Vale SA

2024 Questionário corporativo do CDP de 2024

Versão do Word

Importante: esta exportação exclui questões não respondidas
Este documento é uma exportação da resposta do questionário CDP da sua organização. Contém todos os pontos de dados para questões que foram respondidas ou em curso. Pode haver questões ou pontos de dados que lhe tenham sido pedido para fornecer, que estão em falta este documento porque estão sem resposta no momento.
Termos de divulgação do questionário corporativo 2024 - CDP

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04/07/2025, 05:30 pm

Conteúdos

C1. Introdução

(1.1) Sua resposta está sendo enviada em qual idioma?

Selecione de:

☑ Inglês

(1.2) Selecione a moeda usada para todas as informações financeiras divulgadas em sua resposta.

Selecione de:

☑ USD

(1.3) Apresente uma visão geral e apresentação para sua organização.

(1.3.2) Tipo de organização

Selecione de:

☑ Empresa de capital aberto

(1.3.3) Descrição da organização

Vale S.A. is one of the largest metals and mining companies in the world, based on market capitalization and one of the world's leading producers of iron ore and nickel, currently present in 18 countries and five continents. The company is headquartered in Rio de Janeiro, Brazil, and also produces iron ore pellets, copper, and platinum group metals, gold, silver and cobalt as by-products of nickel and copper, besides being engaged in greenfield mineral exploration in six countries. In addition, it operates large logistics systems in Brazil and other regions of the world, including railroads, maritime terminals and ports, which are integrated with its mining operations. The company has distribution centers to support the delivery of iron ore worldwide and also has investments in energy and steel businesses directly and through associates and joint ventures. Vale is a private, publicly traded organization and our purpose is "We exist to improve life and transform the future. Together". The company has the ambition to become a leader in sustainable mining and a benchmark for value creation and sharing with its shareholders, stakeholders and society, besides being committed to improving its performance and contributing to enhancing the lives of people in the areas where it operates. Vale's Board of Directors (BD) has the role of overseeing and supporting our journey towards a more sustainable and safer mining model, allowing for the development of low-carbon solutions, combined with the creation of value for society and a focus on business discipline. Vale recognizes that climate change represents one of the greatest challenges for society and is committed to contributing to solutions that limit the increase in temperature by up to 2C, as defined in the Paris Agreement (PA). Moreover, the company plays a fundamental role in the global energy transition, with its portfolio of high-quality iron ore products and solutions, essential for decarbonizing steelmaking, and as a producer of metals that are essential for global electrification. In this regard, Vale's BD updated the

organization's net-zero strategy in 2019. Aiming to actively support the decarbonization of the steel, metallurgical and shipping chains, the company's main commitment is to become net-zero in its operations (scopes 1 & 2) by 2050, considering the target to reduce 33% of scopes 1&2 and the target to consume 100% of electricity from renewable sources by 2025 in Brazil, and globally in 2030. This goal was achieved, two years ahead of schedule: in 2023, all the electric energy consumed in Vale's operations in Brazil came from renewable sources such as hydroelectric, wind, and solar power. In addition, in 2020 Vale assumed the goal of reducing Scope 3 net emissions by 15% by 2035, compared to the base year of 2018, which is based on the development of new products, nature-based solutions, partnerships, and engagement with clients and suppliers. The reduction volume was defined based on the Science Based Target Initiative-SBTI calculation tool, Absolute Contraction Approach method. Therefore, to support these goals, an internal carbon price of USD50/tCO2e is in effect to guide Vale's capital allocation decisions aligned with the PA goals and with the 2ºC scenario, following the Carbon Pricing Leadership Coalition recommendations. In this process, the Executive Vice President for Sustainability deploys and monitor advances in the implementation of strategies and policies, and it's an agent of internal and external engagement, through actions and dialogue with stakeholders, as well as strengthening the relationship between Vale and society, being an important facilitator for the implementation of the New Pact with Society, one of Vale's strategic pillars. In addition, acting transparently and considering the expectations of its stakeholders is one of the company's pillars. One of the transparency initiatives related to climate change in which Vale participates, is the Task Force for Climate-Related Financial Disclosures (TCFD), an initiative that aims at promoting transparency regarding climate-related risks and opportunities. Some other relevant forums focused on climate change that Vale is part of are: International Council on Mining and Metals (ICMM), CDP, and the World Business Council for Sustainable Development (WBCSD). In 2020, Vale joined the CDP Supply Chain to report all actions and indicators focused on CO2e emissions in the value chain. Finally, Vale supports efforts to mitigate GHG emissions, in collaboration with peers, by promoting innovation, developing and deploying low emissions technology, and implementing projects that improve energy efficiency. The answers in the CDP questionnaire refer to 100% of Vale's operating units and to the companies over which Vale has operational control, that is, its subsidiaries in Brazil and other countries. This group of entities is called "Grupo Vale".
[Linha fixa]

(1.4) Indique a data de término do ano sobre o qual estão sendo divulgados dados. Para os dados de emissões, indique se serão apresentados os dados de emissões para os anos de reporte passados.

(1.4.1) Data de término do ano de reporte

12/31/2023

(1.4.2) Alinhamento deste período de reporte com o seu período de reporte financeiro

Selecione de:
☑ Sim

(1.4.3) Indique se estão sendo fornecidos dados de emissões de anos de reporte passados

Selecione de:
☑ Sim

(1.4.4) Número de anos de reporte passados para os quais serão apresentados os dados das emissões de Escopo 1

Selecione de:
☑ 2 anos

(1.4.5) Número de anos de reporte passados para os quais serão apresentados os dados das emissões de Escopo 2

Selecione de:
☑ 2 anos

(1.4.6) Número de anos de reporte passados para os quais serão apresentadas as emissões de Escopo 3

Selecione de:
☑ 2 anos
[Linha fixa]

(1.4.1) What is your organization’s annual revenue for the reporting period?

