions that represent the mining sector, such as the Brazilian Mining Institute (IBRAM) and the Brazilian Aluminum Association (ABAL).

The company's corporate responsibility remains connected to its values and in strict dialog, respect, and trust in the relationship with direct and indirect employees, family members, communities, governmental and non-governmental agencies, suppliers, and investors.



2- Environment

MRN's operations are conducted in a protected area, in the middle of the Saracá-Taquera National Forest, in the Amazon biome, which shows its fundamental role in environmental conservation, considering natural resources and people.

The company's actions are supported by environmental licensing processes and the procedures adopted by the teams are guided by legislation, authorizations, licenses, local statutes, and voluntary commitments.

The proactive measures the Company adopts include the planning for vegetation suppression, the management of industrial/urban waste and the reforestation of mined-out areas. The company is also committed to a 23% reduction in greenhouse gas (GHG) emissions by 2030.



3- Social

MRN conducts the Human Rights Due Diligence (HRDD), an independent, periodic technical audit that acts as a tool and methodology to verify the performance of the company in relation to human rights principles and standards and is responsible to abide by them.

It also contemplates the prevention and remediation of negative impacts generated on the rights of the individual. The HRDD measures the actual and potential impact of the Company's activities, and the results are issued in reports.



The safety of operations and people comes first at MRN.

The processes are certified, thus securing operational excellence, safety of the structures. In 2022, the company maintained the certification of the Integrated Management System pursuant to the ISO 45001 (Occupational Health and Safety Management) and ISO 14001 (Environmental Management) standards.



ASI (Aluminium Stewardship Initiative) Performance Standard

Last year, MRN maintained its certification in the **ASI (Aluminium Stewardship Initiative) Performance Standard**, the only comprehensive voluntary global sustainability initiative for the aluminum value chain, which includes bauxite.

The ASI standard is also supported by **ESG** (Environmental, Social and Governance) **principles** and sets out 11 requirements:

ASI Criteria

GOVERNANCE

- 1 COMMERCIAL INTEGRITY
- 2 POLICY AND MANAGEMENT
- 3 TRANSPARENCY
- 4 MATERIALS MANAGEMENT

ENVIRONMENT

- 5 GREENHOUSE GAS EMISSIONS
- 6 EMISSIONS, EFFLUENTS AND WASTE
- 7 WATER RESOURCES MANAGEMENT
- 8 BIODIVERSITY AND ECOSYSTEM SERVICES

SOCIAL

- 9 HUMAN RIGHTS
- 10 LABOR RIGHTS
- 11 OCCUPATIONAL HEALTH / SAFETY

In 2023, MRN won an unprecedented recognition: the ASI seal in the Chain of Custody (CoC) Standard. The independent auditing process was carried out by the international certification agency Bureau Veritas Certification (BVC). The Custody Standard is applied according to 5 criteria, focusing on the traceability of the processes, from bauxite extraction to shipment.

With the ASI CoC certification, the company attests its commitment to responsible bauxite mining practices and, therefore, it started to issue to its clients a document called Bauxite Certificate. MRN will also start to report annually, through the Performance and Risk Management, a survey of the tonnages of bauxite produced in the Amazon.

The company also seeks compliance with the principles of the International Finance Corporation (IFC) and the Global Industry Standard for Waste Management (GISTM) through actions that have been underway since the year 2021 and aim at accreditation between the years 2024/2025.

Certifications:



2021 – 2022

ASI Performance defines ESG (environmental, social and governance) principles and criteria, which address sustainability issues in the aluminum chain, integrated into the IMS.

2021 – em curso

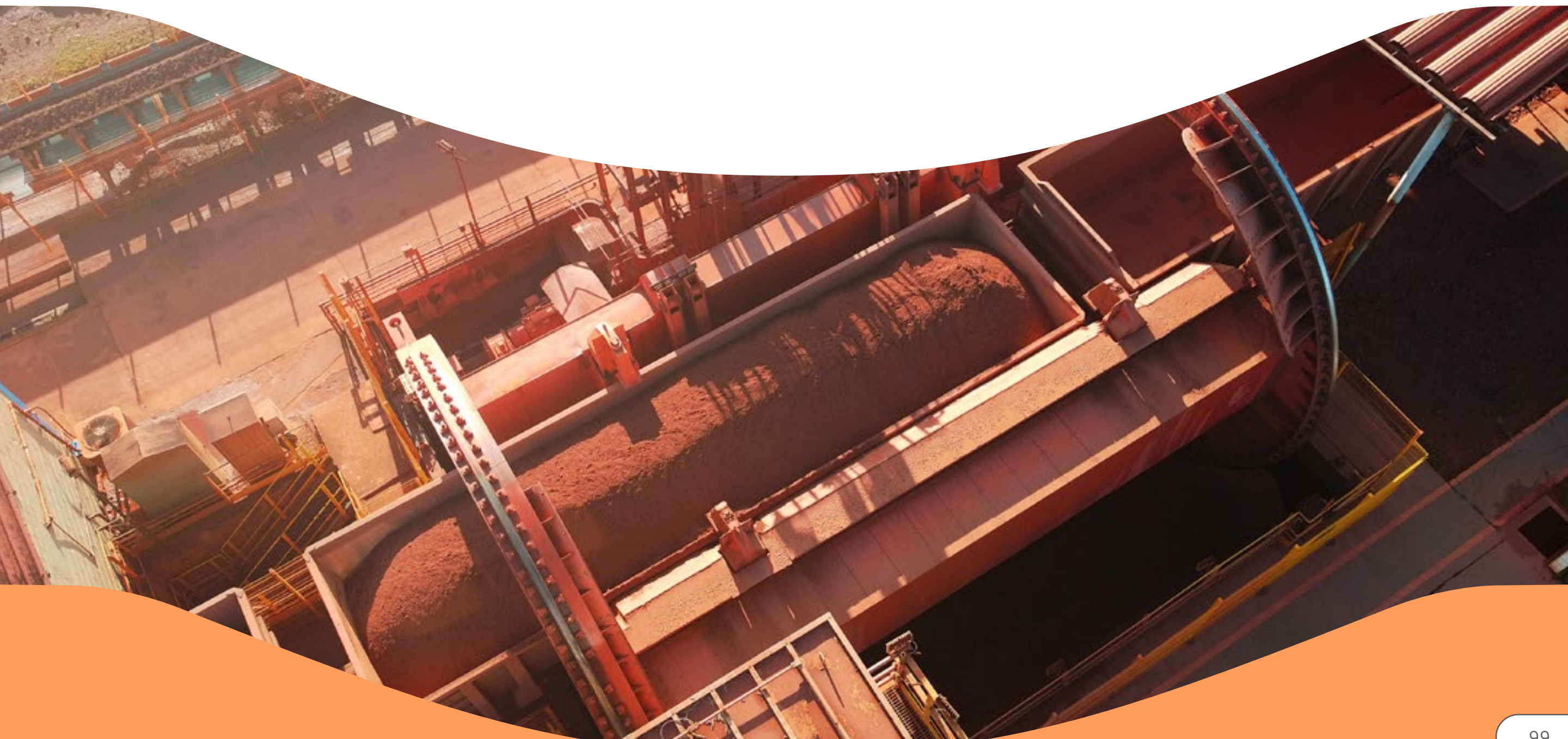
GISTM defines criteria for dam management and operations to mitigate socio-environmental risks and impacts.

2022 – 2022

ASI Chain of Custody creates a sustainable link between MRN and its certified customers in the aluminum chain.

2022 – ongoing

The IFC is a World Bank association that promotes the application of performance standards for social and environmental sustainability.





Strategic Planning

MRN has updated its strategic planning for the next 5 years, and has chosen the following challenges and global goals to achieve the Vision, Mission and Values of the company:

CHALLENGES	TARGETS
1. Social license	1. Management efficiency
2. Tailings restriction	2. People engagement
3. Economic feasibility	3. Operational excellence
4. Mineral inventory	4. Value generation
	5. Implementation (Development and Execution)

Integrated Management Policy

The guidelines of MRN's Integrated Management Policy are developed by the leadership, which follows its implementation in all levels of the organization by engaging teams to understand it and comply with corporate sustainability standards.

MRN has an Integrated Management Policy, prioritizing aspects such as:

- Compliance with legal, institutional and contractual requirements for stakeholders;
- Permanent dialog with customers, suppliers, communities and others, with a commitment to their consultation and participation;
- Provision of adequate resources for business risk management, meeting quality, safety, occupational health and social and environmental requirements;
- Prevention of work-related accidents and illnesses, with assessment and monitoring of any risks;
- Protection of the environment through its operational activities and commitment to the continuous improvement of environmental performance through sustainable activities;
- Social and human rights commitments related to freedom of association, gender and ethnic-racial equality and diversity. It also includes preventing and combating forced, bonded or compulsory labor, child labor, discrimination relating to employment and its activities, sexual exploitation, especially those involving children and adolescents;
- Compliance with the Code of Conduct, thus preserving the company's integrity with regard to conflicts of interest, corrupt practices, extortion and bribery and respect for good practices in interaction with work, the environment and society;
- Involvement of employees in decision-making processes relating to the company's management system, with a focus on risks and business excellence;
- Continuous performance improvement to increase operational performance, value generation, greater competitiveness and human development through the use of new technologies and innovation opportunities;
- Setting responsibilities, objectives and targets to guide ongoing process evaluations, dissemination of results achieved and everyone's contribution to the achievement of objectives.

To access the document in full

[click here](#)

Business Risk Management

In 2022, meetings involving all the areas of the company were held to re-evaluate the risk register, thus allowing for increased visibility of new risks in all operational and support processes, in addition to analyzing existing risks.

