Sustainability Report 2021 LIGHT FOR THE FUTURE



Just Energy Transition

Attentive to the economy, the social and environment, Rio Deserto is preparing to enter a new season.







SUMMARY



This Sustainability Report presents Rio Deserto key achievements during the year 2021. The following pages contain results and initiatives that reinforce the company's integrity, transparency and commitment to ethical, environmental, social and economic principles. This material has been produced in compliance with the General Law on the Protection of Personal Data (LGPD), respecting the relevant guidelines. Enjoy reading it!

MINERAL COAL

Proven technologies already exist to eliminate CO emissions, including High Efficiency Low Emissions (HELE), Carbon Capture and Storage (CCS), and Coal to Hydrogen.

Coal supports renewables by providing grid-based power when the sun is not minishes. It is therefore a secure source of electricity. Coal and renewables are codependent and should coexist.

The water crisis experienced in Brazil confirms that mineral coal needs to be maintained, in order to reduce the cost of the electricity tariff and provide security of supply. Water is vital so that there is no shortage of consumption, industry and

The value of coalfired thermal energy is lower than other thermal energies. It is four times cheaper than fuel oil thermal plants, for example.

Coal cannot be discarded because it is considered "unpopular". The focus needs to be on new "phasing-in" technologies, not on "eliminating" any

There is no sinale solution to the planet's climate change. The Paris Agreement called for "all clean technologies and cooperative action".

The production and transmission of electric energy through mineral coal represents a strong socioeconomic impact. In the South of Santa Catarina, it includes coal mines, railroads, thermal power plants, and cement production. There are 15 municipalities involved and more than 80 thousand people.

14 million

unemployed

In 2021, Brazil reached the mark of 14 million unemployed. The time is not to close job opportunities, but to open and expand them. In this sense, coal is a source of employment and income.

fuel source.

Governments, economic organizations, and the investment community at large must "unite" around all energy sources and all clean energy technologies with policy settings that provide equal support and funding.

electricitu supplu in more than 80 countries, and by 2040 it will remain the largest single source of electricity for 22% of the world's population.

Coal remains essential for Countries need to conduct their own energy reality check and choose the energy path that best meets their economic, social, and environmental needs.

> Thermoelectric power plants play an important strategic role for the Brazilian electricity sector. In the Jorae Lacerda Thermoelectric Complex, the installed capacity is 857MW. The production is equivalent to more than 30% of the energy consumption in Santa Catarina.

> The sector is a propeller of educational, social and environmental projects. An example is the financial support from the coal mines, of more than R\$ 6 million/year, to SATC. The educational institution has more than 5 thousand students (some of them in socially vulnerable conditions).

> The coal companies, besides maintaining sustainable enterprises, are also recovering areas degraded by mining in the past. Some of these areas have become green public spaces that are safe, inclusive, and accessible to the entire population.

The State Policy for Coal in Santa Catarina enables the technological modernization of coal, aiming to meet the requirements of a low carbon world, using an Santa Catarina subsoil in a sustainable way.

such as wind turbines).

The hard coal industry supports the Fair Energy Transition by standing together in a coalition to pursue the low carbon world.



The fuel cost mechanism (R\$ 700 million/year) moves an economy of about R\$ 5 billion, which is equivalent to 1/3 of the GDP of the region.

The fuel reimbursement mechanism that maintains the Jorge Lacerda Complex and the production chain of mineral coal, represents 0.37% of the energy bill. It is, therefore, cheap insurance for the Brazilian electricity system.

The creation of the SATC Technological Center demonstrates the advances in the coal sector with sustainability and innovation in mind. At the site research is carried out, with emphasis on the use of residues, new coal products aimed at the search for low carbon technology, including CO₂ capture.



MESSAGE FROM THE MANAGEMENT

NEW TIMES!

We have been living in new times. The Covid-19 pandemic was a milestone in people's lives and in the history of organizations. A difficult period, but from which many lessons can be learned. The exponential advance of technology and innovation, as well as empathy, resilience, and attention to the planet stand out.

New ways of thinking and acting have become part of everyday life. The responsibility and commitment of companies to economic, social and environmental development has gained even more strength. Everyone has been working toward a better future, thinking of the next generations.

In this process, we understand the importance of education, investments in health and safety, attention to the environment, valuing people, quality, technology, and all the other axes applied to sustainability. Planning and carrying out actions that promote a better tomorrow is everyone's duty. In the scope of the Southern Catarinense coal sector, today we talk about Fair Energy Transition. The term began to gain prominence in 2021. At the beginning of this year 2022, the law creating the program was sanctioned and, subsequently, a council was set up to deal with the matter.

The members of this council are observing the environmental, economic and social impacts of the coal sector, with a view to sustainable development. In addition, they must promote the valorization of energy resources and align the transition to carbon neutrality in accordance with the targets set by the Federal Government.

In this scenario, Rio Deserto has been doing its part, with various actions connected to the tripod of sustainability, as can be seen in this Sustainability Report. The company is also the first coalmining company in the South of Santa Catarina to start actions for the Management of Greenhouse Gas Emissions, revealing its commitment and transparency with society.

Our expectation is that the communities, companies, public authorities, educational institutions and class entities can join forces in favor of important advances for the sector and society as a whole. After all, we understand that we are in a new scenario, where technology and new business must emerge so that coal continues playing its important role in the Brazilian electricity sector.

In Rio Deserto's activities, care for the environment, attention to people and investment in technology are priorities. This is how we believe we can build a more sustainable future.

HEITOR AGENOR ZANETTE GIOVANNI PAGNAN ZANETTE VALCIR JOSÉ ZANETTE Rio Deserto Administrators

JOÃO GABRIEL PAGNAN ZANETTE EDUARDO NETTO ZANETTE Financial and Administrative Advisers

MESSAGE FROM THE MANAGEMENT



THE RIO DESERTO

Valuing people, caring for the environment, planning for the future and innovating in each process. With these principles, Rio Deserto has been writing its history. Today, the company has 16 business units, either productive, administrative or research, and is present in nine municipalities of Santa Ca-

Thanks to its professionalism, commitment to the environment and search for improvements, Rio Deserto is the first coal producer in the South of Santa Catarina state to be certified in the three management standards: ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and ISO 45001 (Occupational Health and Safety Management). It is also a pioneer as a signatory company of the National Movement SDG (Sustainable Development Goals) in Santa Catarina.

Rio Deserto's business encompasses various segments. The main one is mineral coal, used in the generation of electrical energy. Besides this, the company supplies mineral solutions for the ceramic, glass and steel sectors. It is also active in eucalyptus forestation and reforestation, making a significant contribution in the economic, social, and environmental areas.

Agribusiness is another branch of Rio Deserto, with the brand Ragro Mineral Solutions, a highlight in the supply of inputs for plant strengthening and animal nutrition. Animal nutrition, by the way, is certified in GMP+B1 Production, trade and services (acronym that represents the quality assurance seal in the international scenario of industries that supply ingredients for animal feed).



Supply of mineral inputs.



MISSION

VISION

Contribute to national development through the extraction, industrialization and commercialization of mineral products, transforming mineral resources into solutions.

VALUES



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Rio Deserto's behavior reflects the thinking towards the country's socioeconomic development. All actions are taken in the direction of growth, both for the company and for employees, customers, suppliers, communities and partners in general.

> Innovation

Technological improvement, development and valorization of the employee's initiative, in search of continuous results for organization.

> Commitment

and safety.

> Ethic

and transparency.

> Socio-environmental Responsibility

Contribute to the conscious and sustainable development of society, favoring the full exercise of citizenship and respecting the environment.

MINERAL COAL

is a source of safe electricity, employment and income.





To be a national reference in the supply of mineral inputs.

With customers, employees, suppliers, inspection agents, communities

Respect the principles, policies and practices defined by the company, regulated by law and by society, working with honesty, professionalism

UNITS Criciúma (SC) • Central Office MANAGEMENT POLICY Rio Deserto establishes the Management Policy: • RD Engineering • Oriental Wealth 1. Clients Management Ltda. Customer satisfaction, which are the reason for existence, identifying and meeting the applicable requirements. 2. Employees and Suppliers HO_O Development of employees and suppliers. 3. Health and Safety Compliance with legal and other requirements, adoption of proce-Lages (SC) dures to prevent and reduce injuries, incidents, accidents and occu-• Lages Unit pational diseases, eliminating hazards and reducing risks. 4. Environment Respect for legal and other requirements, protecting the environ-Correia Pinto (SC) ment, adopting procedures to prevent pollution, especially related Correia Pinto Unit to water resources and solid waste. Continuous improvement in the effectiveness of the Quality Management System, environmental performance, health and safety is guaranteed through compliance with the Management Policy, consultation and participation of employees who make up the company. Capivari de Baixo - Consórcio (SC) • Capivari de Baixo Unit

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COAL SECTOR

7 AFFORDABLE AND

MINERAL COAL: For a safe present and a sustainable future

Several topics of the coal industry were highlighted in the press in 2021, through the movement "Mineral Coal: for a safe present and a sustainable future" - a communication plan whose purpose was to make the population aware of the importance of coal.