41784000000

(1.5) Dê detalhes sobre os limites de reporte.

	Seu limite do reporte para a divulgação no CDP é igual ao usado em suas demonstrações financeiras?
	Selecione de: ☑ Sim

[Linha fixa]

(1.6) A organização tem um código ISIN ou outro identificador único (por exemplo, Ticker, CUSIP, etc.)?

Código ISIN - título

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

ISIN Code: US91912E1055 (NYSE)

Código ISIN – ações

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Não

Número CUSIP

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

CUSIP number: 91912E 105 (NYSE)

Símbolo no Ticker

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

VALE (NYSE)

Código SEDOL

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Não

Número LEI

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Não

Número D-U-N-S

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Não

Outro identificador único

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Não

Símbolo no Ticker

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

VALE3 (B3)

Símbolo no Ticker

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

XVALO (LATIBEX)

Código ISIN - título

(1.6.1) Sua organização usa esse identificador único?

Selecione de:
☑ Sim

(1.6.2) Forneça o identificador único

ISIN Code: BRVALEACNOR0 (B3 and LATIBEX)
[Adicionar linha]

(1.7) Selecione os países/áreas em que a organização opera.

Selecione todos os aplicáveis

☑ Omã
☑ China
☑ Japan
☑ Brasil
☑ Canadá
☑ Malásia
☑ Indonésia
☑ Reino Unido da Grã-Bretanha e Irlanda do Norte

(1.8) É possível fornecer dados de geolocalização das instalações?

	É possível fornecer dados de geolocalização das instalações?	**Explique**
	Selecione de: ☑ Sim, para todas as instalações	*N/A*

[Linha fixa]

(1.8.1) Indique todos os dados de geolocalização disponíveis para as instalações.