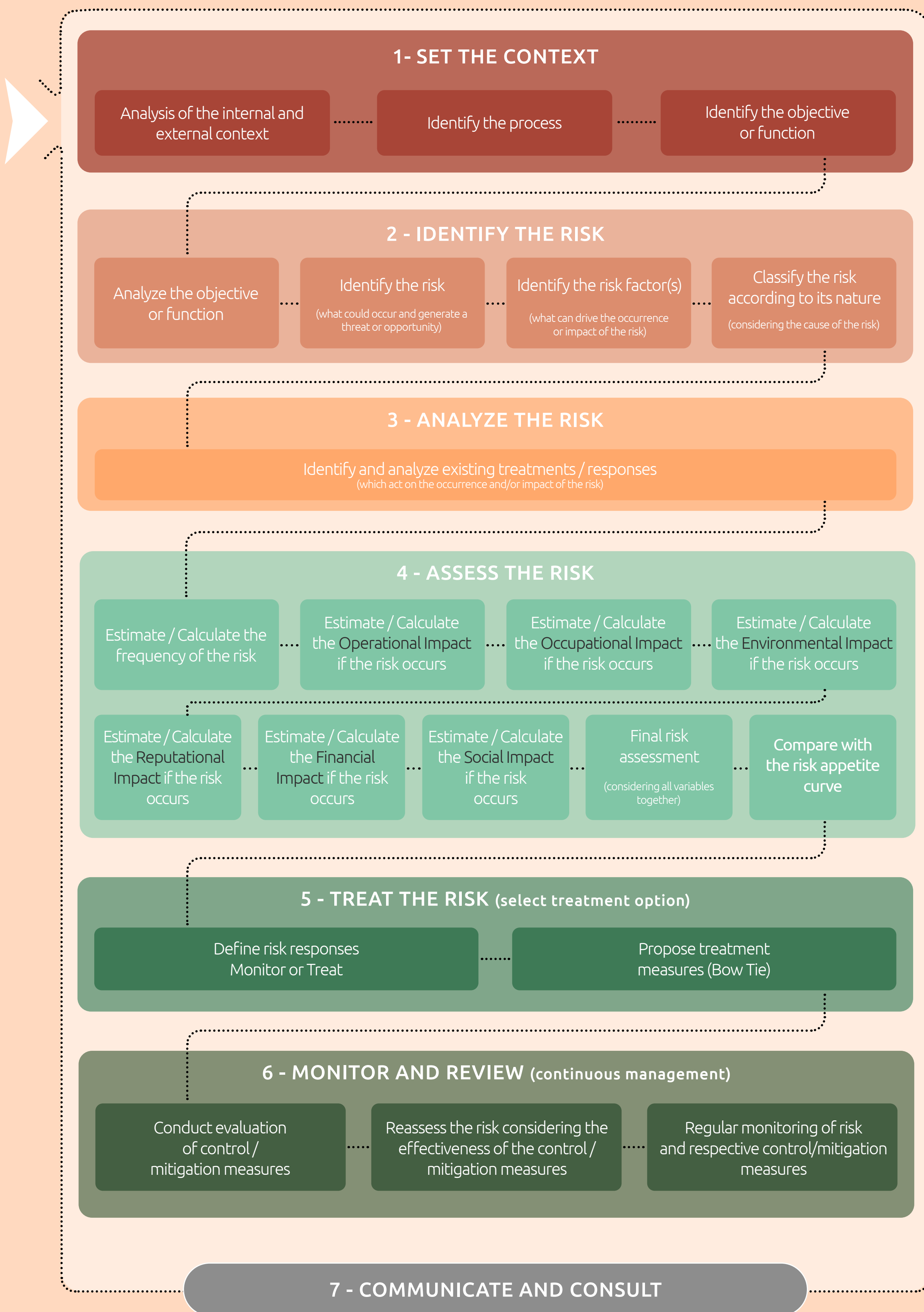
For the evaluation of the Risk Matrix, internal auditors were appointed, who were trained in audit management based on the ISO 31000 standard, and were able to verify the efficiency of the CSA's (Control Self-Assessment) and analyze the controls of the "Risks to be Addressed."

Main actions performed

	Benchmarking em empresas do ramo
	Implementation of identified improvement opportunities: <ul style="list-style-type: none">• In the Risk Management diagnosis• In the Peer Review of Risks• In the shareholders' evaluation of the Risk Management Program• Design of the Control Environment
	Workshop on risk management in the areas
	Field visits / support for areas and committees
	Biweekly risk management meetings
	Annual internal audit of risks
	Training in risk management and the management system (software)
	Implementation of the change management project

Risk Management Process Framework

The Risk Management process is carried out according to the methodology and criteria defined by MRN based on the seven stages broken down in the flowchart below:

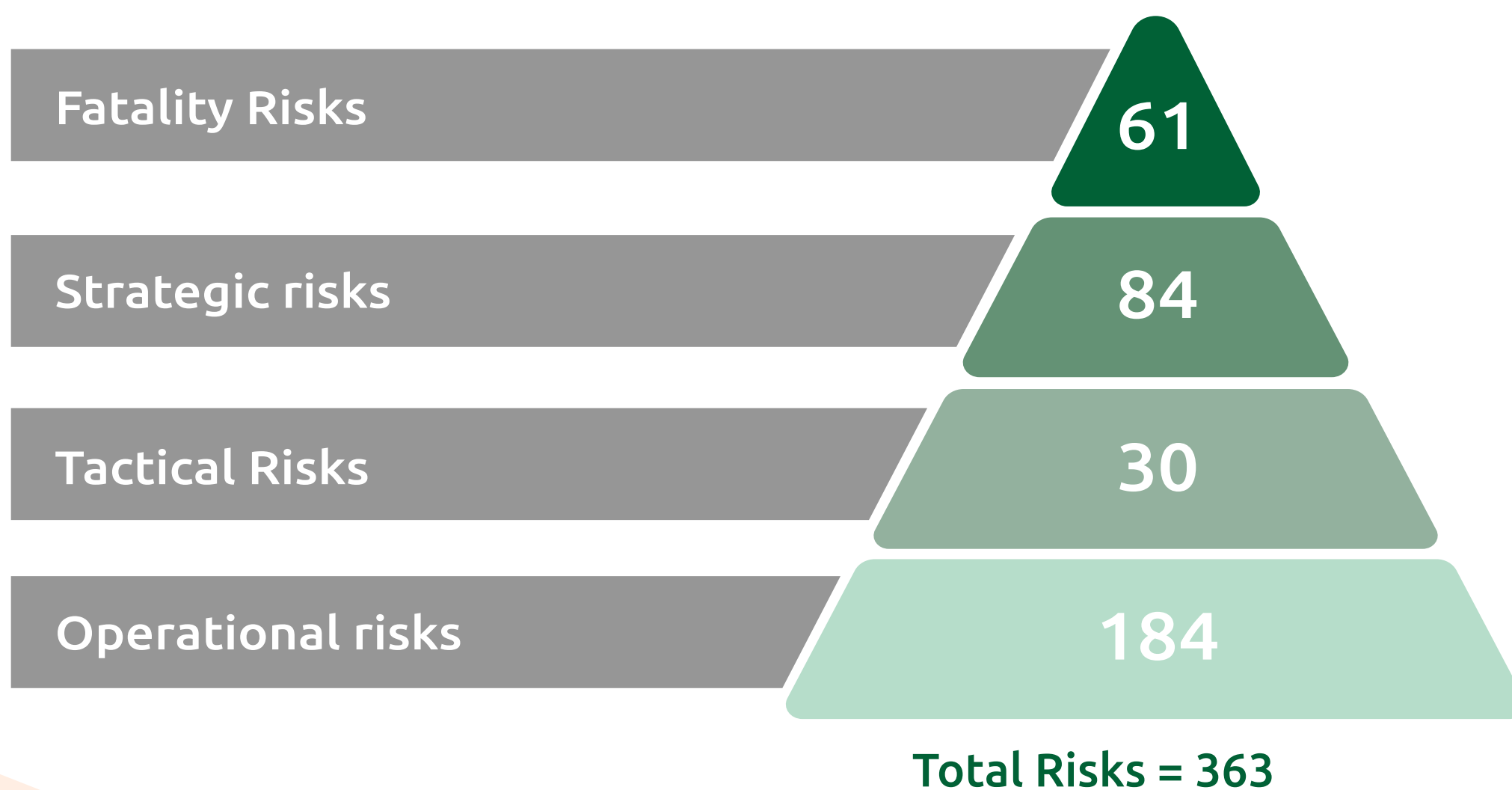


*Bow Tie - internal risk management tool.



Nature of Risks

The top leadership directly tracks the top 10 risks:



Fatality risks | Risk of death by accident or disaster that can affect one or several people.

Strategic risks | Are Related to the objectives that support the company's mission, vision, and strategic planning. They are associated with top management decision-making and can generate substantial loss in the company's economic value.

Tactical Risks | Are driven by the main actions of the areas or departments and are related to the existence of structures that require cooperation for alignment and fulfillment of the defined goals.

Operational risks | Are related to the efficiency and effectiveness of processes, and may include objectives related to the performance, profitability, use, and safeguarding of the company's resources. They are linked to the processes and departments that support the execution, maintenance, and continuity of the company's operation.

Performance Management

Continuous improvement

Throughout the year, MRN implemented improvements in the processes of the Quality Control Circles (CCQ) and 5S Programs. These initiatives contributed to developing employee leadership by encouraging them to participate in improvements in their workplace and thus eliminate waste and render processes more efficient.

QCC Program

Perceiving a problem as an opportunity for improvement is among the maxims that guide the company's teams of professionals. In 2022, the "Quality Control Circles (QCC)" seminar, promoted since 1997, presented Kaizen and PDCA - methodologies for continuous process improvement used in large corporations.