Criciúma Business Association (Acic), Tubarão Business Association (Acit), CDL of Criciúma, South Region Federation of Industries of the State of Santa Catarina (Fiesc), Federation of Business Associations of Santa Catarina (Facisc), and Interstate Federation of Workers in the Coal Mining Industry (Fitiec), with the support of the Criciúma Entities Forum (Forcri) and Fecomercio.

The movement was also one of the supporters of the Acic Journalism Award that, in 2021, had the special category "Thermoelectric Energy for Development". The goal was to show, through articles and reports, the importance of coal as a source of safe electricity and as a driver of socio-economic development.



PARA UM PRESENTE SEGURO E UM FUTURO SUSTENTÁVEL

FAIR ENERGY TRANSITION

An important topic that marked the year 2021 in the South of Santa Catarina is even more present in 2022 and should become effective in the coming years: the Fair Energy Transition. The theme establishes the conditions for the Jorge Lacerda Thermoelectric Complex, located in the city of Capivari de Baixo (SC), to operate until 2040.

In this period of a little less than two decades, the Southern Catarinense region must develop new technologies and adapt to a low carbon economy. It is a guarantee that the coal sector will be able to sustain the economic, social and environmental commitments associated with the continuity of the production chain.

The Fair Energy Transition is also a kind of "insurance" for society, since coal-fired generation helps to ensure the availability of energy when hydroelectric and other renewable sources, such as solar and wind, are in short supply. Without this, more expensive energy sources would have to be used. Power generation through mineral coal represents a strong socioeconomic impact. In Southern Catarinense, it includes coal mines, railroads, thermal power plants and cement production, involving 15 municipalities. The sector generates more than 20 thousand jobs and a financial turnover that reaches R\$ 5 billion per year, being directly associated with the development of the region.



We are talking about a transition with investments in more efficient thermoelectric plants, with less emissions, with a focus on coal by products and a public policy for the sector.



Fernando Zancan - president of the Brazilian Association of Mineral Coal (ABCM).

SUSTAINABLE DEVELOPMENT GOALS (SDG)







Rio Deserto receives SDG Seal and Ragro is presented as a new signatory

Rio Deserto received the SDG 2022 Seal and Ragro Mineral Solutions became a signatory company of the National Movement SDG SC.

The renewal of the SDG Seal demonstrates the commitment to sustainable development of Southern Catarinense and the actions that promote improvement in the quality of life of society. To obtain it, Rio Deserto responded to the 2021 report, indicating the actions taken during the year, as well as the connection of the practices with the Sustainable Development Goals. Ragro, for having joined the movement recently, will present a report of activities in early 2023. Rio Deserto has been a signatory of the National SDG Movement in Santa Catarina since 2020, and is the first coal company in the South of Santa Catarina to be part of the movement. The industry's engagement is of fundamental importance to accelerate and strengthen the corporate sustainability movement in the country.

> **Rio Deserto** has been an SDG signatory company since 2020.



Currently, Rio Deserto and Ragro maintain several actions connected to the SDGs, with emphasis on the following:



ABOUT SDG

The National Movement SDG Santa Catarina is a social movement, of a nonpartisan, plural and ecumenical character. It aims to fulfill the commitments of the 2030 Agenda for Sustainable Development, approved by the member countries of the United Nations (UN) during the 70th General Assembly held in 2015 in New York.

The action plan of the 2030 Agenda encompasses 17 Sustainable Development Goals (SDGs), divided into 169 goals, which seeks to build a better society, socially inclusive, environmentally sustainable, and economically balanced.

Currently, in Santa Catarina there are more than 1.2 thousand signatories of the SDG Movement, among companies, individuals, class organizations, civil society organizations, educational institutions and public authorities, distributed among 94 municipalities and articulated in 14 committees. The SDG Criciúma Committee is composed of 63 signatories.

BENEFITS

GOOD HEALTH

DECENT WORK AND

Agreements with clinics and laboratories, with universities and language schools, health plan, life insurance, transportation and food vouchers are some of the benefits that Rio Deserto offers to its collaborators. Through partnerships, the company assures that the workers have access to quality services.



Agreement with clinics and laboratories

Rio Deserto has an agreement with clinics and laboratories. The benefit facilitates the access of collaborators and their families to medical exams and guarantees more affordable prices. An example of this is the partnership with psychological and odontological clinics, among others.



Periodic exams

Periodically, employees from Rio Deserto's production units take exams that correspond to their function.



Internal medical assistance

There is medical assistance at Rio Deserto's units. Prevention and awareness actions are carried out, as well as consultations, referrals to specialists, periodical exams, vaccines and others.



Health insurance

Rio Deserto offers its collaborators a health plan and helps paying the monthly fees, with support that varies from 30 to 70% of the amount, depending on the salary range.



Milk

All the collaborators at Rio Deserto receive 24 liters of milk every month.



Life Insurance

Rio Deserto's collaborators can have life insurance. The company contributes with 50% of the monthly fee, the rest being discounted from the payroll.



Acicard Card

The Acicard Card is exclusive for the purchase of medicines and is available to Rio Deserto's employees. The expenses are discounted in the payroll.

Meal at the company

At Rio Deserto's productive units meals are served that are produced by industrial kitchens, according to nutritionist orientations. The company contributes with 80% of each meal, the rest being discounted from the payroll.

Food Voucher

Rio Deserto's collaborators receive a food voucher during the month of vacation. The benefit only applies to the units that follow the coal extraction industry workers' convention.

Uniform

The use of uniforms is mandatory in Rio Deserto's production units, guaranteeing standardization and organization. The uniform is supplied by the company.

Transport

Rio Deserto provides transportation to the collaborators of the productive units. The vehicles follow previously established routes.

Partnership with universities and language schools

Aiming to facilitate the access of collaborators and their dependants to private universities and language schools, Rio Deserto has an agreement with several teaching institutions. The action reflects the company's commitment to encourage continued education. Through this benefit, special discounts are granted.



PRODUCTS



Energy Coal

Used in thermal power plants, as a fuel (heat source), to generate electricity. It is obtained after processing the ROM (raw coal). Throughout the process the levels of ash, sulfur, volatile matter and calorific power are adjusted to the granulometry, always in accordance with the demands of the market.

Pyrite (Iron Sulfide)

Used to correct the sulfur content in cast iron, as a source of sulfur. It results from the selective beneficiation of mineral coal.

RD Flux Agents

Foundry and fluxing minerals have the purpose of lowering the melting point, through the formation of eutectic compounds. RD Flux Agents increases the mechanical resistance and the densification of the material in which it is applied. It is used in the ceramic industry with the function of giving shine, transparency, densification and control of dimensional variation. In the steel industry, its function is to fluidify slag, replacing fluorite.

PLANT PROTECT

Gran Protect Max

The exclusive formulation of **Gran Protect Max** promotes the activation of the **defense artillery** of the plants, improving the health of the crop and increasing profitability.

Benefits

- Potentiates fungicides;
- More efficiency in disease control;
- Less defoliation;
- Reduction in forced maturation;
- More weight of one thousand grains (PMG);
- Proven use in soybean, corn, beans and rice.

MAPA Registration: SC 001685-3.000004



SUSTAINABILITY REPORT 2021





Gran Start Mn+

Gran Start Mn+ supplies manganese at critical moments in the beginning of the cultures. It promotes the nutritional balance and potentiates the defense mechanisms of the plants.

Benefits

- Contributes to detoxifying plants loaded with ROS (reactive oxygen species);
- Stimulates vegetative development;
- Important for the process of photosynthesis;
- Favors the development of roots;
- Promotes the production of specific enzymes;

More efficiency in disease control.

MAPA Registration: SC 001685-3.000003



Induktor Si+

It is a certified product for organic agriculture. The combination of elements provides more resistance to diseases.

Benefits

- Increase in the productive potential of plants;
- Acts in nitrogen fixation and protein metabolism;
- More tolerant and prepared plants for biotic and abiotic stresses:
- Sulfur supplementation;
- Increase in photosynthetic efficiency.

MAPA Registration: SC 001685-3.000002



Suitable input for use in organic production. Use subject to the criteria of each organic regulation, according to the respective certificate issued. Inspected by Ecocert.











Protetox Afla

It is a mycotoxin adsorbent additive, composed of calcium and sodium aluminosilicate, tested in vivo for poultry and pigs. A natural product that, when used in feed, is capable of forming a highly stable complex with the mycotoxins. When ingested by the animal, it adsorbs and retains the aflatoxins, inhibiting absorption before they reach the bloodstream, and the toxicity is eliminated in the feces. Protetox Afla allows the best use of the nutrients, reflecting on the productive performance of the animals. The product has no odor or flavor.



PROMOTI

Notox

Notox products are intelligent adsorbents developed from a careful selection of mineral technologies. Added to the feed and intended for all animal species, they are strategically developed to perform a fast and efficient adsorption of mycotoxins. Solutions composed of synergistic technologies that provide extreme capture of mycotoxins at stomach pH and mechanisms that prevent this bond from being broken at intestinal pH. They do not adsorb nutrients and vitamins, nor do they cause negative impacts on food.