Row 1

(1.8.1.1) Identificador

Carajás Complex

(1.8.1.2) Latitude

-6.411223

(1.8.1.3) Longitude

-50.341333

(1.8.1.4) Explique

N/A

Row 2

(1.8.1.1) Identificador

Itabira Complex

(1.8.1.2) Latitude

-19.593314

(1.8.1.3) Longitude

-43.221605

(1.8.1.4) Explique

N/A

Row 3

(1.8.1.1) Identificador

Vargem Grande Complex

(1.8.1.2) Latitude

-20.091264

(1.8.1.3) Longitude

-43.945276

(1.8.1.4) Explique

N/A

Row 4

(1.8.1.1) Identificador

Paraopeba Complex

(1.8.1.2) Latitude

-20.106026

(1.8.1.3) Longitude

-43.959732

(1.8.1.4) Explique

N/A

Row 5

(1.8.1.1) Identificador

Brucutu Água Limpa Complex

(1.8.1.2) Latitude

-19.946214

(1.8.1.3) Longitude

-43.383113

(1.8.1.4) Explique

N/A

Row 6

(1.8.1.1) Identificador

Mariana Complex

(1.8.1.2) Latitude

-20.257595

(1.8.1.3) Longitude

-43.524328

(1.8.1.4) Explique

N/A

Row 7

(1.8.1.1) Identificador

PT Vale Indonesia

(1.8.1.2) Latitude

-2.56812

(1.8.1.3) Longitude

121.389641

(1.8.1.4) Explique

N/A

Row 8

(1.8.1.1) Identificador

Ferrosos Norte

(1.8.1.2) Latitude

6.059807

(1.8.1.3) Longitude

-50.167448

(1.8.1.4) Explique

N/A

Row 9

(1.8.1.1) Identificador

Corporative Brazil

(1.8.1.2) Latitude

-22.910169

(1.8.1.3) Longitude

-43.173635

(1.8.1.4) Explique

N/A

Row 10

(1.8.1.1) Identificador

Serra Sul – S11D

(1.8.1.2) Latitude

-6.411224

(1.8.1.3) Longitude

-50.341333

(1.8.1.4) Explique

N/A

Row 11

(1.8.1.1) Identificador

Ponta da Madeira Complex

(1.8.1.2) Latitude

-2.574198

(1.8.1.3) Longitude

-44.342135

(1.8.1.4) Explique

N/A

Row 12

(1.8.1.1) Identificador

Tubarão Complex

(1.8.1.2) Latitude

-20.262567

(1.8.1.3) Longitude

-40.244273

(1.8.1.4) Explique

N/A

Row 13

(1.8.1.1) Identificador

Oman Operations

(1.8.1.2) Latitude

24.511622

(1.8.1.3) Longitude

56.598384

(1.8.1.4) Explique

N/A

Row 14

(1.8.1.1) Identificador

Onça Puma

(1.8.1.2) Latitude

-6.542229

(1.8.1.3) Longitude

-51.114634

(1.8.1.4) Explique

N/A

Row 15

(1.8.1.1) Identificador

Port Colborne Refinery

(1.8.1.2) Latitude

42.879598

(1.8.1.3) Longitude

-79.237737

(1.8.1.4) Explique

N/A

Row 16

(1.8.1.1) Identificador

Sudbury Complex

(1.8.1.2) Latitude

46.480663

(1.8.1.3) Longitude

-81.045879

(1.8.1.4) Explique

N/A

Row 17

(1.8.1.1) Identificador

Thompson Complex

(1.8.1.2) Latitude

55.71292

(1.8.1.3) Longitude

-97.836879

(1.8.1.4) Explique

N/A

Row 18

(1.8.1.1) Identificador

Long Harbour Operations

(1.8.1.2) Latitude

47.418623

(1.8.1.3) Longitude

-53.792404

(1.8.1.4) Explique

N/A

Row 19

(1.8.1.1) Identificador

Voisey’s Bay Complex

(1.8.1.2) Latitude

56.334705

(1.8.1.3) Longitude

-62.072704

(1.8.1.4) Explique

N/A

Row 20

(1.8.1.1) Identificador

Clydach Refinery

(1.8.1.2) Latitude

51.693711

(1.8.1.3) Longitude

-3.889591

(1.8.1.4) Explique

N/A

Row 21

(1.8.1.1) Identificador

Matsuzaka Refinery

(1.8.1.2) Latitude

34.604467

(1.8.1.3) Longitude

136.549806

(1.8.1.4) Explique

N/A

Row 22

(1.8.1.1) Identificador

Salobo

(1.8.1.2) Latitude

-5.794425

(1.8.1.3) Longitude

-50.531521

(1.8.1.4) Explique

N/A

Row 23

(1.8.1.1) Identificador

Sossego

(1.8.1.2) Latitude

-6.433417

(1.8.1.3) Longitude

-50.069884

(1.8.1.4) Explique

N/A

Row 24

(1.8.1.1) Identificador

Carajás Railway (EFC)

(1.8.1.2) Latitude

-2.56835

(1.8.1.3) Longitude

-44.346151

(1.8.1.4) Explique

N/A

Row 25

(1.8.1.1) Identificador

Vitória to Minas Railway (EFVM)

(1.8.1.2) Latitude

-20.27682

(1.8.1.3) Longitude

-40.246181

(1.8.1.4) Explique

N/A

Row 26

(1.8.1.1) Identificador

Simões Filho’s Ferroalloy Plant

(1.8.1.2) Latitude

-12.787931

(1.8.1.3) Longitude

-38.412447

(1.8.1.4) Explique

N/A

Row 27

(1.8.1.1) Identificador

Malaysia Distribution Center (Teluk Rubiah)

(1.8.1.2) Latitude

4.170708

(1.8.1.3) Longitude

100.619682

(1.8.1.4) Explique

N/A

Row 28

(1.8.1.1) Identificador

Ilha de Guaíba's Terminal (TIG)

(1.8.1.2) Latitude

-23.004488

(1.8.1.3) Longitude

-44.032523

(1.8.1.4) Explique

N/A

Row 29

(1.8.1.1) Identificador

Itaguaí's Terminal (CPBS)

(1.8.1.2) Latitude

-22.910695

(1.8.1.3) Longitude

-43.819408

(1.8.1.4) Explique

N/A

Row 30

(1.8.1.1) Identificador

New Steel

(1.8.1.2) Latitude

-22.615068

(1.8.1.3) Longitude

-43.309027

(1.8.1.4) Explique

N/A

Row 31

(1.8.1.1) Identificador

Água Limpa e Brucutu Complex

(1.8.1.2) Latitude

-19.946214

(1.8.1.3) Longitude

-43.383113

(1.8.1.4) Explique

N/A
[Adicionar linha]

(1.17) Em qual parte da cadeia de valor dos metais e da mineração a organização opera?

Mineração

☑ Cobre
☑ Minério de ferro
☑ Níquel

Processamento

☑ Ouro
☑ Cobre
☑ Prata
☑ Níquel
☑ Metais do grupo da platina
☑ Outros metais, especifique **:Cobalt**

(1.18) Dê detalhes sobre os projetos de mineração abrangidos por esta divulgação, especificando o(s) tipo(s) de projeto, a localização e o(s) método(s) de mineração utilizado(s).

Row 1

(1.18.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(1.18.2) Nome

Carajás Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-6.411223

(1.18.6) Longitude

-50.341333

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1985

(1.18.11) Ano de encerramento

2062

(1.18.12) Descrição do projeto

The Carajás Complex is responsible for producing around 150 to 180 million tons of iron annually. The ore produced in Carajás is exported through a system that integrates mines, plants, railroads, and ports. After the mining and processing phase, the product is transported in wagons via the Carajás Railway to the Ponta da Madeira Maritime Terminal in São Luís, Maranhão, Brazil. In this unit, through five mines, the company produces three types of products derived from iron: sinter feed, pellet feed, and granulate. This operation has established itself as one of Vale's most significant operations and consists of three divisions: Serra Norte, Serra Leste, and the S11D Complex. The Carajás Complex boasts the world's most significant iron ore mining projects and is situated in the Carajás region, within the Amazon biome, known as the S11D Complex. This Complex has a production capacity of 90 million tons per year of iron ore with a purity of 66,7% iron content. Over US 6,4 billion was invested in the construction of the mine and plant, demonstrating a substantial commitment to enhancing the competitiveness of Brazilian ore. This project introduces modern and sustainable solutions, reduces diesel consumption, and implements natural humidity processing, eliminating the need for tailings dams. Combining innovation investments with Vale's industry expertise enables a more efficient operation with minimized environmental impact. As with any development project, there were impacts on the region's biodiversity. However, the project team took measures to avoid and minimize these impacts, recover impacted areas, and conserve important biodiversity areas. In 2017 and 2018, we used the mitigation hierarchy framework to identify, prioritize, and map biodiversity risks for the mine complex. We developed a Biodiversity Action Plan (BAP) focused on mitigating and monitoring risks and impacts of future expansions. These actions are now part of the Carajás Biodiversity Management Plan. The mines in the Carajás complex are greenfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs.