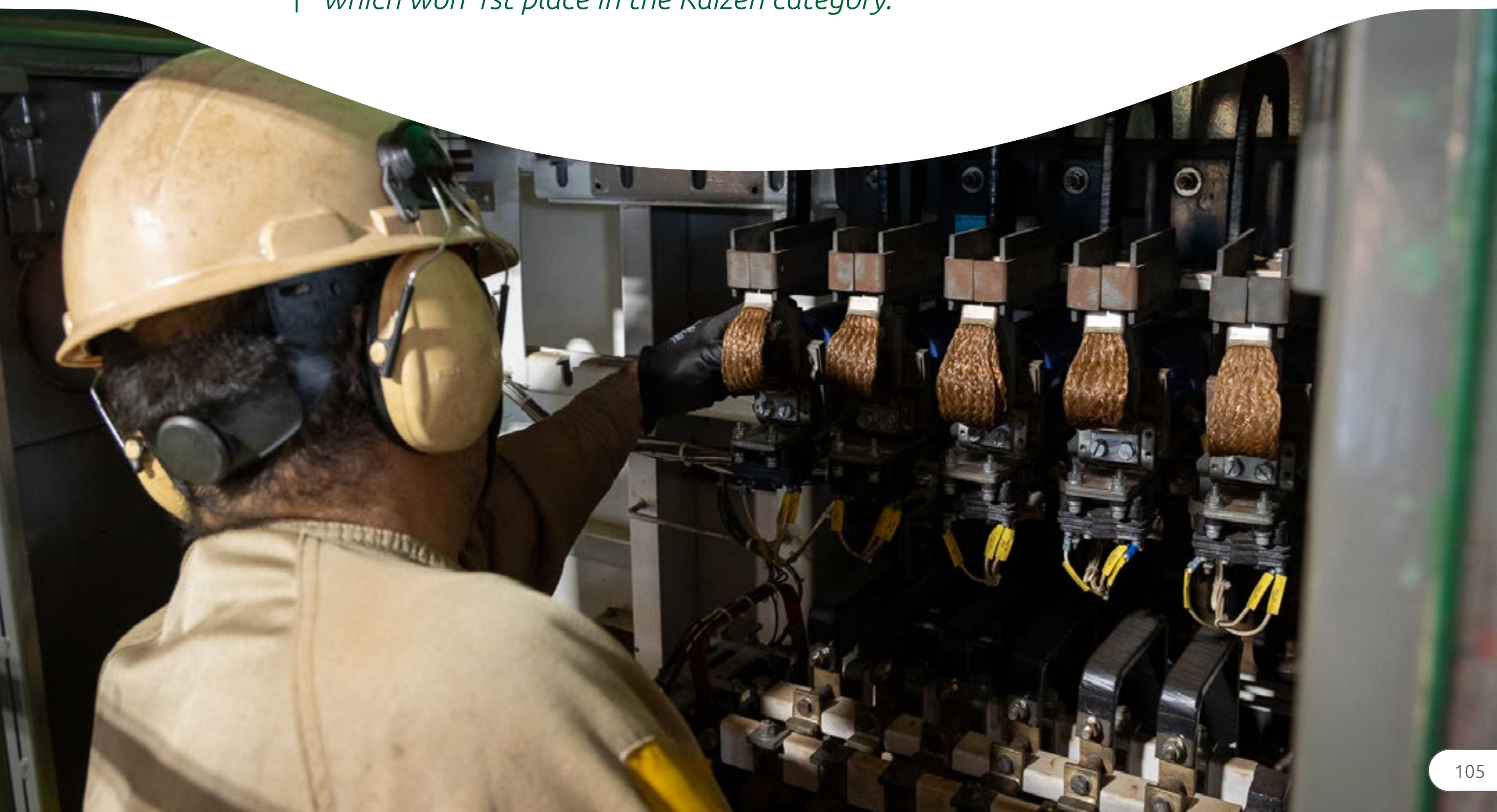
The QCC actions are planned and executed annually and are geared at disseminating outstanding practices, sharing experiences, and encouraging the expansion of know-how.

The program involves 450 employees divided into 73 groups. Last year, 29 projects were selected and the first three places in the PDCA and Kaizen categories were awarded, as well as the groups that stood out in the themes of Health and Safety, Environment and Best Presentation.



Our satisfaction is immeasurable, for it means that we are effectively contributing to increasingly strengthening the safety of our operations, as well as showing how essential these administrative tools are for both the employee and the quality of the work flow. The result could not be other than increased productivity.

*Edson Costa
electrician in the wagon locomotive sector and leader of the project "Risk in the Maintenance of the Wagon Brake Beam", which won 1st place in the Kaizen category.*



Competitiveness Program

Seeks a restructuring of cost management to optimize MRN's financial sustainability through the implementation of structural and specific initiatives.



1 - Structuring:

Initiatives in which the gain reflects a performance improvement or cost reduction that can be projected over the next few years.

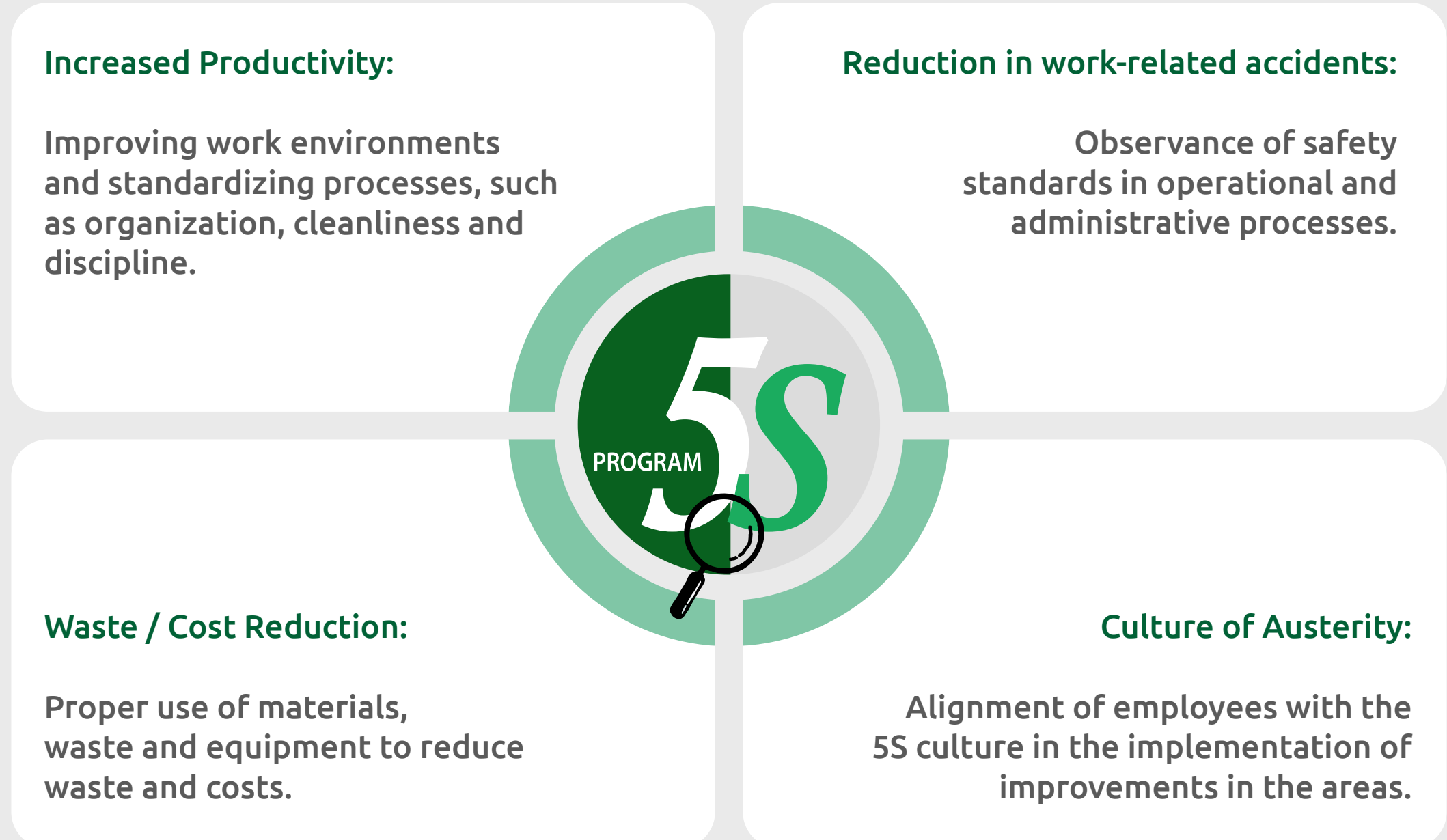


2 - Specific:

Initiatives in which the gain reflects a specific reduction in the year.

The 5S Program

The 5S Program is geared at promoting changes in the attitudes and habits of the employees with a view to continuous improvement in the processes, products, and in the environment as a whole, thus securing the company's competitiveness.



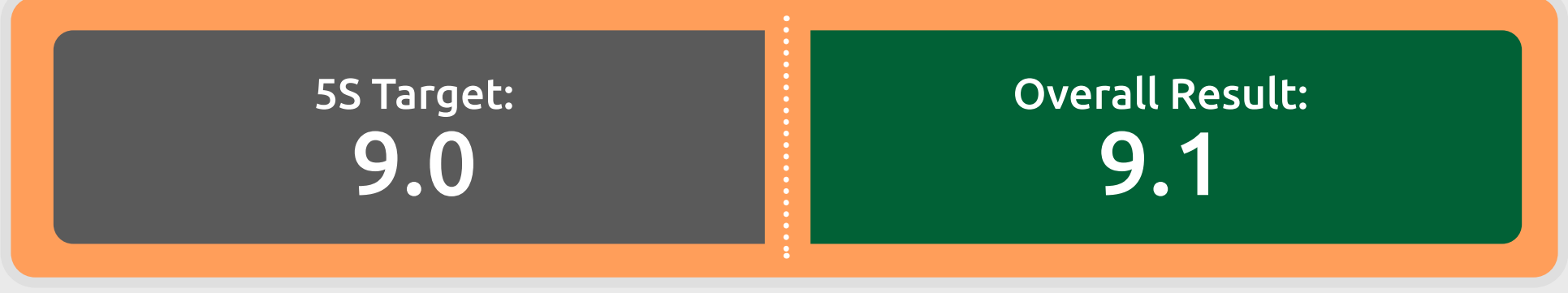
Inspections

5D inspection with a multidisciplinary team
(Management, Environment and Workplace Safety)
2 inspection cycles (June and November)
The month of December is reserved for consolidating the evaluations undertaken and/or for extra visits.

25 departments **100+ inspections**

In 2022, priority was given to operational areas, with **more than 40 environments visited**.

The average result of the assessments carried out in the workplace met the target for the year.



Operations and Innovation

Evolution experienced together

MRN's operations seek to achieve its objectives in a safe, sustainable, innovative manner. The cohesion and engagement of the teams are key for achieving expressive results, in addition to attaining productive goals. Actions in synergy with the values, thus encouraging the teams to see opportunities in the challenging universe of bauxite mining. And the sum of all this has been amazing! Room has opened up for new connections, the creation of an increasingly healthy organizational environment, and the pulsation of ideas, innovations, and more dynamic and assertive projects for everyone to keep on growing together.