The Notox line is the result of more than 20 years of research and development, and the collaboration of more than five research institutes, which culminated in extremely efficient solutions, proven through evaluations conducted in vivo and in vitro. In all, five products are part of the line: Notox One, Notox Poultry, Notox LS, Notox Reproduction and Notox Swine.



Bugram Protect

The Bugram Protect is an anti-agglutinating additive recommended for formulations of products used in animal feed. It works on grains, bran and feed, removing moisture, acting as an anti-clogging agent (anticaking) and protecting against fungi and toxins. It is totally natural (organic input).



The Notox line is distributed exclusively by Cargill in Brazil and in the international market.

Notox One

- Intended for all animal species;
- Effective in combating fumonisins
 Additive adsorbent of mycotoxins of and aflatoxins;
- Composed by calcium and sodium
 Composed of special aluminosilaluminosilicate;
- It has a high cation exchange capacity, high swelling and more thixotropy, favoring the adsorption of mycotoxins;
- Adsorbs and retains the mucotoxins, inhibiting absorption by the oraanism.

Notox Poultry

- Product for poultries;
- broad spectrum;
- icates and organic additive, with proof in vivo;
- It adsorbs and retains the mycotoxins (zearalenone, aflatoxin, fumonisin, ochratoxin, T2 toxin and deoxynivalenol);
- It has a wide adsorption capacity for polar (through cation exchange) and non-polar (through porosity and surface area) mycotoxins, generating more stability in the adsorption of mycotoxins with different molecular weights.



Notox Reproduction

- Product indicated for pigs in the reproduction phase;
- Additive of broad spectrum;
- Effective in combating mycotoxins such as zearalenone, aflatoxin, fumonisin, ochratoxin, T2 toxin and deoxynivalenol;
- With alkaline pH, the adsorption of Notox Reproduction begins in the mastication, passing to the stomach and then the small intestine of the animal, where it continues the chemical digestion and the adsorption of mycotoxins, preventing them from reaching the bloodstream.



Notox Swine

- Product indicated for pigs in the nursery stage;
- Composed of special aluminosilicates and organic additive;
- Product validated in vivo against the main mycotoxins that affect pigs in the nursery phase;
- Effective against fumonisin, aflatoxin, T2 toxin, zearalenone and ochratoxin.

Notox LS

- Wide spectrum anti-micotoxin additive;
- Effective against Fusarium Toxins (zearalenone, fumonisin and toxin T2), aflatoxin and ochratoxin;
- Composed of special aluminosilicates and organic additive, which facilitates the adsorption of apolar and polar mycotoxins.

INNOVATION AND **TECHNOLOGY**



COBUSINESS: CORPORATE INNOVATION PROGRAM

Rio Deserto started the activities of the Corporate Innovation Program (Cobusiness) in the second half of 2021. In the first stage, trainees got to know the company's structure, processes, products and services through visits to the units. They also participated in training and immersions about innovation. In the second stage, the young people identified more than 100 new business opportunities for Rio Deserto, and 15 were chosen for presentation. In the third stage, in 2022, some of the ideas are being selected and effectively developed.

The trainees (undergraduate scholarship students) work at Rio Deserto space, located at Satc's Cobusiness, full time in order to develop ideas and execute projects. The work is coordinated by professionals from the company and accompanied by masters and doctors from UniSatc.

The "innovation team", so named, is composed of trainees Eduardo Rocha (mechatronics engineering student) Emily Pinho Corrêa (design student), and Vinicius Chede (computer engineering student).

AGILITY AND EFFICIENCY IN ANALYSIS

In order to strengthen product development, promoting agility and efficiency in analysis, the RDLAB Laboratory Reference now has UHPLC equipment - High Performance Liquid Chromatography System, imported from Japan.

The equipment is used to evaluate the efficiency of adsorption of mycotoxins in the products of Ragro (Rio Deserto Group company in the agribusiness segment) and should leverage the development and innovation of products.









LEARN MORE!

Shimadzu Corporation, manufacturer of the UHPLC equipment, was established 1875 and is located in Kyoto, Japan. The brand is recognized for leading-edge science, technology and sophistication in analytical and measurement instruments, including chromatographs, spectrometers, and elemental and surface analysis systems.

EDUCATION

4 QUALITY EDUCATION

SATC

The Santa Catarina Carbon Industry Beneficent Association (SATC) is a considered the "social arm" of the coal industry, because the education and technology campus is maintained via monthly contributions from the mining companies, in addition to student fees. The industry created and now maintains the institution.

Overall, about five thousand students (including part of them in socially vulnerable conditions) and 600 employees are part of Satc. The institution is a reference in Brazil and has an infrastructure focused on complete learning, offering from early childhood education to post-graduation. It also maintains the Technology Center, which operates in the area of scientific research, projects and laboratory services, bringing new perspectives to sustainable development.

SCHOLARSHIPS

Encouraging learning and contributing to people's development are the objectives of Rio Deserto's practices associated with education. The company offers scholarships and agreements/partnerships with educational institutions to employees and employees' children, facilitating access to quality education.

All requests are examined according to pre-established criteria. In case of a collaborator's request, the importance of the education is evaluated taking into account the needs demanded by the company.

> Amount invested in education by Rio Deserto in 2021: **R\$ 1.936.091,76**



TRAINEE PROGRAM

Growth and opportunities have further consolidated Rio Deserto's Intern Program in 2021. Throughout the year, the company provided 87 trainees (mandatory and non-mandatory). Compared to 2020, there was an increase of 50% in the number of trainees. Understanding trainees as an educational act and a qualification formation between theory and practice, Rio Deserto provided 22 mandatory trainee bonds to its employees, providing the opportunity for professional qualification.

Getting to know a New World, through experience.



The Rio Deserto Trainee Program exists for almost 15 years and aims to identify potential talents, strengthening the practice of responsible trainee, contributing to the professional and personal development, and ensuring opportunities for growth.

The Rio Deserto interns are paid and are entitled to benefits such as transportation vouchers, meals, health plan and others. They also participate in training, campaigns and internal programs, acquiring knowledge and technical and behavioral competencies.

> In 2021, Rio Deserto provided **87 provided 87 trainees.**





TARGET AUDIENCE

Students in high school, technical or undergraduate studies, in several areas.

Satc Work Week

Rio Deserto was one of the companies participating in the 3rd edition of the Satc Work Week, a "job marathon" promoted by Satc in 2021. The educational institution's proposal was to bring students and the business sector closer together. After presenting the company and talking to students from the final stages of technical and undergraduate courses, Rio Deserto received more than 60 resumes.





TRAINEES MEETING

Emotional Intelligence has been the theme of the 9th Meeting of Rio Deserto's trainees. The action, coordinated by the Human Resources department of the company, was supported by the Euvaldo Lodi Institute - IEL/FIESC and was also an opportunity to celebrate the Trainee's Day (August 18th). During the lecture, it was mentioned how the emotional competencies are indispensable in the day to day professional life.

Trainee Supervisors Meeting

The theme "Trainee laws and the supervisor's responsibilities" marked Rio Deserto's Trainee Supervisors Meeting 2021. The training was given by IEL (Euvaldo Lodi Institute) instructors, Taise de Oliveira and Mayara Leris. The action is part of the Human Resources department's calendar, and is carried out in partnership with FIESC (Federation of Industries of the State of Santa Catarina), Southern Regional.

The Trainee Supervisors Meeting promotes reflection and understanding of the role of the trainee supervisor on a daily basis, for the professional training and development of the interns.

YOUNG APPRENTICE

In 2021, the Young Apprentice Program, at Rio Deserto, started to count on 18 new members. They are taking the technical course in mechanics or the technical course in automotive maintenance, and will receive a certificate in the production line feeder course. They also have benefits such as registration in the work contract for a period of 24 months, transport vouchers, and remuneration according to the legal provisions. The theoretical and practical activities take place, exclusively, at Satc, from Monday to Friday.

PERSONAL AND PROFESSIONAL DEVELOPMENT PROGRAM

Employees from the Correia Pinto Unit participated, in 2021, in Rio Deserto's Personal and Professional Development Program. The objective was to strengthen the organizational culture. Themes such as safe behavior, interpersonal relationship and time management were the main highlights. The training was organized by the Human Resources department in partnership with the unit's management.





TRAININGS AND CONFERENCES

8 ECONOMIC GROWTH

MANAGEMENT AND ENTREPRENEURIAL EXPERIENCE PROGRAM (PGVE)

The first class of the Management and Business Experience Program (PGVE), promoted by the Criciuma Business Association (Acic), had the participation of professionals from Rio Deserto. The activities took place in 2021. In all, there were eight modules related to fundamental areas for companies, all with a 12-hour workload.