Row 2

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(1.18.2) Nome

Itabira Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-19.593314

(1.18.6) Longitude

-43.221605

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1957

(1.18.11) Ano de encerramento

2041

(1.18.12) Descrição do projeto

The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits, including Periquito, Dois Córregos, Onça, Camarinha, and Chacrinha, are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. This process generates four products: NBCA (granulated), sinter feed, pellet feed, and PCCA (super thin), which are sent to storage silos and then loaded, through three silos, onto the railway cars. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state, and municipal levels, but we also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to mitigate and offset the impact of mining operations on biodiversity. There is proximity to urban centres, and to avoid a visual impact and dust, green curtains with extensive forest cover, similar to a barrier, were implemented. One of the main progresses in 2021 was the execution of the Experimental landfills at Itabira and Brucutu; these enabled the implementation of the filtered tailings pile projects. In addition, in 2023, Vale produced 31,399 thousand metric tons of iron ore in the Itabira Complex, which represents an increase of 15.1% compared to 2022.

Row 3

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(1.18.2) Nome

Mariana Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-20.257595

(1.18.6) Longitude

-43.524328

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1969

(1.18.11) Ano de encerramento

2038

(1.18.12) Descrição do projeto

The Mariana Complex, which comprises the Alegria, Fábrica Nova, Fazendão, and Timbopeba mines, is located in Ouro Preto, Mariana, and Catas Altas in Minas Gerais, Brazil. This region is known for its rich historical, cultural, and natural assets. All production is transported by the Vitória-Minas Railway (in Portuguese, Estrada de Ferro Vitória a Minas, EFVM), and part of it is destined for the foreign market, being transported through the Port of Tubarão (Espírito Santo, Brazil). The Mariana complex is part of the Quadrilátero Ferrífero, Minas Gerais (Brazil), covered by the Cerrado (tropical savanna in eastern Brazil) and Atlantic Forest biome. This region has the most significant iron ore production at the national level. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. In addition, in 2023, Vale produced 26,398 thousand metric tons of iron ore in the Mariana Complex, which represents an increase of 7.3% compared to 2022.

Row 4

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(1.18.2) Nome

Vargem Grande Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-20.091264

(1.18.6) Longitude

-43.945276

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1996

(1.18.11) Ano de encerramento

2089

(1.18.12) Descrição do projeto

The Vargem Grande Complex comprises several operational units, including Abóboras, Capitão do Mato, Tamanduá, Vargem Grande, Pico, Galinheiro, and Sapecado, along with the Andaime Railway Terminal (TFA, in the Portuguese acronym for Terminal Ferroviário de Andaime). The primary function of the Terminal is to transport the ore produced in these units to the port. Additionally, the Complex houses eight ore beneficiation plants and a pelletizing plant that converts iron ore into high-value ore pellets for the steel market. The annual production capacity of the complex is 58 million tons of iron ore. Like all of Vale's complexes, the Vargem Grande complex has environmental protection as a fundamental priority, besides investing in technology and research to improve your environmental controls. The mines within the Vargem Grande Complex are classified as brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Furthermore, in 2023, Vale produced 37,061 thousand metric tons of iron ore in the Vargem Grande Complex, which represents an increase of 10.7% compared to 2022.

Row 5

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(1.18.2) Nome

Paraopeba Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-20.106026

(1.18.6) Longitude

-43.959732

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1930

(1.18.11) Ano de encerramento

2042

(1.18.12) Descrição do projeto

The Paraopeba Complex consists of seven mines: Capão Xavier, Mutuca, Mar Azul, Jangada, Tod, Fábrica, and Viga. It also includes ten ore beneficiation plants and a pelletizing plant located at the mine site. With an annual production capacity of nearly 32 million tons of iron ore, the complex not only generates employment opportunities but also contributes to tax revenues while adhering to sustainable mining practices. Subsequently, the produced ore is transported via rail to terminals in Guaíba and Sepetiba (Rio de Janeiro State) as well as Tubarão (Espírito Santo State). From there, the cargo is shipped to various destinations worldwide. It is important to note that this report does not include Córrego do Feijão Mine (Brumadinho, Minas Gerais) and its associated dam break. This mine is part of this Complex but is inactive since the dam break. In this area we have several ongoing projects related to the repair and recovery. The mines within the Paraopeba Complex are classified as brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Furthermore, in 2023, Vale produced 28,870 thousand metric tons of iron ore in the Paraopeba Complex, which represents a decrease of 4.1% compared to 2022.

Row 6

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(1.18.2) Nome

Brucutu Água Limpa Complex

(1.18.3) Participação (%)

100

(1.18.4) País/área

Selecione de:

☑ Brasil

(1.18.5) Latitude

-19.946214

(1.18.6) Longitude

-43.383113

(1.18.7) Estágio do projeto

Selecione de:
☑ Produção

(1.18.8) Método de mineração

Selecione de:
☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis
☑ Minério de ferro

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

2006

(1.18.11) Ano de encerramento

2040

(1.18.12) Descrição do projeto

The Brucutu Água Limpa Complex is formed by the Brucutu mine, located in the municipality of São Gonçalo do Rio Abaixo, and Água Limpa mine, located in the municipalities of Rio Piracicaba and Santa Bárbara, in Minas Gerais. The Complex's annual production capacity is around 38 million tons of iron ore. The complex utilizes the Vitória-Minas Railway to transport its products to the Port of Tubarão, where it is exported to clients worldwide. The Brucutu mine is the first mine in Vale and Brazil to have the transport of large trucks (off-road) 100% autonomous, that is, without the need for operators. The mines of the Brucutu Água Limpa Complex are brownfield projects and the entire complex follows Brazilian environmental legislation, at the federal, state and municipal levels. All mines have their environmental impact assessment and environmental management plans. In addition, in 2023 Vale produced 24,546 thousand metric tons of iron ore in the Brucutu Complex, which represents an increase of 18.2% compared to 2022.