Tailings System Management

MRN constantly invests in new technologies and in management, monitoring and inspection systems to minimize the risks in its reservoirs and dams.

The inspection, monitoring, operation, and maintenance data are constantly analyzed by a company hired for Engineering Records (EdR), as recommended by the National Mining Agency (ANM) Resolution No. 95/2022 and 130/2023 and the GISTM (Global Industry Standard on Tailings Management).

Resources totaling approximately
R\$ 58.5 million

R\$ 52.2 million
in Operating Costs

R\$ 6.3 million
Purchase of instruments and equipment

In addition to
R\$ 382.3 million in investments in projects and works associated with dam safety.

Monitoring of Dams

The company has a Dam Monitoring Room that is 100% dedicated to the safety of the 24 tailings reservoirs and the two sediment dams, A1 and Água Fria, which are used to accumulate and clarify rainwater that falls on the shipping yard.

In 2022, MRN maintained all the Declarations of Stability Condition (DCEs) for its reservoirs and dams. These documents are issued every six months to ANM by an independent company, which does Engineering of Record (EdR) and has professional experts in dams.



The Monitoring Room is the first line of defense for the safety of the company's reservoirs and dams. At the site, the data from the sensors are compiled. If any abnormality is detected in the tailings disposal structures and sediment dams, the emergency action protocols are triggered immediately.

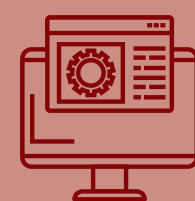
24-hour monitoring.

1,000 sensors installed.

Piezometer: Equipment for monitoring the stability of reservoir walls.



Daily inspections performed by specialized technicians and engineers.



Cloud processing and storage software.



Satellites to monitor any deformations on the reservoir walls.



Remotely activated sirens.



Emergency Action Plan for Mining Dams (PAEBM)

The PAEBM is a technical document that features the actions to be taken in potential emergencies. In addition to attaching the dam break simulation studies for MRN's tailings reservoirs and dams, the plan defines the Self-Rescue Zones (ZAS), areas from which people should leave immediately in the event of a dam emergency and proceed to the meeting points outside the risk zones.

To make this information more accessible, the company maintains a schedule of guiding seminars for the communities Boa Vista, in the Upper Trombetas River (AT I and AT II), and Saracá and Boa Nova, on Sapucuá Lake, neighboring MRN's operations, even if outside the Self-Rescue Zones (ZAS).

During the activities, concepts about dams and reservoirs, the company's monitoring system, the bauxite production process, tailings characteristics, studies carried out to define risk areas, ZAS, and current legislation are presented.

In 2022, MRN obtained the Declarations of Conformity and Operability (DCOs) for the PAEBM. In addition to the DCOS, the PAEBM Compliance and Operability Reports (RCO) were issued by an independent auditor, proving that the plan is adequate and effective for mining dam emergency situations.

To make the guiding seminars more didactic and to bring information to the community in a more objective, clear manner, MRN prepared a primer on Tailings Dams and Reservoirs, which breaks down its operations, including tailings management.



Access the QR Code to download the booklet



These lectures are very useful. PAEBM has a lot of information that helps us decide what we can and can't do and, more than that, know what can happen.



*Edenilza Albuquerque Silva,
a teacher living in the Boa Vista community.*



Global Industry Standard for Tailings Management (GISTM)

The assessment of the requirements necessary for the implementation of GISTM, which started in 2021, is ongoing. Procedures have been established for the safe management of tailings disposal structures in order to avoid any harm to people and the environment, with zero tolerance for fatalities. The company intends to have 100% of the actions duly implemented, as planned for in the GISTM scope, by August/2025.

Other outstanding initiatives

- 1** Improved water management, storage and handling. The objective is to obtain a more precise water balance for the entire tailings disposal system - rain water collection and management, access regularization, leveling and improvement of the drainage on the crests*, construction of berms**, new signage, instrumentation etc.
- 2** Development of the Water Management Master Plan (WMMP) projects to increase the reliability of the water system during periods of heavy rainfall. To this end, the following are being carried out: resizing the pond and elevation systems, water discharge and reagent dosing and control systems for the clarification of occasional discharge water.
- 3** Continuous investigation and characterization of the tailings and dams that make up MRN's tailings and sediment reservoirs, in order to meet ANM and GISTM regulations.
- 4** Operation tests with Mudfarming*** equipment in order to evaluate the potential to expedite tailings compaction cycles.
- 5** Operationalization and staff training for using the penetrometer**** (CPTu).
- 6** Geotechnical studies to evaluate the safety factors of the structures and hydrogeological studies to optimize the structure reinforcement projects.

*Crest - sloping surface of the embankment in contact with the reservoir water produced by the dam.

**Berms - elevation of land between two furrows.

*** Mudfarming – up-to-date technology for controlled thickening of tailings.

****Penetrometer - equipment for performing tests/boreholes that help characterize the geotechnical behavior of a material.

Dam Safety

In 2022, the following actions were performed:



Continued construction of SP-25A*, SP-25B, SP-25C.



Crest regularization processes: new designs, new concepts for moving barrier concrete spillways.



Ongoing campaign of installation and automation of electric piezometers and inclinometers.**



Retrofitting and relocation of the siren system for eventual emergency situations.



*SP - settling ponds

*** Inclinometer - an instrument used to measure horizontal displacements on reservoir walls.

Energy Management

MRN generates 100% of the power it uses without connection to the national grid. The Power Generation Plant meets the demand of the entire industrial complex, mine and port, support infrastructure and residential village.

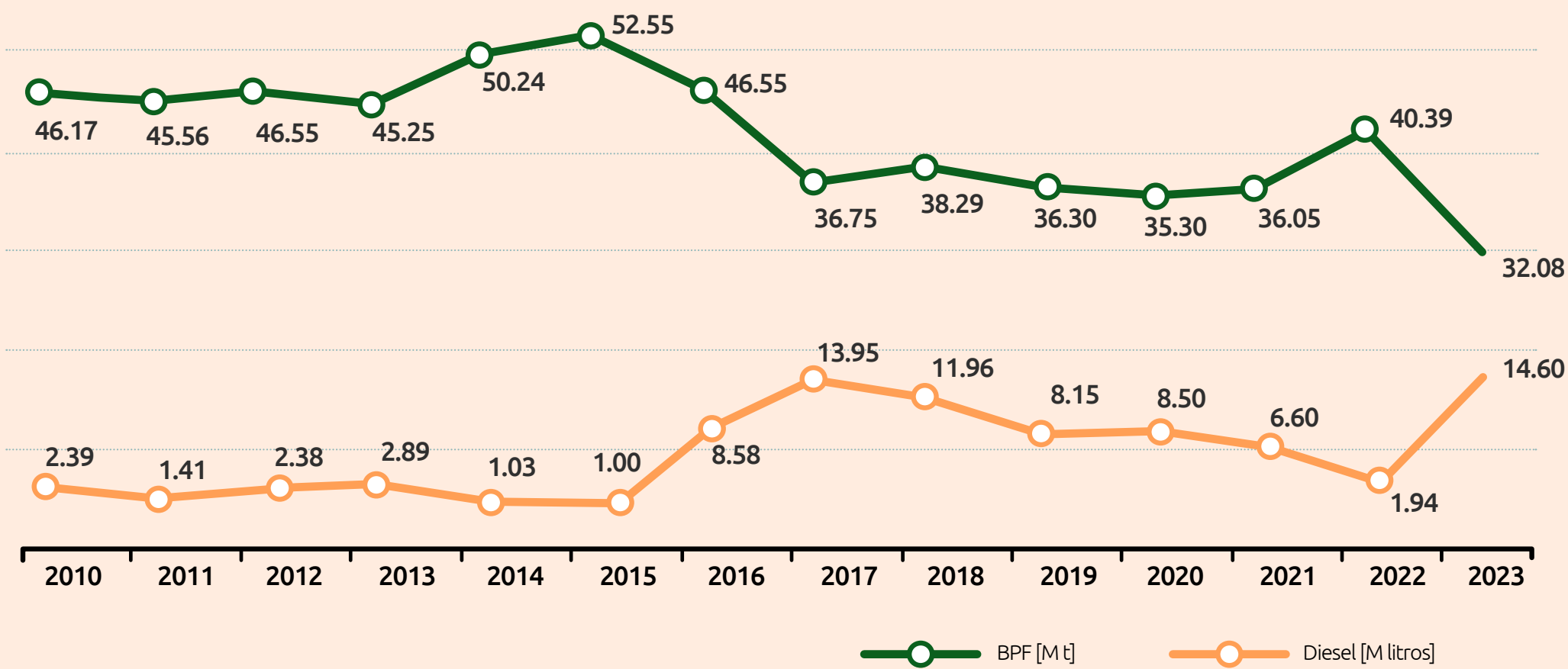
The company is part of IBRAM's Energy Committee, which was created in 2019 within the framework of the Letter of Commitment, now Brazil's Mining ESG, whose goal is to make the sector reduce its energy consumption by 5% and increase the renewable source in the energy matrix. MRN has a series of studies to contribute to these goals.

Last year, the company set up a team to study and seek improvements in energy efficiency in order to provide for specific actions in all of its production sectors, besides concentrating studies to evaluate the inclusion of new renewable energy sources.