The electric engineering coordinator at Rio Deserto, Elton Luis Martins; the supply and logistics coordinator, Odinamar Silva da Costa; the manager of the Extraction Unit 101 Mine, Fabio Vanzeloti da Rosa; the manager of the Extraction Unit Cruz de Malta Mine, Lander Gabriel De Bona; and the manager of the Metallurgical Unit, Felipe Possamai Mota, participated in the PGVE. The PGVE modules dealt with the following topics: Leadership and Goals, People Management, Commercial Intelligence, Business Strategy, Financial Management, Innovation in Organizations, Decision Making Models, and Business Sustainability.

The strategic training was developed in partnership with the Federation of Business Associations of Santa Catarina (Facisc), Foundation Empreender and UniSociesc. The modules were taught by renowned professors with knowledge, experience and performance in the national and international markets, in their respective areas of specialization.



V Meeting of Mining Engineers from Santa Catarina

Professionals from Rio Deserto participated, in 2021, in the V Catarinense Meeting of Mining Engineers. The event was promoted by Santa Catarina Association of Mining Engineers (Acem) and was supported by the Regional Council of Engineering and Agronomy of Santa Catarina (Crea-SC).

In the program, the participation of the National Mining Agency (ANM), the Brazilian Association of Mining Engineers (Abremi), the Union of Coal Extraction Industries of the State of Santa Catarina (Siecesc), and educational institutions such as Satc, the Federal University of Rio Grande do Sul (UFRGS), the University of São Paulo (USP) and the Federal University of Catalão - Goiás (UF-CAT) were highlighted.

VI Brazilian Congress of Mineral Coal

Two projects of Rio Deserto were presented during the VI Brazilian Congress of Mineral Coal (CBCM). The event, with the theme "Challenges for the sustainable development of the production chain of Mineral Coal", took place in 2021, gathering renowned researchers and representatives of the industry and agencies.

The Rio Deserto projects presented during the Congress, "Challenges in the opening of the mining enterprise: ten years after the operation of Mine 101" and "Automation as a tool for environmental monitoring", were written by the engineers Rosimeri Venâncio Redivo, Felipe Medeiros Bertoncini, Suélen Zanin Manfioletti and Taise Cancelier.

One of the highlights of the meeting was the debate about mineral coal. In the opportunity, studies were presented showing that it is possible to give an appropriate destination to the waste generated in the process, transforming waste into alternative products for civil construction, agribusiness and others.



HEALTH

3 GOOD HEALTH AND WELL-BEING

-/4/÷

FLU VACCINE

More than 400 employees from Rio Deserto received the trivalent flu vaccine in 2021. The action, promoted by the company's medical department, had the support of SESI (Social Service of Industry). Every year, Rio Deserto offers free immunization to its employees.



In 2021, more than **400 employees** were vaccinated against the flu.



COVID-19 VACCINATION

Following the guidelines of the Ministry of Health and the Santa Catarina State Department of Health, Rio Deserto's medical department carries out actions to mitigate Covid-19 and encourages the vaccination of employees and their families. As provided in the Medical Control of Occupational Health Program (PCMSO), the goal of internal campaigns for vaccination, as well as monitoring the application of vaccines, is to monitor immunization, acting to promote the collective protection of employees.

By December 2021, Rio Deserto (Carboniferous Industry and Brazilian Mining & Research) had a wide vaccination coverage, covering more than 97% of the total of 687 employees (1st dose).

COVID-19: Accompanying employees and their families

The Covid-19 pandemic has brought insecurity to the entire population. To ensure more confidence for Rio Deserto's employees and their families, in 2021, the medical department continued to work both to mitigate the virus, with preventive measures and awareness, as well as in the care and monitoring of employees. The tests, as well as the monitoring and on-site assistance, have guaranteed more safety for everyone.

STI PREVENTION

The STI (Sexually Transmitted Infections) prevention campaign is traditionally held in Rio Deserto units and aims to inform and motivate employees to adopt healthy habits, behavior and living conditions. The action is coordinated by the medical department. In the activities, the methods of STI prevention are highlighted, as well as the importance of preventive examinations and the attention to the complete vaccination scheme for Hepatitis B and HPV.

INCENTIVE TO THE PRACTICE OF PHYSICAL ACTIVITIES

The World Physical Activity Day (April 6) and the World Health Day (April 7) were themes of the DDSS (Daily Health and Safety Dialog) at Rio Deserto's units. The objective of the company's medical department was to make employees aware of the importance of practicing regular physical activity.

The campaign took into account the WHO (World Health Organization) guidelines for physical activity and sedentary behavior, as well as the Global Action Plan for Physical Activity (2018-2030), which points quantitative references in order to help promote a healthier lifestyle. According to data, for an adult person, the recommendation is at least 150 minutes per week of moderate physical activity (cycling, walking, or dancing) or 75 minutes of vigorous intensity activity (swimming, running, skipping rope, and others).



GOOD BLOOD FRIEND PROGRAM

Rio Deserto makes its employees aware and encourages them to donate blood. Throughout the year 2021, more than 80 people (among Rio Deserto's employees and employees' family members) sought Hemosc to make a donation through the Good Blood Friend Program. In all, there were 75 effective donations and a 30% increase in the number of donations compared to the year 2020. Since the beginning of the Good Blood Buddy Program in 2016, more than 300 donations have already been made by collaborators and family members, mentioning Rio Deserto as a promoter of the action.

The objective of the Friend Blood Program is to encourage the voluntary action of blood donation by employees and family members, motivate the practice to be periodic and contribute to meeting the demand of health treatments for those who need it. It also aims to inform about the donation procedure and raise awareness about the social importance of the solidary gesture. Currently, 144 employees of Rio Deserto are blood donors. The actions are intensified, especially in June and November, when the World Blood Donor Day and the National Blood Donor Day are celebrated, respectively.









More than **300 blood** donations have already been made.



White January

Mental health care is reinforced at the beginning of the year with the White January Campaign. To mark the movement, Rio Deserto disseminates knowledge to collaborators through videos, posters and other forms of communication. The objective is to make people aware of the care with emotions, feelings, behavior and relationships.

Pink October

Pink October, a month to raise awareness about breast cancer, was marked in 2021 by the delivery of flowers and pink ribbons to employees of Rio Deserto. Information was also passed on via WhatsApp to everyone who is part of the company, in order to extend awareness to the families of employees.

Blue November

The Blue November campaign, to raise awareness about men's health, was the highlight in 2021, at Rio Deserto's units. The company's medical department provided orientation about nutrition, vaccination, physical exercises, periodical health exams and habits that are harmful to health. It was also made available the measurement of some indicators such as Body Mass Index (BMI), abdominal circumference, glycemia and blood pressure.

Red December

The Red December Campaign, to raise awareness about AIDS and Sexually Transmitted Infections (STIs), is held every year in Rio Deserto. The objective is to promote employee awareness. In 2021, the company distributed condoms and informative material, encouraging the prevention of HIV/AIDS and other diseases.

SAFETY



SIPAT/MIN 2021

"Pie in the face" dynamics, phrase contest, practical activities and a visit to the Civil Police Aeropolice Service (SAER) base were the highlights of SIPAT/MIN 2021 (Internal Week for the Prevention of Accidents in the Mining Workplace), held in Rio Deserto's units. The action highlighted the importance of health and safety in everyday life, promoting knowledge and integration among employees.

The culture and value of work safety are increasingly present in the daily life of Rio Deserto. The good results achieved in 2021 demonstrate the company's evolution and motivate for the next investments.



ELECTRONIC WORK PERMIT

The implementation of the electronic Work Permit system completed one year at Rio Deserto in 2021. The project, developed by the Information Technology (IT) and Work Safety departments, consists of a tablet application, which replaced the printed documents that were used daily to perform tasks. Besides reducing bureaucracy, the system has generated benefits for the company, among them the significant reduction in the use of paper, as well as the mitigation of possible incidents/accidents.

The project's implementation was somewhat challenging, in view of the amount of information, the remote use underground, the manpower, as well as the various particularities among the group's units. The pilot project started at the Extraction Unit Cruz



de Malta Mine and already covers the Extraction Unit 101 Mine, among other units of the group. In all, there are 30 tablets in activity and there is still potential for expansion.

The Work Permit (PT) is a legal item dealt with in several Regulatory Norms of Work Safety. At Rio Deserto, the use of PTs began in 2008, in physical form. At the Extraction Unit Cruz de Malta Mine, where migration to the digital system began, the reduction in paper consumption was very significant. By the end of 2021, the unit will no longer use 50,981 sheets, which is equivalent to 100 reams for the Work Permit demands.

For professionals, digitalization represents convenience and agility

For the professionals who work daily with Work Permits, the migration from the physical system to the digital one represented convenience and agility of processes. There was a reduction in the administration of the permits, a reduction in paper consumption, in the time required for filling them out, and in the traceability of the information.

EMERGENCY SIMULATIONS

During 2021, emergency drills were carried out in Rio Deserto units based on the Severe and/or Fatal Accident Emergency Plan (PE 504) and the Fire Fighting Emergency Plan (PE 508). The objective was to keep the employees' attention on the existing risks, preparing them for an eventual attendance and, mainly, for the frequent performance in prevention.