Row 7

(1.18.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(1.18.2) Nome

PTVI – PT Vale Indonesia

(1.18.3) Participação (%)

44.3

(1.18.4) País/área

Selecione de:

☑ Indonésia

(1.18.5) Latitude

-2.56812

(1.18.6) Longitude

121.389641

(1.18.7) Estágio do projeto

Selecione de:

☑ Produção

(1.18.8) Método de mineração

Selecione de:

☑ Aberto

(1.18.9) Matéria(s)-prima(s)

Selecione todos os aplicáveis

☑ Níquel

(1.18.10) Ano em que a extração teve início/está planejada para iniciar

1968

(1.18.11) Ano de encerramento

2045

(1.18.12) Descrição do projeto

This mine is under the legal framework of the Contract of Work, which was amended on October 17th, 2014, it is valid until December 28th, 2025, with a concession area of 118,017 hectares covering South Sulawesi (70,566 hectares), Central Sulawesi (22,699 hectares), and Southeast Sulawesi (24,752 hectares). The Company extracts nickel laterite ore and processes it into the final nickel product in matte. The average volume of nickel production per year reaches 75,000 tons. In 2023, the Company produced 70,728 tons of nickle in matte. In producing nickel in the Sorowako Block, pyro met llurgical technology is used (in melting the laterite nickel ore). The nickel product is exported entirely to Vale Canada Limited and Sumitomo Metal Mining in a particular long-term contract agreed upon by the two companies. The Company also continues its plan to construct a nickel processing plant and its facilities in Sambalagi, Morowali Regency, Central Sulawesi, Pomalaa, Kolaka Regency, and Southeast Sulawesi. The project in Bahodopi is to build a smelter to process saprolite nickel ore and produce ferronickel, the primary material for stainless steel making. In Pomalaa, the project is to create a processing facility with HPAL (High-Pressure Acid Leaching) technology to process limonite ore and produce an intermediate product that can be further processed into material for Electric Vehicles (EV) batteries.
[Adicionar linha]

(1.24) A organização mapeou sua cadeia de valor?

(1.24.1) Cadeia de valor mapeada

Selecione de:

☑ Sim, mapeamos ou, no momento, estamos no processo de mapear nossa cadeia de valor

(1.24.2) Etapas da cadeia de valor abrangidas no mapeamento

Selecione todos os aplicáveis

☑ Cadeia de valor upstream

☑ Cadeia de valor downstream

(1.24.3) Camada mais alta de fornecedores mapeada

Selecione de:

☑ Fornecedores da Camada 1

(1.24.4) Camada mais alta de fornecedor conhecida, porém não mapeada

Selecione de:

☑ Todas as camadas de fornecedor conhecidas foram mapeadas

(1.24.7) Descrição do processo e da abrangência do mapeamento

Vale has engaged a select number of its suppliers to understand the product carbon footprint of what is being sold to Vale, as well as to understand the future lower carbon options, as well as the supplier decarbonization roadmap.
[Linha fixa]

(1.24.1) A organização mapeou onde plástico foi produzido, comercializado, usado e/ou descartado nas operações diretas ou outra parte da cadeia de valor?

(1.24.1.1) Mapeamento dos plásticos

Selecione de:

☑ Sim, mapeamos ou, no momento, estamos no processo de mapear plástico na cadeia de valor

(1.24.1.2) Etapas da cadeia de valor abrangidas no mapeamento

Selecione todos os aplicáveis

☑ Gestão do fim da vida útil

☑ Outro, especifique **:**Direct operations

(1.24.1.4) Rotas da gestão do fim da vida útil mapeadas

Selecione todos os aplicáveis

☑ Preparação para reutilização

☑ Reciclagem

☑ Aterro sanitário

☑ Outro, especifique **:**co-processing

[Linha fixa]

C2. Identificação, avaliação e gestão de dependências, impactos, riscos e oportunidades

(2.1) Como a organização define os horizontes de tempo de curto, médio e longo prazo em relação à identificação, avaliação e gestão das suas dependências, impactos, riscos e oportunidades ambientais?

Curto prazo

(2.1.1) De (anos)

0

(2.1.3) A (anos)

1

(2.1.4) Como esse horizonte de tempo está vinculado ao planejamento estratégico e/ou financeiro

In the course of 2023, Vale has revisited its considerations on time horizons, aiming to align with recently published international standards and regulations, and to adopt a global approach encompassing sustainability, financial and strategic planning matters. Based on the European Sustainability Reporting Standards (ESRS) general requirements (ESRS 1) and IFRS S1, Vale has established the adoption of the following reporting periods: (a) For the short-term time horizon: the reporting period in its financial statements. (b) For the medium-term time horizon: from the end of the short-term reporting period per (a) above to five years; and (c) For the long-term time horizon: more than six years.