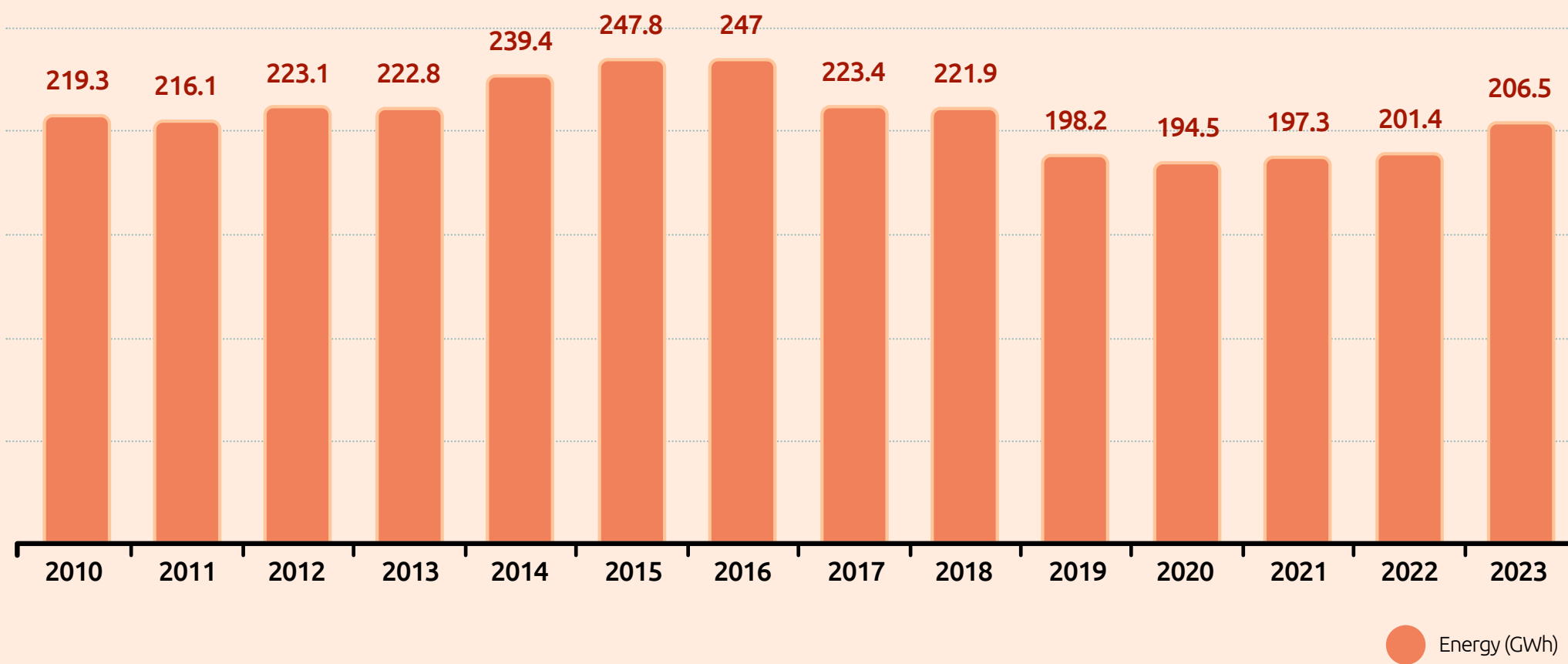
MRN **reduced** water abstraction volume **by 80%** after five cooling towers were installed to meet the demand of the Power Generation Plant.

Fuel Consumption:

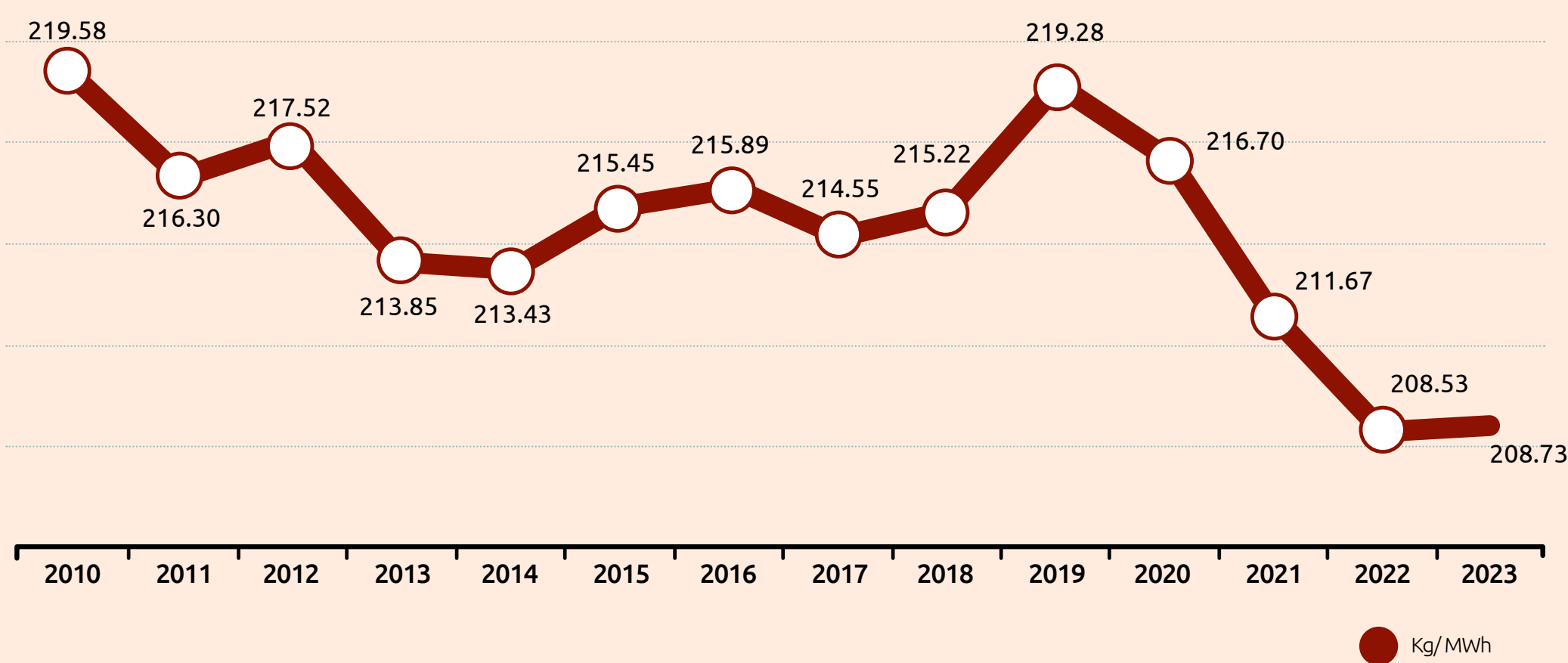


BPF - Low Pour Point

Energy generated:



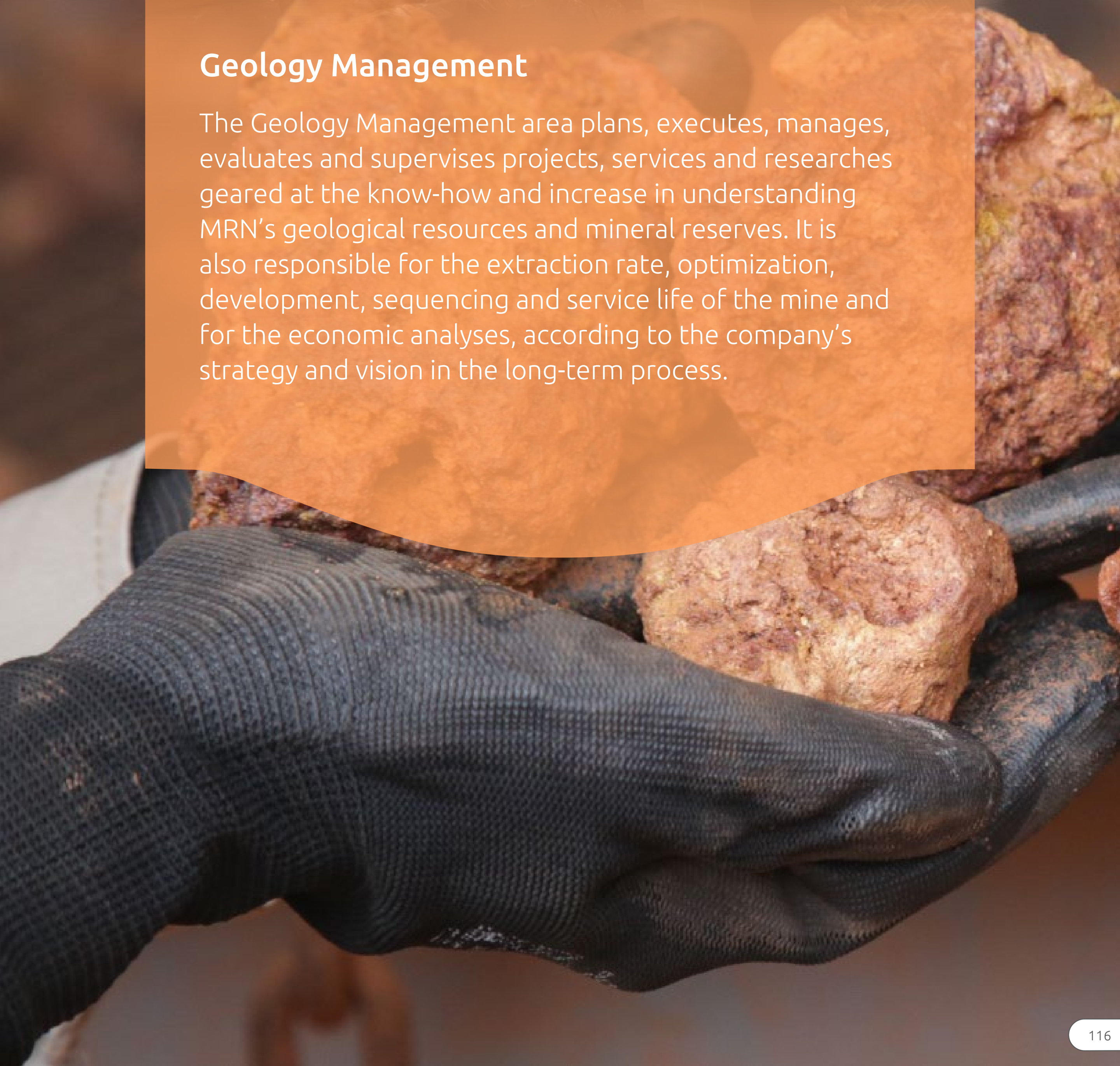
Specific consumption (Kg/MWh):





Geology Management

The Geology Management area plans, executes, manages, evaluates and supervises projects, services and researches geared at the know-how and increase in understanding MRN's geological resources and mineral reserves. It is also responsible for the extraction rate, optimization, development, sequencing and service life of the mine and for the economic analyses, according to the company's strategy and vision in the long-term process.



Utilization of the Bauxite Wash Tailings

In a partnership with the Green Chemistry EMBRAPA Unit (TecnoGreen), of the Polytechnic School at the University of São Paulo (USP), MRN developed a hydrometallurgical route to be applied to the bauxite washing tailings to obtain alumina used in the production of LEDs and high capacity lithium-ion batteries (LIBs) (see table below).