In emergency drills, the safety team previously evaluates the scenario and the action to be performed, in order to ensure the physical integrity of everyone involved. Training and emergency drills are practiced periodically in order to train employees, and are considered essential for risk management within the company.

Among the aspects observed in the drills, the following stand out communication and leadership, action plan performed by the brigade members, supervisors and other employees, use of the rapid escape mask, transportation of the victim underground, breaking of siding and closing of the circuit-cutting curtain (changing the ventilation flow), and development of a safe shelter.

TRAINING ABOUT DAMS

The Emergency Action Plan for Mining Dams (PAEBM) was the theme of a simulation carried out at the Extraction Unit Cruz de Malta Mine. The training brought together employees who are part of the Emergency Brigade and others who work on the surface and in the beneficiation plant.

The drill started with a theoretical exposition, in which the dam's structures, the inspection procedures, and the actions in

SOUTH AEROMEDICAL ASSISTANCE AND RESCUE SERVICE (SARASUL)

The Serviço de Atendimento e Resgate Aeromédico do Sul (Sarasul), which operates in the Southern Santa Catarina region, is also available to companies. In 2021, the work safety engineer of the Extraction Unit 101 Mine, Rafael Bortolotto, visited the facilities, in Rio Maina District, in Criciúma.

Besides the presentation of the aircraft and all the available equipment, aspects such as speed of displacement and the specialized emergency response team were also mentioned. In Rio Deserto, there is a strong action in accident prevention, with training and simulations involving the collaborators. The

NR 35

More than 100 employees of Rio Deserto participated, in 2021, in the NR35 (working at height) course. Among the topics covered, risk analysis, equipment inspections, anchoring systems and rescue were the highlights. The intention was to recall basic concepts and techniques when it comes to safety procedures related to working at height. The training, theoretical and practical, lasted eight hours. The training aims to guarantee the employees safety and health.



case of emergency were presented. Next, the emergency siren was activated, and the evacuation procedures for the Self-Salvation Zone (SSA) were followed.



possibility of counting on Sarasul's support is an important reinforcement to guarantee efficiency in possible emergency situations.



EMERGENCY BRIGADES

Safety is a priority in Rio Deserto. In all the company's units, there are collaborators periodically trained to act in the prevention of accidents and to intervene in situations of risk and urgency. The qualification of the Emergency Brigade is the responsibility of SESMT (Specialized Service in Safety Engineering and Work Medicine) and complies with the Regulatory Norms. The brigade members and employees participate in periodic simulations and also act as multipliers of concepts of good safety practices, inside and outside the organization.

DDSS

At Rio Deserto's production units the Daily Health and Safety Dialog (DDSS) is held. The action gathers the collaborators at the beginning of their shift for a brief conversation about communication, team work, leadership, safety, valuing time and other topics.

In all of the company's units there are employees trained to act in the **prevention of** accidents.



TRAINING AND DEVELOPMENT

In 2021 Rio Deserto continued its training and internal development programs.

In all, 63,611.85 hours of training were given to employees, including all internal and external courses (online and in person). Among the main ones, we highlight the instructions for work procedures (operational), regulatory standards (NRs), Daily Health and Safety Dialogues (DDSS), health campaigns, instructions related to the environment, training and recycling of fire brigades, leadership development, training, workshops, lectures and others.

SPECIFIC QUALIFICATIONS

Job-specific qualifications and training are internal movements that foster labor force and value employees through promotions.

Specific training

Aims to train the employee admitted to a certain function (with the supervision and guidance of other experienced and skilled professionals).

Unity	Specific qualification for the job (total hours)	Training and development (total hours)
Extraction Unit Cruz de Malta Mine	23.224,97	30.182,34
Extraction Unit 101 Mine	41.968,24	21.156,73
Extraction Unit Novo Horizonte Mine	400,00	972,28
RD Engineering	400,00	211,23
Metallurgical Unit	3.920,00	3.975,40
Laboratory Reference	2.295,65	860,44
RD São Geraldo	1.840,00	350,35
Boarding Box	400,00	160,75
Unit Correia Pinto	6.400,00	2.470,73
Central Office	2.240,00	2.370,01
Unit Ceramics	160,00	130,30
Central Office	0,00	771,29
TOTAL	83.248,86	63.611,85

Qualification for the function

Aims to train the collaborators with the objective of covering vacations (if necessary) and preparing them for future internal promotions.

PEOPLE VALORIZATION

8 ECONOMIC GROWTH

TALENTS RIO DESERTO

With the objective of identifying the collaborators' potential, preparing them for career opportunities by means of internal selection processes, rotation or succession plan, the program Rio Deserto Talents was created.

The first stage of the project comprises the application of a digital methodology that provides the mapping of the collaborators' profile. Next, the Human Resources sector provides feedback to management and also to the participants, on an individual basis. The activities are carried out in the units with the help of technology (tablets, notebooks and/or cell phones) and the answers are compiled instantly.

BABY RIO DESERTO

The Rio Deserto Baby Project began in 2019 and praises the importance of the company being present in such a special and remarkable moment in the lives of employees, which is the birth of their children. To welcome the newborns, the company gives them a personalized outfit with the phrase "My family is part of Rio Deserto". This action is a way of expressing the affection for the family of everyone who is part of the company. In 2021, baby clothes were given to 14 employees.

Valuing family is portrayed in Father's Day video

An unexpected connection, a letter at the workplace... These were some of the surprises prepared by children to surprise the fathers that work at Rio Deserto units. The moments were registered in a video, sent to all employees via WhatsApp application in the week of Father's Day 2021. During the Covid-19 pandemic, Rio Deserto used technology, such as videos and WhatsApp messages, to make tributes and other communications. The format allowed the company to continue expressing affection and promoting the appreciation of employees, especially on such special dates.

The script of the video highlighted several aspects of what it is to be a father and was interspersed with interventions through phone calls or letters sent by the children. In the case of the letters, the children also recorded the narrative, which made the material even more moving. There were also scenes recorded at the homes of the collaborators, portraying their family life together. At Rio Deserto, more than 400 workers are parents.

In celebration of Christmas, Rio Deserto distributed Christmas kits and cards









The Christmas and year-end mood took over Rio Deserto units in December 2021, when Christmas kits (thermal bag and Christmas bird) and cards were given to the company's collaborators. The action, coordinated by the Human Resources department, was a form of gratitude for everyone's dedication throughout the year.

VALORHUMANO PROJECT

In 2021, Rio Deserto honored 54 collaborators for their time of service, through the ValoRHumano project. In the company, the tributes for length of service begin when the employee completes 10 years of work. After that, they continue every five years, until retirement. The intention is to value the professionals.

VALORIUMANO

Due to the Covid-19 pandemic, the tributes took place in each of the company's units, in order to avoid crowds. In previous years (2017 to 2019), the event gathered all the honored employees, as well as their families, in a single celebration.

Honored employees

Central Office

Fernanda Lapolli de Biasi (10 years) Jaci Baggio Vieira (15 years) Daiane da Rosa Rabello (20 years) Edmilson Damásio (20 years) Luiz de Noni (25 years) Edvaldo Apolinário (35 years)

Industrial Complex

Evaldo José Biz (10 years) Gilmar Cittadin (10 years) Maicon Agenor de Freitas (10 years) Ariel Innocenti (10 years)

RD Engineering Anderson Naves Leão (10 years)

54 employees were honored in 2021.

Extraction Unit Cruz de Malta Mine

Lander Gabriel de Bona (10 years) Maycon Domingos (10 years) Cristiano Stangherlin (10 years) Diego Bernardo (10 years) Cleir José da Silva (10 years) Erick Spillere Baschiroto (10 years) Josias José Pedroso (10 years) Maicon Urbano Gomes (10 years) Marcelo Sangaleti (10 anos) Valdoni Piati (10 years) Eduardo José Consoni (10 years) Sandro Belcamino (10 years) Renato Morais (15 years) Jean Carlo Fernandes (15 years) Maikon Jhoner Cambruzzi (15 years) Volnei Pagani (20 years) Edson Savaris (20 years)

RD São Geraldo

João Hector Lopes Zanette (15 years) Ademir Pandini (30 years)

RDLAB Laboratory Reference

Taíse Cancelier Biz (10 years) Cleusa Maria Souza Ronsani (30 years) Rosimeri Venâncio Redivo (35 years)

Metallurgical Unit

Aguinaldo Kunhaski (10 years) Rafael Levati Montagnoli (10 years) Alcides Frasson Serafim (15 years)

Novo Horizonte Mine Unit

Edimilson Martinello (35 years) Ricardo Barbosa (35 years)

Boarding Box

Clesio Martinhago (20 years)





Extraction Unit 101 Mine

Clenio Padilha da Silva (10 years) Paulo Henrique Lemos (10 years) Erick da Conceição Gomes (10 years) Jeferson Bittencourt (10 years) Amarildo José de Oliveira (10 years) Marcos Pedro Martins (10 years) Elton Luis Martins (10 years) Jeronimo Guimarães Teixeira (10 years) Rafael da Rocha Mattos (10 years) Marcos Almeida (10 years) Rafael Borges Teodoro (10 years) Leonardo Stachowski Formanski (15 years) Joel Alves Oenning (15 years)

Correia Pinto Unit

Gilson da Cruz Lima (10 years) Antônio Carlos Padilha (25 years)

DESIGNING CHRISTMAS RIO DESERTO CONTEST

The 8th edition of the "Designing Christmas Rio Deserto" contest, held in 2021, had the theme "Christmas is Gratitude". In all, 52 drawings were entered, and two were chosen from each category (children aged 4 to 6, 7 to 9, and 10 to 12). All participants received a souvenir as a token of appreciation for their participation. The contest is promoted annually by the Human Resources department.