Médio prazo

(2.1.1) De (anos)

2

(2.1.3) A (anos)

5

(2.1.4) Como esse horizonte de tempo está vinculado ao planejamento estratégico e/ou financeiro

Based on the afore mentioned, Vale considers medium-term the period above 1 year from the current financial year (FY1) up to 5 years. Vale has incorporated into its sustainability strategy certain objectives to be met by 2030. These objectives include an absolute reduction in greenhouse gas (GHG) emissions by 33%, achieving a 100% renewable energy supply, enhancing the global energy efficiency indicator by 5%, and restoring and protecting an additional 500,000 hectares of forest outside of company-owned properties.

Longo prazo

(2.1.1) De (anos)

6

(2.1.2) O horizonte de tempo de longo prazo da organização está em aberto?

Selecione de:

☑ Não

(2.1.3) A (anos)

30

(2.1.4) Como esse horizonte de tempo está vinculado ao planejamento estratégico e/ou financeiro

Based on the afore mentioned, Vale considers long-term the period above 6 years from the current financial year (FY6) up to 30 years. In alignment with the global approach set to initiate in 2025, Vale's long-term sustainability strategy includes the objective of achieving net zero emissions for Scopes 1 and 2 by 2050. This commitment is integral to embedding sustainability throughout our business operations and the entire value chain. In pursuit of becoming a leader in sustainable mining and reducing risks, Vale has embraced a comprehensive long-term view of sustainability. This encompasses plans for the complete closure of mining structures, addressing operational, economic, social, environmental, and governance aspects for future use. For an even broader perspective, Vale conducts additional scenario analyses on the acute and chronic physical risks of climate change, extending to the years 2075 and 2100.
[Linha fixa]

(2.2) A organização tem um processo para identificar, avaliar e gerir dependências e/ou impactos ambientais?

	Processo em vigor	Dependências e/ou impactos avaliados neste processo	Impactos à biodiversidade avaliados antes do estágio de desenvolvimento do projeto
	Selecione de: ☑ Sim	*Selecione de:* ☑ Tanto dependências quanto impactos	*Selecione de:* ☑ Sim, em alguns casos

[Linha fixa]

(2.2.1) A organização tem um processo para identificar, avaliar e gerir riscos e/ou oportunidades ambientais?

	Processo em vigor	Riscos e/ou oportunidades avaliados neste processo	Este processo é informado pelo processo de dependências e/ou impactos?
	Selecione de: ☑ Sim	*Selecione de:* ☑ Tanto riscos quanto oportunidades	*Selecione de:* ☑ Sim

[Linha fixa]

(2.2.2) Dê detalhes sobre o processo da organização para identificar, avaliar e gerir dependências, impactos, riscos e/ou oportunidades ambientais.

Row 1

(2.2.2.1) Problema ambiental

Selecione todos os aplicáveis

☑ Mudanças climáticas

(2.2.2.2) Indique quais dependências, impactos, riscos e oportunidades são abrangidos pelo processo para este problema ambiental

Selecione todos os aplicáveis

☑ Dependências

☑ Impactos

☑ Riscos

☑ Oportunidades

(2.2.2.3) Etapas da cadeia de valor abrangidas

Selecione todos os aplicáveis

☑ Operações diretas

☑ Cadeia de valor upstream

☑ Cadeia de valor downstream

☑ Gestão do fim da vida útil

(2.2.2.4) Abrangência

Selecione de:

☑ Parcial

(2.2.2.5) Camadas de fornecedores abrangidas

Selecione todos os aplicáveis

☑ Fornecedores da Camada 1

(2.2.2.7) Tipo de avaliação

Selecione de:

☑ Qualitativa e quantitativa

(2.2.2.8) Frequência da avaliação

Selecione de:

☑ Mais do que uma vez por ano

(2.2.2.9) Horizontes de tempo abrangidos

Selecione todos os aplicáveis

☑ Curto prazo

☑ Médio prazo

☑ Longo prazo

(2.2.2.10) Integração do processo de gestão de riscos

Selecione de:

☑ Integrado no processo de gestão de riscos multidisciplinar da organização como um todo

(2.2.2.11) Especificidade local usada

Selecione todos os aplicáveis

☑ Específico do local

(2.2.2.12) Ferramentas e métodos usados

Ferramentas disponíveis comercial/publicamente

☑ método LEAP (Locate, Evaluate, Assess and Prepare), TNFD

☑ TNFD – Taskforce on Nature-related Financial Disclosures

☑ Outras ferramentas disponíveis comercial/publicamente, especifique :ClimateScore Global – Jupiter Intelligence

Gestão de riscos corporativos

☑ COSO Enterprise Risk Management Framework

☑ Gestão de riscos corporativos

☑ Norma ISO 31000 – Gestão de Riscos

☑ Modelos de risco

☑ Testes de estresse

Metodologias e normas internacionais

☑ Avaliação do Impacto Ambiental

☑ Projeções de Mudanças Climáticas do IPCC

Bancos de dados

☑ Bancos de dados, ferramentas ou normas nacionais específicas

☑ Bancos de dados do governo regional

Outros

☑ Pesquisa documental

☑ Análise de cenários

☑ Consultores externos

☑ Avaliação da materialidade

☑ Avaliação jurisdicional/paisagística

☑ Consulta/análise de parceiros e partes interessadas

(2.2.2.13) Tipos de risco e critérios considerados

Parâmetro físico agudo

☑ Estiagem

☑ Ondas de calor

☑ Onda de frio/geada

☑ Incêndios florestais

☑ Deslizamento de terra

☑ Precipitações intensas (chuva, granizo, neve/gelo)

☑ Inundação (costeira, fluvial, pluvial, de águas subterrâneas)