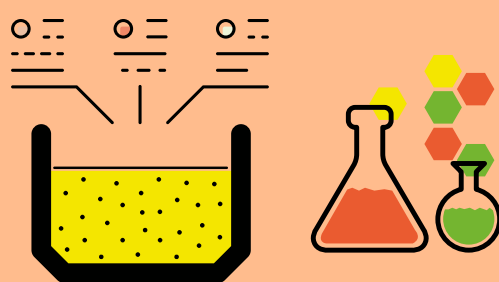
In 2022, the project tested the behavior of the transformation of bauxite into alumina in the samples obtained, which resulted in purities of 99.9% and 99.989% (considered satisfactory).

1



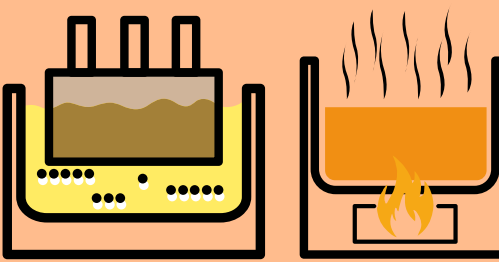
Bauxite with high $\text{Al}_2\text{O}_3 \cdot 3\text{H}_2\text{O}$ content (>65%) and different contents of impurities such as Fe_2O_3 , SiO_2 and TiO_2 . Utilization of bauxite washing tailings to obtain high-purity alumina.

2



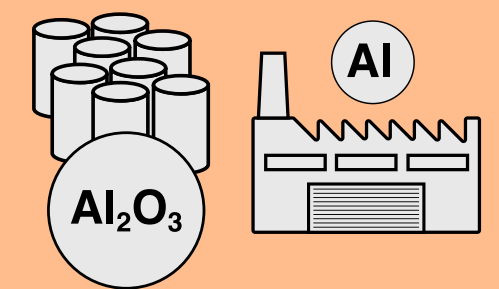
Application of a hydrometallurgical route using acid leaching* to obtain liquor with a high aluminum content.

3



Purification of the liquor by solvent extraction or ion exchange. Precipitation followed by calcination** of the material of interest.

4



Production of high-purity alumina. Around 90% of alumina production is used to make aluminum.

Hydrometallurgical route - designates metal extraction processes in which the main metal separation step involves a dissolution reaction in an aqueous medium of the material containing the metal to be extracted.

*Leaching consists in the extraction of the soluble content of a solid that has the metal or metals of interest in its composition. This extraction occurs through contact of this solid with an aqueous phase.

**Calcination is an industrial process that uses very high temperatures, usually between 800 and 1,000 degrees Celsius or higher, to change the physical and chemical properties of various solid materials, such as ores and metals.

Machine Learning

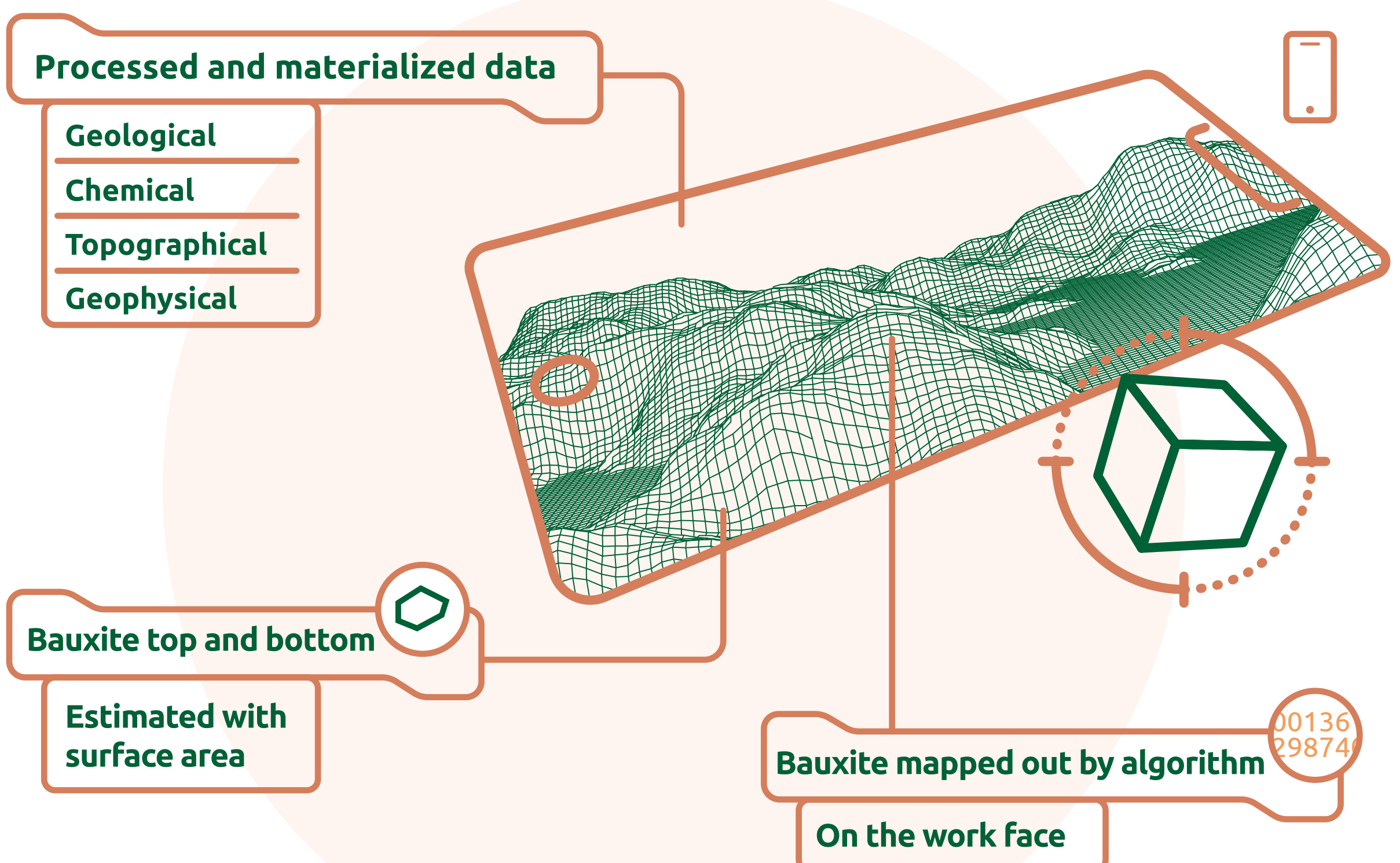
The project uses a virtual reality software (Geovisionary) to enhance geological interpretation in a collaborative and immersive way, to improve pre-field preparation work and to refine geological interpretation in the post-field phase. Last year, a pilot test was conducted to demonstrate the applicability and benefits of the technology, and the following information was included:

- Topography
- Boreholes
- Geophysical sessions
- Geology (wireframe)
- Point cloud acquired with a drone
- Result of machine learning analysis for top/bottom definition

The results showed that MRN's database is consistent in terms of resolution and accuracy to allow the application of virtual reality technology.

Artificial Intelligence applied to geology

Direct 3D visualization on the device



Hydrogeological study

Conducted through a partnership with Frasa Ingenieros Consultores, one of the world's largest water experts company, the study predicts the hydrological behavior during the working phases of each plateau, considering its distinct characteristics and variations in the operating system.

In 2022, through this methodology, the gain was 1.5 Mt* of mined-out ROM** in the annual production and the 2023 mining plan contemplates in the budget the production of 0.98 Mt of ROM, which will add to the gains obtained previously.

The methodology of the project has already been validated and is being continued so that it can cover all of MRN's mineralized areas. The initial expectation of gain is at least 1.8 Mt of ROM, considering 30% of the work planned for 2023.

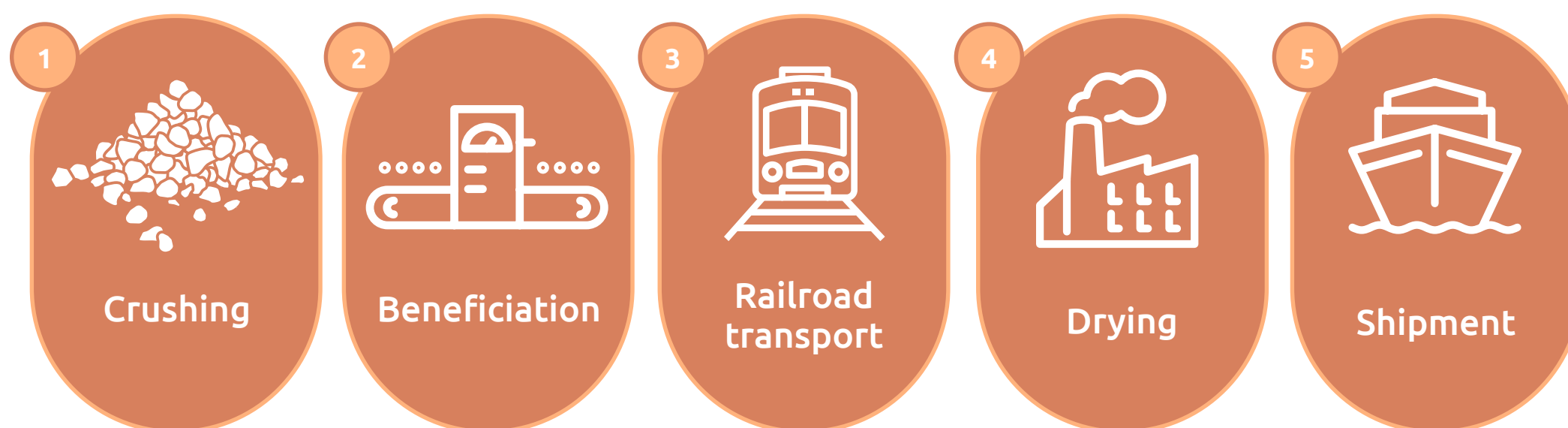


*Mt – million tons

**ROM (Run of Mine) – is the raw ore, obtained directly from the mine, without undergoing any type of beneficiation.

Industrial Management

The production process of MRN's Industrial Management is basically concentrated in five stages, namely:



In the crushing and beneficiation processes, the mined-out bauxite is crushed to reduce the size of the particles, transported to the plant and processed by screening to generate the lump product and, later, by cycloning to generate the fine product.