Winners 2021

Category 4 to 6 years old

Davi Nunes Sartor - son of employee Andrei Sartor (Ragro Mineral Solutions) Bernardo de Paula Damásio - son of employee Edmilson Damásio (Central Office)





Category 7 to 9 years old

Iago Piacentini Leandro - son of employee Juliano Pavanatti Salvato (Extraction Unit Cruz de Malta Mine)



Category 10 to 12 years old

Nicolas Serafim Soares - son of employee Douglas Zeferino Soares (Extraction Unit 101 Mine)



More than **50 drawings** were entered in the contest.



PEOPLE VALORIZATION

Arthur Bernardo dos Santos - son of employee Reginaldo Manenti dos Santos (Novo Horizonte Mine Unit)



Elen Catarini Pires Gomes - daughter of employee Maicon Urbano Gomes (Extraction Unit Cruz de Malta Mine)



ENVIRONMENT

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



MANAGEMENT OF GREENHOUSE GAS EMISSIONS (GHG)

Attentive to sustainability, Rio Deserto has started actions for the Management of Greenhouse Gas Emissions. The first step is to make an inventory of greenhouse gases. The work started at the Extraction Unit 101 Mine. Afterwards, the methodology will be applied in the other Rio Deserto units.

An internal committee was created to help implement and strengthen the program. In addition, a company was also hired to carry out the inventory and calculation of emissions. The work will be carried out in accordance with the Brazilian GHG Protocol Program, an internationally recognized tool for greenhouse gas accounting, applicable to any organization of all types of activities and sectors. A protocol that follows the principles of ISO 14064.

The management of greenhouse gas emissions is a global issue. Rio Deserto, for being committed to sustainable development, is following the movement, wants to quantify the emissions, as well as maintain and evolve initiatives and projects that provide mitigation of the effects.





TREE DAY

The importance of mineral coal and environmental care were subjects highlighted by Rio Deserto in a conversation with students from the Professora Maria Brogni Municipal Elementary School, located in Treviso, on the Day of the Tree (September 21), 2021. On the occasion, the company also distributed 130 native and fruit tree seedlings to the students.

The lecture "Mineral Coal, extraction process, sustainability and the SDGs" was given by Rio Deserto's environmental coordinator, engineer Felipe Medeiros Bertoncini. The presentation, with explanatory videos and demonstration of processes related to the treatment of effluents, contributed to the students' understanding. The company's attention to sustainability and practical actions, such as water reuse and solid waste management, were also explained.



ENVIRONMENT DAY

Rio Deserto has donated almost 700 fruit tree seedlings and landscaping to its collaborators. The action was allusive to the World Environment Day (June 5th). Besides adopting a plant, the employees left messages on bulletin boards, revealing what they do, on a daily basis, to preserve the environment.

In the sustainable attitudes, written by the collaborators on the murals, emphasis was given to saving energy and water, the correct separation of waste, reducing the use of cars, reducing the use of plastic packaging, among others. The notes served as inspiration for all employees to learn about and adopt good practices.



700 fruit tree seedlings were distributed to the collaborators.

SUSTAINABLE WATER MANAGEMENT

The preservation of springs, the treatment and reuse of water coming from coal mining, as well as the supply of treated water to agriculture and local industry are some of the actions developed by Rio Deserto regarding the sustainable management of water resources. The initiatives reinforce the company's commitment to the development of Southern Catarinense.

At Rio Deserto, the effluents from coal mining are treated by physical-chemical processes. The procedure, which includes techniques such as aeration, neutralization and sedimentation in waterproof basins, is carried out in the Effluent Treatment Stations (ETEs). The treated water is reused in underground equipment, cleaning and toilets. The surplus is also reused in the local industry and agriculture, fully meeting the requirements of the environmental legislation.

Monitoring

Rio Deserto has an Effluent Treatment Station (ETE) in the coal extraction units, treating effluents generated in the tailings deposit, underground mine and operational patio. It also has a system of decantation basins, whose function is to clarify the raw effluent before treatment, as well as to sediment the sludge of the treated effluent.

Aiming to improve the operational safety system of the ETE basins, the company invested in the development of specific software. The technology allows the technical team to monitor, in real time and from anywhere (remotely), the situation of the basins of the Extraction Unit Cruz de Malta Mine With this, it is possible to obtain the level of the basins, the pH reading of the treated effluent (every five seconds), and the control, by cameras, of the basins and the discharge point of the treated effluent into the receiving body (Mãe Luzia River).



Benefits for rice farmers and local industry

A study carried out at the Extraction Unit 101 Mine shows, by means of data survey and environmental monitoring, that the coal extraction process, when carried out in a managed way, with all the environmental care, does not interfere in the behavior of the local water resources.

Proof of this is that, before the implementation of the mining unit, the community suffered from a shortage of water to maintain local rice crops and industry (generally, they used dug wells). After the implementation of the mine, with the treated water coming from the mining, the local conditions of the community improved, and the rice growing areas were expanded. The local industry also started to use the water in its production process.



The water removed from the underground of Mine 101 comes from deep waters that infiltrate the rocks. The removal of water, using pumps (pumping), is inherent and mandatory to the activity of underground mining, which is performed in a non-flooded (dry) environment. The pumped water comes from the entire mining area and not from a specific point (it is not like a water catchment well). In the case of Mine 101, the aquifer recharge capacity in the mining area is higher than the pumping capacity. In Rio Deserto, 100% of the water is treated. Part of it is used in agriculture and local industry, and the surplus goes to the river that flows into the sea.



Recovery area located in the São Geraldo neighborhood, in Siderópolis.

Recovery area located in the Boa Vista neighborhood, in Criciúma.

ENVIRONMENTAL RECOVERY

The entire amount invested in areas impacted by mining has already resulted in environmentally sustainable conditions. Currently, some of these areas serve as green public spaces, safe, inclusive, and accessible to the entire population. This is the case of Parque dos Imigrantes, in the Rio Maina district, and Parque das Nações, in Próspera district, both in the municipality of Criciúma.

In a decade, Rio Deserto has recovered more than three million square meters (a good part of this territory was not part of the company's environmental liabilities). Besides the revitalization of degraded areas, the company also maintains native forest areas in the cities of Orleans and Siderópolis, in the South of Santa Catarina.

The environmental recovery methods used by Rio Deserto are based on criteria elaborated by the Technical Advisory Group (GTA). The techniques are the same as those applied in other parts of the world, such as soil conformation, clay sealing, the application of a layer of constituted soil and, finally, the introduction of vegetation. After the work, monitoring is still carried out, in order to certify the quality of the recovery and the balance of the ecosystem. The recovery process involves research and continuous learning, and a step-by-step process has been established: first soil recovery, then surface water, and finally groundwater. The goal of soil recovery is being achieved

SOLID RESIDUES

Rio Deserto makes the correct destination of waste through the Solid Waste Management Program (PGRS), implemented in all units. The initiative includes the collection of waste deposited in the selective collection garbage cans and sorting in the waste center, according to classification. Afterwards, the waste is sold to a licensed company. All waste generated in Rio Deserto units is tracked by means of traceability. The actions can be checked in the Waste and Reject Transport Manifest (MTR), in the Environmental Institute (IMA) portal.

For the PGRS to work, company and employees work together. The company identifies, quantifies and characterizes all the residues generated. It also has a system for collecting, handling and storing residues, so as to minimize the risk of accidents and and is already bringing positive impacts to the water resources as well.

contamination. The employees, in turn, participate in training and carry out selective collection. The result reflects in solutions directed to recycling, composting, treatment, and/or environmentally adequate final disposal.



ENVIRONMENTAL PROJECTS



IÇARA SWEETER PROJECT

Rio Deserto donated almost 25 thousand seedlings of honey eucalyptus, in 2021, through the Içara Sweeter Project. The action benefited honey producers who are part of the Içara Beekeepers Association (API), promoting one of the main economic sources of the city, which is the production of honey.

The Içara Sweeter Project exists since 2010, and is the result of a partnership between Rio Deserto and API. In addition to the donation of honey eucalyptus seedlings, the company also assists beekeepers with technical advice and guidance, monitoring the planting sites.

Almost **25 thousand** honey eucalyptus seedlings were donated in 2021.