☑ Outro risco físico agudo, especifique **:Wind**

Físico crônico

☑ Estresse térmico

☑ Mudança no uso da terra

☑ Aumento no nível do mar

☑ Variabilidade da temperatura

☑ Precipitação ou variabilidade hidrológica

☑ Aumento da gravidade dos eventos climáticos extremos

☑ Alterações de temperatura (ar, água doce, água do mar)

☑ Alterações nos padrões e nos tipos de precipitações (chuva, granizo, neve/gelo)

☑ Alterações nos padrões dos ventos

Política

☑ Mudanças na legislação nacional
☑ Má execução do regulamento ambiental
☑ Mecanismos de precificação do carbono
☑ Mudanças na lei internacional e em acordos bilaterais
☑ Coordenação insatisfatória entre os órgãos regulamentadores
☑ Maior dificuldade na obtenção de autorizações para a operação
☑ Falta de certificação e normas de sustentabilidade consistentes

Mercado

☑ Disponibilidade e/ou maior custo de material sustentável certificado
☑ Disponibilidade e/ou maior custo das matérias-primas
☑ Incerteza nos sinais do mercado

Reputação

☑ Impacto para a saúde humana
☑ Maior preocupação e feedback negativo dos parceiros e partes interessadas
☑ Cobertura negativa da imprensa com relação ao apoio a projetos ou atividades com impactos negativos ao ambiente (por exemplo, emissões de GEE, desmatamento e conversão, estresse hídrico)
☑ Outra reputação, especifique :Reputational risks related to the non-achievement of Vale's ESG commitments

Tecnológico

☑ Acesso/disponibilidade de dados ou sistemas de monitoramento
☑ Transição para fontes de uso intensivo e de energia de baixo carbono
☑ Investimento malsucedido em novas tecnologias

Responsabilidade

☑ Exposição a litígios
☑ Não conformidade com a regulamentação

(2.2.2.14) Partes interessadas e parceiros considerados

Selecione todos os aplicáveis

☑ ONGs
☑ Povos indígenas

☑ Clientes
☑ Funcionários
☑ Investidores
☑ Fornecedores
☑ Comunidades locais
☑ Órgãos reguladores

(2.2.2.15) Este processo mudou desde o ano de reporte anterior?

Selecione de:
☑ Sim

(2.2.2.16) Outros detalhes do processo

Climate risks and opportunities analysis and management are integrated into a multi-disciplinary company-wide risk management process, considering present (operational and non-operational), business, and emerging risks.The 3 value chain stages are covered, as well as short to long-term horizons. Risk management governance is based on a 3 lines of defense model and Vale re-evaluates the process from time to time to ensure the alignment between strategic decisions, performance and the risk approach defined by the Board of Directors, the main responsible for overseeing management's processes. The Audit and Risk Committee supports the Board in fulfilling this responsibility. Our Executive Committee has the Sustainability Executive Risk Committee, where risks are evaluated and reviewed for quarterly reporting to the Board. Vale carries out scenario analysis of its business resilience, considering IEA scenarios. Risks are applied to stress-tests and resilience analysis, enabling the understanding of value chain exposure and its dependencies and impacts. Operational and non-operational risks are reported to the Board based on worst-case scenarios and impacts are established based on a severity ruler, which includes dimensions of people, environment, social, human rights, reputational and finance. Dependencies are evaluated based on the integrated risk map, including operational, geotechnical, and non-operational risks (strategic, finance, cybernetic and compliance, etc). Vale uses a risk matrix that considers severity and probability. For climate-related risks, the company developed specific methodologies for transition and physical impacts, in line with TCFD and now including IFRS S2. The main tools are: 1. Analysis of climate change scenarios; 2. Monitoring of the external environment, including stakeholders, regulations and public policies, technology and market trends; 3. Engagement with stakeholders in industry forums, to monitor positions, trends, regulations. Risks are assessed monthly (sustainability KPIs), bi-monthly (in the monitoring of goals in the Low Carbon Forum), bi-annually (conducted by the Sustainability Advisory Committee, which advises the Board) and annually (discussed in the Sustainability Advisory Committee meeting with the Board). Value chain cross-cutting, and it is focused on: upstream Tier 1 Suppliers through CDP Supply Chain; own operations, including pits, dams, tailings, railways, ports, manufacture plants, etc, and greenfield and brownfield projects; Downstream, including the hard-to-abate sector as the Steel and Shipping; Advocacy and stakeholders. The main risks are Regulatory/Legal, Technological, Market, Reputation and Physical. Vale uses a climate modeling system that shows future temperature and precipitation. It is divided into: 1) Short and medium-term, and seasonal forecasts for physical risks, whose focus the mapping and mitigating impacts on the operations and products shipment; 2) Long-term, in which the focus is assessing impacts of climate change in multi-year horizon on the operational sites, aiming to evaluate the investments in the facilities for their adaptation/mitigation. Main KPIs are: estimated negative impact on 2030 EBITDA, related to potential carbon pricing on Scopes 1&2, estimated EBITDA avoided decrease due to zero Scope 2 emissions in 2030, potential gain in copper EBITDA due to increased production and prices, and operational downtime due to the occurrence of extreme weather.