The ultrafine from this process, called tailings, is directed to the disposal system, which supplies about 90% of all the water needed for the beneficiation process.

After these steps, the ore is dumped into five open yards in the port area for ship loading (shipment) or for bauxite drying, and then stored in the roofed yard, called 'Bauxitão.'

In the drying process, high temperatures (up to 1200 °C) are used to reduce the existing moisture in the bauxite.

SHIPMENT 10,000

MRN's safe production culture has allowed it to reach expressive milestones in 2022, such as the 10,000th shipment. Over 43 years of operation, more than 473 million tons of bauxite have been shipped.

The company also won second place in the Best Annual Evolution Category of the Environmental Performance Index (IDA), promoted by the National Agency of Waterway Transport (Antaq).

The recognition is for initiatives that improve the services provided by shipping companies and port facilities regulated by the Agency, in addition to encouraging research and technical-scientific production.

Cycloning - is the classification operation performed in a piece of equipment called cyclone. The cyclones and hydrocyclones are pieces of equipment generally used in the separation of solid particles in a fluid stream. However, they can be used as classifiers of solid particles, dryers, reactors etc.

Compliance

Growing with ethics and integrity

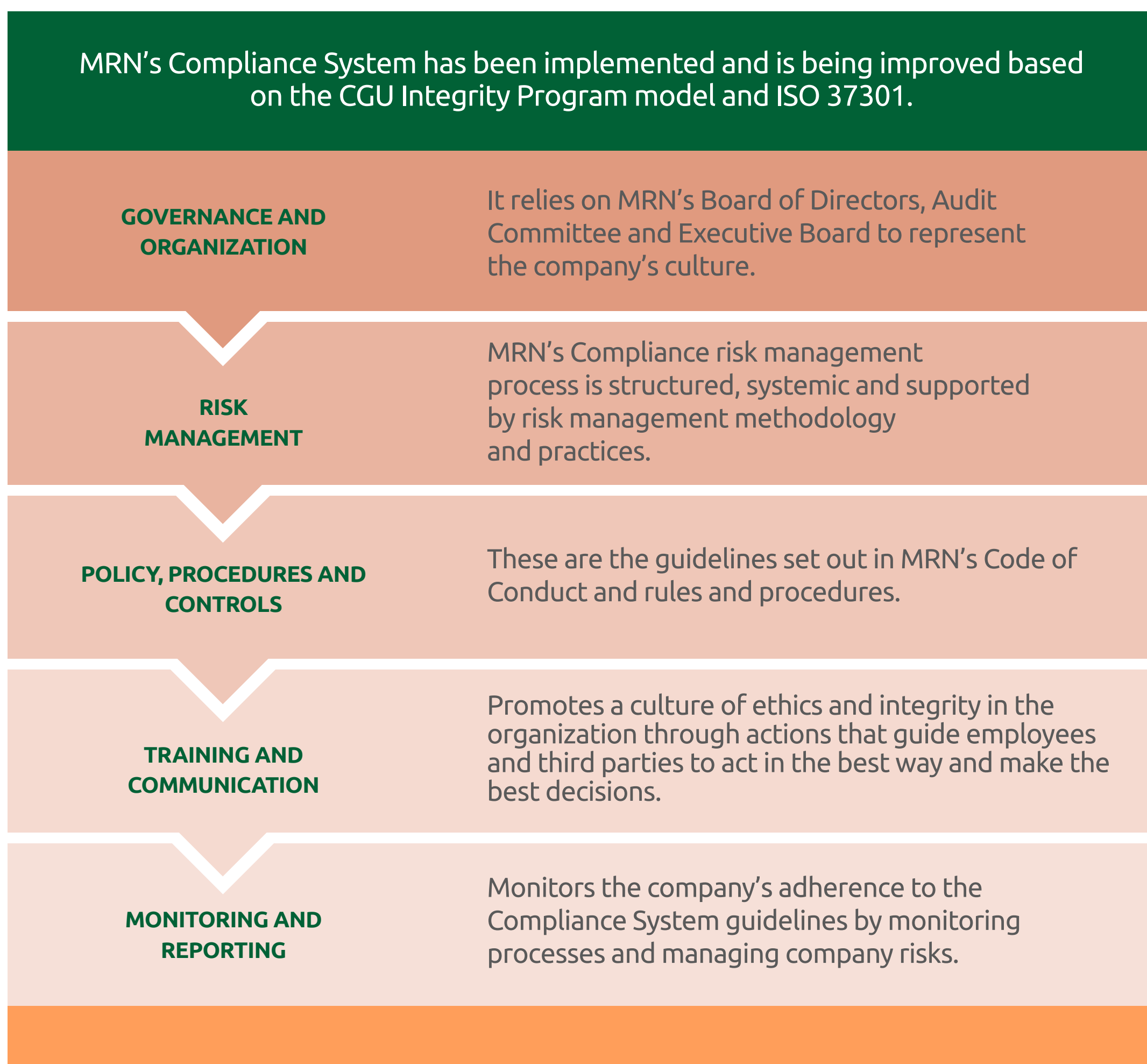
The development of a company, a proposal, an idea, a life demands constant attention to follow the right path. Knowing the rules of the game, determining limits, and offering support for the best decisions with ethics, transparency, and integrity. Sustainability in the form of care, protection, and hospitality.

Good corporate conduct

MRN’s Compliance and Governance Department is responsible for securing through its Management System that the Company’s actions and conduct in running its business are guided by the principles of good governance, proportionality, integrity, transparency, accountability and sustainability.

This system also seeks to provide control mechanisms to secure the prevention of possible misconduct and to encourage the organization’s development to be aligned with the best market practices, thus securing compliance with the requirements, standards and legislation in effect (both national and international) and promoting a culture of ethics and integrity.

In compliance with the assumption of good process improvement practices, the regulations that sustain the Compliance Management System were reviewed and risks were reevaluated, so as to verify whether treatment and control actions remained effective.



Compliance Management in Numbers



1,393
employees
were trained in
the following
subjects:

Code of Conduct (Click here and check out the full material, available at the website)

Preventing and Combating Discrimination and Harassment

Compliance Management System

Anti-Corruption

Interaction with Public Agents

Gifts and Amenities

Conflict of interests

Donation, Sponsorship and Socioenvironmental Investment

Integrity Due Diligence

Interaction with Public Agents



54 Compliance
Communication
Actions were carried
out, highlighting the
following:

Antitrust Primers and Expected Conduct

Meetings with Compliance Ambassadors, thus bolstering this initiative

Messages and Pills, with information and guidance regarding Compliance guidelines



Ombudsman Channel

MRN has a process to receive reports and complaints called the Ombudsman Channel, which is available to the internal and external public, acting within the principles of transparency, impartiality and independence. Claims and complaints are received and forwarded by a specialized consulting company, thus securing that they are directed accordingly.

In the year 2022, MRN's Ombudsman Channel received 455 reports, including whistle blowing, consultations and complaints. Out of the whistle blowing reports received and evaluated throughout the year, 21% were classified as valid and appropriate measures were taken by the company; 4% were partially valid; 24% were unfounded; 8% were inconclusive, and 16% were interpreted as being related to matters not connected with MRN's activities. The other 27% were received in the last quarter of 2022 and, therefore, will be finalized within the expected timeframe throughout 2023.

Ombudsman Channel Contacts



<https://relatoconfidencial.com.br/mrnouvidoria>



ouvidoriamrn@relatoconfidencial.com.br



0800 727 6776

Preventing and Combating Discrimination and Harassment

MRN has regulations and a Guide for the Prevention and Combat of Moral and Sexual Harassment, Bullying and Discrimination geared at establishing the main guidelines for the prevention and combat of discrimination and harassment in MRN's facilities, thus securing the promotion of a healthy organizational environment and culture, based on mutual respect and equal treatment.

Awareness is a key element in preventing and combating discrimination and/or harassment at work, requiring efforts, clarity, and everyone's awareness of the seriousness of these behaviors.

MRN does not tolerate any kind of moral or sexual harassment, discrimination and/or bullying conduct, regardless of hierarchical position or capacity.

Any MRN employee or service provider who feels he/she is a victim of, or witnesses acts that may constitute, discrimination, harassment and/or bullying in the work environment may report it to the Ombudsman Channel.



5

PNM

Building a future that is also sustainable



PNM

Building a future that is also sustainable

MRN considers the mining activity of the present and the future. Therefore, it continues to focus on the sustainability of its operations, understanding that bauxite mining is only economically viable if it is carried out in an integrated manner. The company is in the licensing phase of the New Mines Project (PNM) to maintain its production and investments in the Western Region of Pará State.

The PNM is a continuity venture for MRN's bauxite mining operations in three municipalities: Oriximiná, Terra Santa and Faro. It is not an expansion, since all structures currently used by MRN - such as port, railroad, roads, administrative and operational facilities - will continue to be used. However, some permanent and other temporary infrastructure (such as access roads, accommodations and workshops) will be necessary to maintain the current level of production of 12.5 million tons per year, thus preserving the more than 6 thousand current jobs and generating new ones.



MRN believes that growing in western Pará is much more than expanding its operations. It is about continuing a legacy in the Amazon that goes far beyond mining.