FELINOS DO AGUAÍ NOW HAS AN ECOLOGICAL HEALTH PROGRAM

The scope of actions of the Felinos do Aguaí Institute has increased in 2021 with the inclusion of the Ecological Health Program, which aims to raise awareness about attitudes and practices related to the prevention of diseases transmitted by animals, also known as zoonotic diseases.

One of the program's initiatives is to offer free castration services for domestic animals such as dogs and cats in the communities surrounding the Aguaí State Biological Reserve. The goal is to prevent the increase in domestic animal populations around the protected areas, reducing predation, competition, and disease transmission to wild animals.

In 2021, 108 domestic animals were castrated in the municipality of Nova Veneza. The castrations were carried out in partnership with Unibave (Barriga Verde University Center) and support from the IMA (Institute for the Environment of Santa Catarina) - which provided financial resources for the action.

Through the project, more than **100 domestic animals** were castrated in 2021



Another initiative of the Ecological Health Program, of the Felinos do Aguaí Institute, is the vaccination of domestic animals, providing protection against diseases such as distemper, adenovirus, parainfluenza, parvovirus, coronavirus, leptospirosis and rabies. In 2021, 40 domestic animals were vaccinated in the municipality of Treviso. The monitoring of monkeys in the surroundings of the Aguaí Reserve is also carried out through the program.









Research and Environmental Education Programs

Besides the Ecological Health Program, implemented in 2021, the Instituto Felinos do Aguaí Institute also maintains initiatives related to the research and environmental education programs, as well as involvement with the communities.

In the Wildlife Research and Monitoring Program, the highlight of 2021 was the intensification of the wild feline capture campaign, with 35 field days and the participation of several veterinarians. The scientific breeding ground, built for animal rehabilitation, also received, in 2021, two wild felines, who had a new opportunity to return to nature.

In the Environmental Education Program, in turn, lectures and online lives were held, and experiences were shared, including with other countries such as Argentina and Paraguay. Attendances at educational institutions in all regions of the state were also carried out.

Rio Deserto has been a partner of Felinos do Aguaí since 2006

The Felinos do Aguaí Institute is a Civil Society Organization of Public Interest (OSCIP) dedicated to the conservation of wild felines in the Aguaí State Biological Reserve and surrounding areas. The project serves the municipalities of the Southern Catarinense coal region (Amrec) and has had a partnership with Rio Deserto since 2006, when it started its activities.





ANIMAL PROTECTION

With the purpose of restraining the abandonment of animals, signs were installed in the surroundings of Rio Deserto's Metallurgical Unit. The signs highlight Art. 32 of Law 9605/1998, which provides for a prison sentence of 2 to 5 years, a fine, and prohibition of keeping animals for people who abandon or mistreat them.

The intention is to promote awareness among everyone, employees and the community, as well as to contribute to eradicate animal mistreatment and abandonment.

SOCIAL PROJECTS



1 NO POVERTY

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2 ZERO HUNGER

Attention and support to communities are part of Rio Deserto's culture. With the Covid-19 pandemic, the company has intensified its actions, contributing to hospitals, nursing homes and charitable organizations. In 2021, the company also met the request of the Municipal School of Basic Education Dionízio Milioli, located in the Ana Maria neighborhood, in Criciúma, donating more than 500 squeezes (water bottles) for the students. Due to the Covid-19 scenario, several adaptations were necessary at the school for the resumption of activities, in order to mitigate the contagion. One of the requirements of the Contingency Plan for Education (Plan-Con Edu), from the municipality of Criciúma, was the prohibition to use the drinking fountains and taps, which were collective.

10 REDUCED

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17 PARTNERSHIPS



DONATION OF BLANKETS FOR NURSING HOMES

The winter got warmer for the elderly who live in the Rest Home Cantinho do Idoso and in the Feistauer Home for the Elderly, both located in Criciúma. This is because Rio Deserto delivered blankets collected during the company's internal campaign, some new and others in good condition. The donation was made in 2021.

SOLIDARITY MILK PROJECT

Almost 16 thousand liters of milk were donated, in 2021, through the Rio Deserto's Solidarity Milk Project, to families and charities located in the cities of the Southern Santa Catarina. This is the biggest quantity ever donated in one year, since the project started, in 2005.

The significant amount of milk donations is the result of the partnership between Rio Deserto and its employees. Every month,

Entities that will benefit in 2021

São Vicente de Paulo Asylum (Criciúma) Abadeus Charitable Association (Criciúma) Beneficent Association of Social Action for the Needy Community - Abasc (Criciúma) Associação de Pais e Amigos dos Excepcionais - Apae (Lauro Müller) Women's Association for Social Assistance - Afasc (Criciúma) Bairro da Juventude (Criciúma) Casa de Repouso Bom Jesus (Criciúma) Casa de Repouso Cantinho do Idoso (Criciúma) Casa de Repouso Vida Nova (Criciúma)

Casa Maria Tereza de Apoio a Pessoas com Câncer (Criciúma) Social Assistance Reference Center - Cras Santa Luzia (Criciúma) Reference Center for Social Assistance (Treviso) Reference Center for Social Assistance - Cras Vila Miguel (Criciúma) Sementes do Futuro Soccer School (Criciúma) Support Group for Families of the Assembly of God Church - Abecin (Criciúma) Nossa Senhora da Conceição Hospital (Urussanga) Home for the Elderly Feistauer (Criciúma) Social Pastoral (Içara) Dorcas Project - Assembly of God (Lauro Müller) Mover das Águas Project - Casa do Pai Community (Criciúma)

SUSTAINABILITY REPORT 2021

each Rio Deserto employee receives 24 liters of milk and can choose to donate a portion. Since 2015, when the project completed ten years of existence, the amount donated by employees is always reinforced by the company, which contributes the same amount. Thus, if employees donate 100 liters of milk in a month, the company donates another 100 liters, making it possible to contribute to more families and entities periodically.

ENTITIES AND COMMUNITIES

Actions focused on solidarity have always been a constant at Rio Deserto, supporting several projects throughout the region. The organization's responsibility can be identified in cultural, educational, and social activities maintained in the year 2021.



Criciúma Futsal Association

The Criciúma Futsal Association serves around 100 children and teenagers in its basic and educational sports centers, with categories ranging from U-08 to U-14. It also has performance teams, with athletes in the categories under-15, under-16, under-17, under-18, and under-20, who compete in state and national championships, representing the municipality.

Bairro da Juventude



Bairro da Juventude supports around 1.5 thousand children, teenagers and young people from Criciúma and region, enrolled in programs that range from early childhood education to professional training. Rio Deserto believes in the institution's commitment to the South of Santa Catarina and has been supporting it for several years.



RASKETBAI

SATC/FME

Women's Basketball - Municipal Sports Foundation (FME) of Criciúma/Satc

To contribute to the moral and ethical formation and provide opportunities for the emergence of talents in sports and in life. This is the goal of the Criciúma Women's Basketball team. The training takes place at the Santa Catarina Carbon Industry Beneficent Association (SATC). The team has athletes in the categories Under 12, 13, 15, 17, 19 and adult. Besides participating in championships and winning titles, the team has social purposes, such as reducing school drop-outs, teaching children ethical and moral values through sports, and keeping children and teenagers away from violence and drugs, among other initiatives.

Apae Criciúma

Rio Deserto contributes to Apae from Criciúma through monthly financial support. The partnership has existed since 2017. Currently, Apae Criciúma serves nearly 300 students, from newborns to people over 60 years old. The entity provides education, health and social assistance services, constituting a network for the defense of the rights of people with intellectual and multiple disabilities.

Abadeus

Rio Deserto was a partner, in 2021, of the Abadeus Explorers Program, from Criciúma, which covers around 60 children and teenagers in situations of social vulnerability. Among the activities developed, we highlight the workshops on sports, English, music, citizenship, technological education and entrepreneurship, storytelling, audiovisual and photography.

Judecri



The Association for the Physically Disabled of Criciúma (Judecri) is philanthropic and focused on a single objective: social inclusion. The entity was founded in 1981, defends the rights of people with disabilities, integrating them by means of actions related to sports, culture and leisure. Because it understands the relevance of Judecri to society, Rio Deserto maintains a monthly financial support to the institution.



Triathlon School - Mampituba Recreational Society



In 2021, Rio Deserto started supporting the triathlon school of the Mampituba Recreational Society. Currently, the group is formed by 45 athletes, aged between 7 and 23 years old. The members aged 16 and up are also part of the Club's performance team and participate in the entire Santa Catarina Triathlon Circuit, as well as in Brazilian championships. Besides bringing children and teenagers closer to the sport, the triathlon school also aims at training athletes.

Encantos do Sul Environmental Park

Rio Deserto is a "Friend Company" of the Encantos do Sul Environmental Park, located in Capivari de Baixo (SC). The monthly financial support is destined, mainly, to environmental education projects.