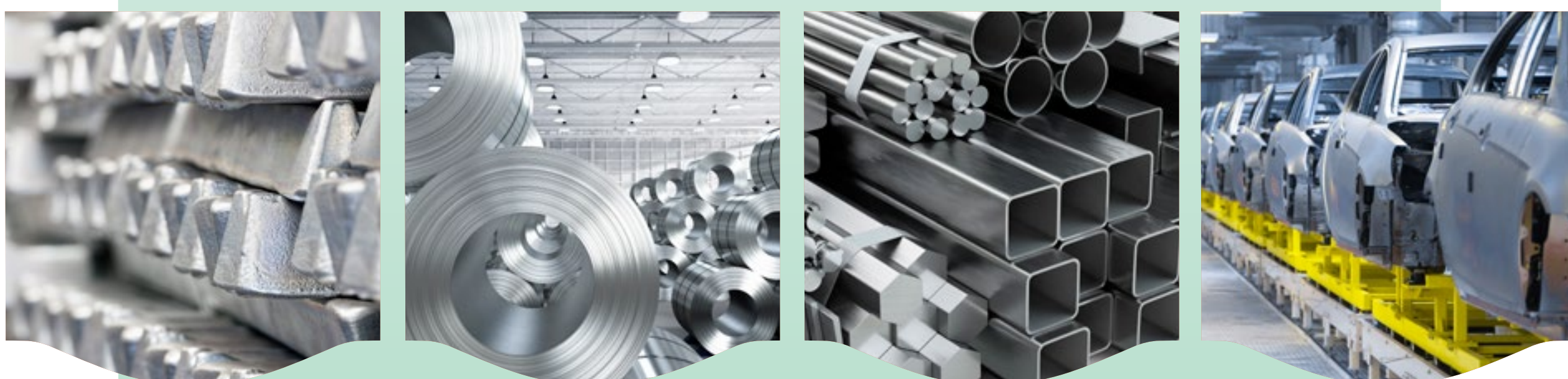
This initiative prompts the company to secure the collection of taxes that are reverted into public policies for the municipalities of Oriximiná, Terra Santa, and Faro. The positive impact is reflected in projects and partnerships with local communities in major areas such as education, health, culture, entrepreneurship, and income generation.

The PNM also means the continuation of social responsibility projects and environmental actions. Currently, the company develops more than 60 socio-environmental initiatives, which benefit more than 100,000 people in the region, such as Quilombola and riverside communities.



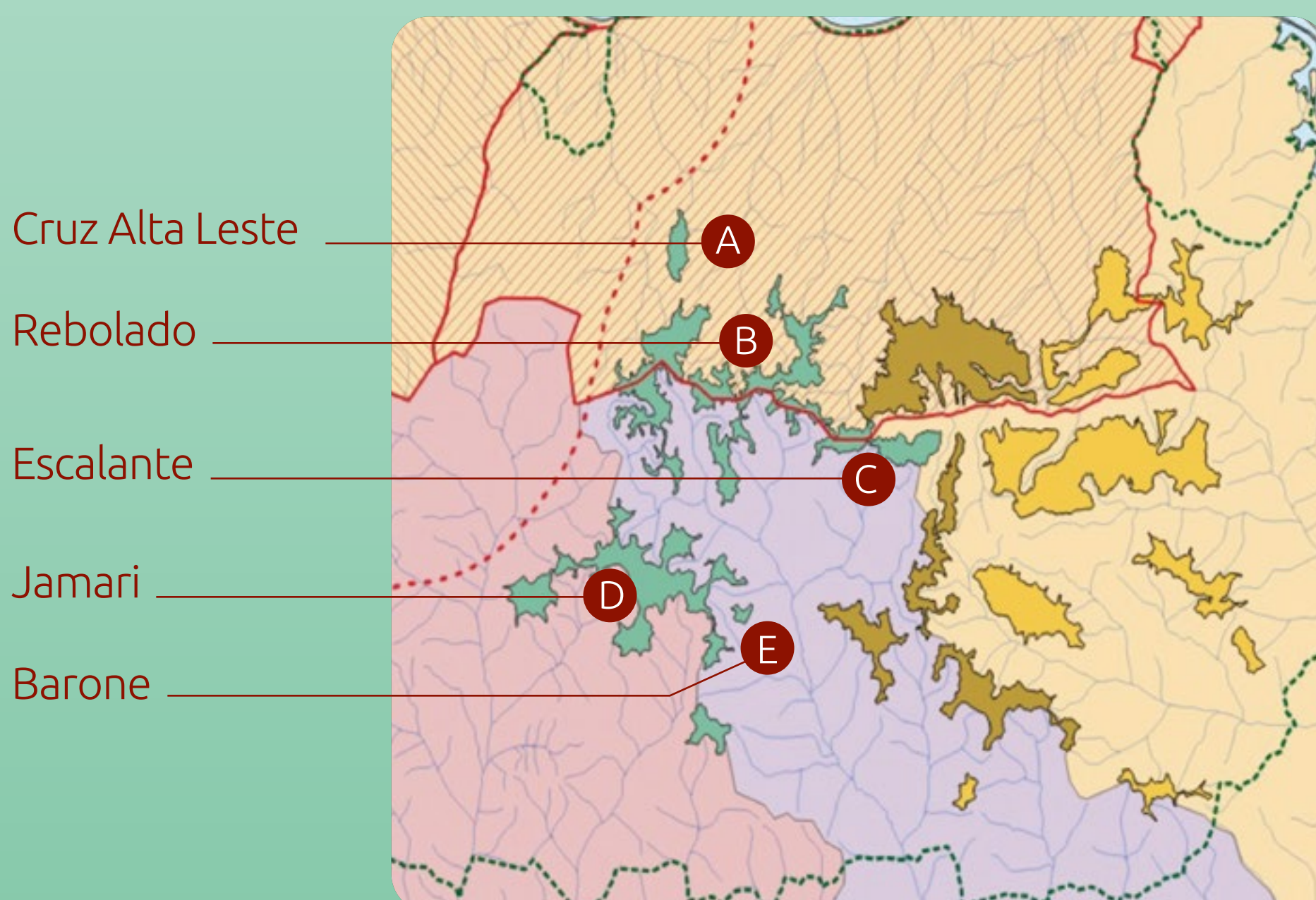
How important is bauxite?

The reddish rock found underground is an ore that serves as raw material for the production of aluminum, a metal regarded as the most sustainable in the world for its infinite recycling capacity and for being widely used in different products, such as boats, airplanes, packaging, windows, frames, pots, cell phones, medicines, among others.



New plateaus

The life of MRN's complex shall be extended by another 15 years through the work carried out in five new plateaus: Rebolado, Escalante, Jamari, Barone and Cruz Alta Leste. All of them are located inside the Saracá-Taquera National Forest:



Inside the PNM

For the execution of the New Mines Project (PNM), it is necessary that the Brazilian Institute of Environment and Renewable Natural Resources (Ibama) issue the following licenses: preliminary (PL), installation (IL), and operation (OL) licenses.

As part of the licensing process, Ibama evaluates the Environmental Impact Study (EIA), which is a technical document prepared by an independent multidisciplinary team and intended for evaluating the environmental, biotic, and social impacts generated by potentially polluting activities and/or enterprises, or those that may cause environmental degradation, and for proposing mitigation and environmental control measures.



MRN envisages the importance of operating with respect for nature and it bets on dialog and partnership with the communities neighboring the project.

The same team also prepares the **RIMA (Environmental Impact Report)**, which is a document with accessible language that reflects the main conclusions of the study. The report must be presented in an objective manner, so that everyone can understand the advantages and disadvantages of the project as well as all the environmental consequences of its implementation.

Method for Dry Tailings Disposal into Pits

Regarding the PNM, MRN plans to use the Method for Dry Tailings Disposal into Pits, which allows the dry tailings from the bauxite mining process to be returned to the place where it was extracted, resulting in several advantages, such as the acceleration of the forest reclamation process of the mined-out areas, reducing the need for vegetation removal and reuse of reservoirs for drying the tailings.

How does this technology work?

A | Before the PNM

1| The tailings were deposited in reservoirs until they were full.



2| After the tailings had dried, the filled reservoirs were reforested.



3| New reservoirs had to be built to receive the bauxite tailings.

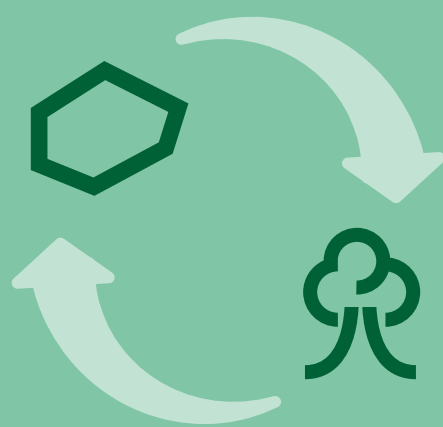
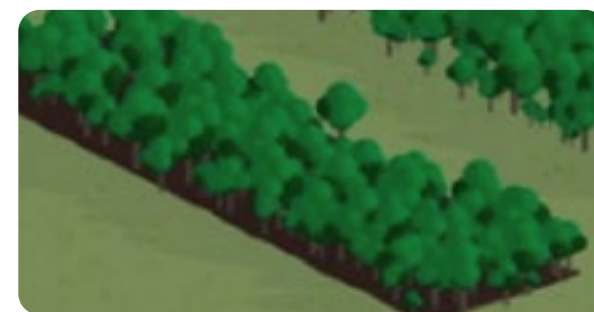


B | With the PNM

1| After drying, the tailings are removed from the reservoirs and deposited in the pits where bauxite mining has been completed. In other words, it goes back to where it came from.



2| The filled-up pits are covered with layers of soil and black earth, and then reforested with native vegetation.



A more sustainable process, as it involves:

- Reclamation of mined-out areas
- Reduced need for plant suppression
- Technology in line with international best practices.

What are bauxite tailings?

It is the mixture of soil and water from the bauxite washing process, which is done with water only, with no addition of chemicals. The tailings go into reservoirs that, after being filled, are decommissioned and reforested with native vegetation.

Public Hearings for the PNM

The Public Hearings for the PNM were held in May/2023, after more than 40 rounds of previous meetings with more than 60 communities, city boards, town councils, trade associations and representative entities. Although such meetings were not part of the legal requirements, the preliminary meetings were put into practice by MRN due to the understanding that this is the best way to communicate directly with each stakeholder and explain about the project to those who live there and to take their considerations and suggestions into account.

Holding the hearings is a crucial step in the environmental licensing process. The presence of the community is extremely important, so that a transparent, respectful dialog occurs between MRN, Ibama and the population about the PNM, thus securing adequate leading of the process.





Public hearings* in numbers:



3 municipalities:
Faro, Terra Santa
and Oriximiná



More than **1,600**
attendees



Roughly **20 hours**
of discussions



192 statements,
including oral and
written inquiries



Public hearings are a right of the population. It is one of the most democratic events in the licensing process whereby the entire community impacted by the project and other stakeholders have the opportunity to manifest themselves with criticisms and suggestions. And all of them will be observed.

Vladimir Moreira
Sustainability and Legal Director - MRN



*Despite having occurred this year, MRN decided to include the information above in the 2022 report as it understands the importance of presenting the updated status of PNM.



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