The Encantos do Sul Environmental Park was inaugurated in October 2013 and has 35 hectares of green area. The space is managed by the Jorge Lacerda Association (AJL), composed of higher education institutions (University of Southern Santa Catarina - Unisul and Capivari College - Fucap), organized civil society (Association of Employees of Tractebel Energia and Eletrosul - Ases and Association of Municipalities of the Laguna Region - Amurel), as well as the private institution Engie Brasil Energia. The Park's mission is to stimulate environmental education and offer culture, leisure, and entertainment to the community, bringing together large audiences, especially on weekends.

Show de Bola Institute



The Show de Bola Institute is a social, sports, and cultural initiative that fosters education and promotes healthy integration among people, encouraging respect and good daily practices. The entity assists children and teenagers aged between 7 and 16, regularly enrolled in public schools, residents of communities such as Ana Maria, Vida Nova, and others in the surrounding areas, in the city of Criciúma. Among the workshops offered are soccer, volleyball, table tennis, music, and others. The monthly contribution granted by Rio Deserto helps maintain the project.



CERTIFICATIONS



CERTIFIED MANAGEMENT SYSTEM

Rio Deserto is the first coal producer in Southern Santa Catarina with certification in the three management standards: ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and ISO 45001 (Occupational Health and Safety Management).



NBR ISO 9001:2015

Extraction Unit 101 Mine Extraction Unit Cruz de Malta Mine Novo Horizonte Mine Unit RDLAB Laboratory Reference Correia Pinto Unit



NBR ISO 14001:2015 Extraction Unit 101 Mine Extraction Unit Cruz de Malta Mine Mina Novo Horizonte Unit



NBR ISO 45001:2018 Extraction Unit 101 Mine Extraction Unit Cruz de Malta Mine Novo Horizonte Mine Unit



M٨

MAPA

RDLAB Laboratory Reference is registered with the Ministry of Agriculture, Livestock and Supply (MAPA) as a provider of laboratory analysis services in the area of fertilizers, inoculants and correctives.

IMA

The RDLAB Referência Laboratorial also has the Certificate of Laboratory Recognition for Water and Wastewater Analysis, from the Environmental Institute of Santa Catarina (IMA).

GMP + B1

Ragro Mineral Solutions is certified GMP+B1 Production, trade and services (GMP - Good Manufacturing Practive). This is an internationally known acronym for the identification seal of a Quality Assurance Certificate that regulates the chain of inputs for animal feed. The recognition guarantees that the industry maintains controls so that the products are free from contamination of any physical, chemical and/or biological nature.

Ecocert Certification

The Ecocert Certificate of Conformity is focused on the commercialization of organic products. Ecocert is an inspection and certification body founded in France in 1991, whose aim is to guarantee and highlight the best environmentally correct and socially aware practices.

ECOCERT

NSUMOS

RECOGNITIONS

23rd Brazilian Mining and Metallurgical Industry Excellence Award

Betting on safety, technology and innovation, Rio Deserto has won the 23rd Brazilian Mining and Metallurgical Industry Excellence Award 2021, standing out once more among the big mining companies in Brazil. The winning project, "On-line emergency control system", implemented in the Extraction Unit Cruz de Malta Mine, provided improvements to the company's Emergency Assistance Plan (PAE). With this award, Rio Deserto adds nine years of recognition in the Brazilian Mining and Metallurgical Industry Excellence Award, with titles won between 2010 and 2021.

Considered an icon of the Brazilian mining and metallurgical industry, the Excellence Award recognizes the best technologies, processes and concepts applied in mining companies all over the country.

Winning project improved the Emergency Response Plan (ERP).



ABOUT THE PROJECT

The project "On-line emergency control system", from Rio Deserto, was developed to interconnect the monitoring and control tools in order to help in possible accidents and/or emergencies. This allows, besides the visualization of emeraency alarms, the interaction and execution of commands in the process, having in mind the fast resolution and the minimization of impacts. Everything is done by means of computers and smartphones.

The monitoring and interventions in immediate connection with the main emergency control devices facilitate the emergency management process, especially in a preventive character.

ADVB/SC 2021 CITIZEN COMPANY AWARD

Rio Deserto has won the ADVB/SC 2021 Citizen Company Award, in the "Environmental Preservation" category, with the Sustainable Forest Planting project. This is the 7th time the company has been recognized. In all, 36 companies from Santa Catarina submitted cases, and 18 were chosen.

The Sustainable Forest Planting project is developed on land located in the municipalities of Orleans, Siderópolis, Treviso, and Urussanga, in the South of Santa Catarina. The goal is the production of sustainable wood through the planting of fast-growing exotic species, as well as soil recovery (through silviculture techniques).

The planting and management of the forest aim to respect the forest code and the current legislation, in order to protect the springs, the local vegetation, and especially the native forests. The project also contributes significantly to the capture and consequent reduction of carbon dioxide in the region, fundamental in the mitigation of greenhouse gas emissions.

The ADVB/SC Citizen Company Award honors companies from Santa Catarina that make social responsibility their best example, product and result.



Today, Rio Deserto has more than 8 million square meters of Permanent Preservation Area (APP). A recognition like this underscores the significance and relevance of the work that is done.



Edvaldo Apolinário - Administrative Manager of Rio Deserto



IEL'S INTERNSHIP CHALLENGE 4.1

Rio Deserto's Metallurgical Unit was one of the companies participating in the Internship Challenge 4.i, promoted by IEL (Euvaldo Lodi Institute) in Santa Catarina. The challenge launched by the company proposed to the students to think of alternatives to modernize and create indicators capable of influencing the production parameters, by means of software, facilitating decision making. The Internship Challenge 4.i is a competition that encourages students, accompanied by mentors, to solve challenges, providing results for the industries and segments involved. The action combines theory and practice and brings organizations, students, and educational institutions closer together. The event receives the acronym "4.i" to represent the pillars of the current industrial sector: internationalization, inclusion, infrastructure and innovation.

IÇARENSE HIGHLIGHT TROPHY



In 2021, Rio Deserto received, for the 10th time, the Içarense Highlight Trophy, promoted by the Içarense Newspaper, from Içara. The recognition takes into account the company's contribution to the development of the municipality, through the Extraction Unit 101 Mine.

In Içara, the company has contributed to tax collection and job generation since 2011, when it started operating the Extraction Unit 101 Mine. Rio Deserto's social involvement is also a highlight in the municipality, with social actions that favor the communities.

Alesc's Social Responsibility Certification

Rio Deserto was awarded, for the 10th time, the Certificate of Social Responsibility promoted by the Legislative Assembly of the State of Santa Catarina (Alesc). The recognition reaffirms the company's commitment to the Southern Catarinense, considering, considering the socio-environmental responsibility included in its management policies.

The presentation of Rio Deserto's engagement with the SDGs and the actions related to the Covid-19 pandemic were fundamental for the achievement.

The Certificate of Social Responsibility of Santa Catarina recognizes and highlights companies and other organizations established in Santa Catarina territory that present the social balance sheet, thus promoting transparency in institutional relations and commitment to the welfare of society and environmental preservation in Santa Catarina.



Seal of Best Practices for Environmental Sustainability

Initiatives focused on environmental preservation and social responsibility have guaranteed Rio Deserto the renewal of the Environmental Sustainability Best Practices Seal, granted by the Criciúma Business Association (Acic) and the entity's Environmental Center.

To obtain the seal, Rio Deserto provided documents and presented innovative actions and projects, proving its sustainable performance. Visits were also made to the company's units with the purpose of getting to know personally the environmental and social practices carried out. Besides the engagement of Rio Deserto with good practices, the achievement represents the alignment with the SDG Movement (Sustainable Development Goals). The seal is a way to value companies that practice environmental, social and governance actions.



EQUITY AND INVESTMENTS

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

01/01/2021 a 31/12/2021

Economic and Financial Data	R\$
Sales Revenue	341.313.824,35
Payroll	46.849.607,44

Internal Social Indicators	R\$
Food	1.934.371,35
Social Charges	20.695.750,06
Health	1.113.825,85
Occupational Health and Safety	511.979,12
Education	1.936.091,76
Training and Development Professional	226.848,55
Participation in Profits and Results	

External Social Indicators	R\$
Federal Taxes	12.267.138,91
State Taxes	6.115.204,11
Municipal Taxes	3.367.302,41

Environmental Indicators	R\$
Company Operation	2.816.926,97
Environmental Recovery	1.625.975,06

Mineral Reserves	
Coal	
Other minerals	
Investments	

Investments
Machines and Equipment
Industrial Installations
Buildings
Land
Furniture and Utensils
Equipment and Software
Vehicles
Maracaja
Development of New Products

Calculatio	n Basis
Gross Reven	ue
Net Revenue	
Operating In	come

Between the value of the Sales Revenue and the other registered items, there is the value of the inputs acquired from third parties (raw materials, materials, services, freight, energy and others).

EQUITY AND INVESTMENTS

Toneladas
32.389.168
23.126.551

R\$
7.182.365,09
1.141.513,65
2.807.502,64
136.037,18
286.138,30
103.000,00
1.980.000,00
65.610,00

R\$
341.313.824,35
324.308.293,90
339.541.194,35

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