Row 2

(2.2.2.1) Problema ambiental

Selecione todos os aplicáveis

☑ Água

(2.2.2.2) Indique quais dependências, impactos, riscos e oportunidades são abrangidos pelo processo para este problema ambiental

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(2.2.2.3) Etapas da cadeia de valor abrangidas

Selecione todos os aplicáveis

☑ Operações diretas

☑ Cadeia de valor upstream

(2.2.2.4) Abrangência

Selecione de:

☑ Parcial

(2.2.2.5) Camadas de fornecedores abrangidas

Selecione todos os aplicáveis

☑ Fornecedores da Camada 1

(2.2.2.7) Tipo de avaliação

Selecione de:

☑ Qualitativa e quantitativa

(2.2.2.8) Frequência da avaliação

Selecione de:

☑ Anualmente

(2.2.2.9) Horizontes de tempo abrangidos

Selecione todos os aplicáveis

☑ Curto prazo

☑ Médio prazo

(2.2.2.10) Integração do processo de gestão de riscos

Selecione de:

☑ Integrado no processo de gestão de riscos multidisciplinar da organização como um todo

(2.2.2.11) Especificidade local usada

Selecione todos os aplicáveis

☑ Específico do local

(2.2.2.12) Ferramentas e métodos usados

Gestão de riscos corporativos

☑ COSO Enterprise Risk Management Framework

☑ Gestão de riscos corporativos

☑ Norma ISO 31000 – Gestão de Riscos

(2.2.2.13) Tipos de risco e critérios considerados

Físico crônico

☑ Aumento na vulnerabilidade do ecossistema

☑ Disponibilidade de água no nível da bacia/captação

☑ Qualidade da água no nível da bacia/captação

Política

☑ Maior dificuldade de obtenção de autorização para captações de água

☑ Maior preço da água

☑ Normas obrigatórias de eficiência, conservação, reciclagem ou processamento da água

Reputação

☑ Conflitos entre as partes interessadas a respeito dos recursos hídricos no nível da bacia ou do represamento

(2.2.2.14) Partes interessadas e parceiros considerados

Selecione todos os aplicáveis

☑ ONGs

☑ Clientes

☑ Funcionários

☑ Investidores

☑ Fornecedores

☑ Povos indígenas

☑ Comunidades locais

☑ Órgãos reguladores

☑ Empresas de abastecimento de água locais

☑ Outros usuários da água no nível da bacia/captação

(2.2.2.15) Este processo mudou desde o ano de reporte anterior?

Selecione de:

☑ Não

(2.2.2.16) Outros detalhes do processo

At Vale, the identification and analysis of water-related risks are part of the company's corporate risk management process, integrated into a multi-disciplinary company-wide risk management process. Vale's risk management process considers the present risks (operational and non-operational), business risks, and emerging risks, whose concepts are contemplated in the company's specific norms. Risk management governance is based on a 3 lines of defense model and Vale re-evaluates the process from time to time to ensure the alignment between strategic decisions, performance and the risk approach defined by the Board, the main responsible for overseeing management's processes. The Audit and Risk Committee supports the Board in fulfilling this responsibility. Our Executive Committee has the Sustainability Executive Risk Committee, where risks are evaluated and reviewed for quarterly reporting to the Board. Additionally, in 2023, the implementation of a new methodology for the Survey of Environmental Aspects and Impacts (LAIA) made it possible to standardize the process of mapping operational scenarios and controls of environmental interest, enabling a focus on relevant environmental aspects and assertiveness in the management of associated controls. Additionally, summary maps were developed to provide a spatial view of the main environmental aspects. Vale uses a risk matrix that considers severity and probability. The risk analysis is updated annually. We manage our water risks not only in our operational units, considering the entire river basin where we operate as a boundary

condition. We analyze the possible financial, regulatory and image impacts of the company, including climate change and value chain guidelines. For water-related risks, Vale has also adapted its global internal standard for water and wastewater resources management to the guidelines of the International Council on Mining and Metals. To assist the Company in the analysis of water risks, as of 2022, Vale has adopted FAO UN indicator 6.4.2, which classifies the level of water stress in the watershed where the company operates. Vale has a target to identify and manage water related risk by 2030.

Row 3

(2.2.2.1) Problema ambiental

Selecione todos os aplicáveis

☑ Biodiversidade

(2.2.2.2) Indique quais dependências, impactos, riscos e oportunidades são abrangidos pelo processo para este problema ambiental

Selecione todos os aplicáveis

☑ Dependências

☑ Impactos

☑ Riscos

☑ Oportunidades

(2.2.2.3) Etapas da cadeia de valor abrangidas

Selecione todos os aplicáveis

☑ Operações diretas

(2.2.2.4) Abrangência

Selecione de:

☑ Parcial

(2.2.2.6) Projetos de mineração abrangidos

Selecione todos os aplicáveis

☑ Projeto 1

(2.2.2.7) Tipo de avaliação

Selecione de:

☑ Qualitativa e quantitativa

(2.2.2.8) Frequência da avaliação

Selecione de:

☑ Não definido

(2.2.2.9) Horizontes de tempo abrangidos

Selecione todos os aplicáveis

☑ Curto prazo

☑ Médio prazo

(2.2.2.10) Integração do processo de gestão de riscos

Selecione de:

☑ Integrado no processo de gestão de riscos multidisciplinar da organização como um todo

(2.2.2.11) Especificidade local usada

Selecione todos os aplicáveis

☑ Específico do local

(2.2.2.12) Ferramentas e métodos usados

Ferramentas disponíveis comercial/publicamente

☑ Ferramenta Encore

☑ IBAT for Business

☑ método LEAP (Locate, Evaluate, Assess and Prepare), TNFD

☑ TNFD – Taskforce on Nature-related Financial Disclosures
☑ WWF Biodiversity Risk Filter

Gestão de riscos corporativos
☑ Métodos internos da empresa

Bancos de dados
☑ Bancos de dados, ferramentas ou normas nacionais específicas
☑ Bancos de dados do governo regional

(2.2.2.13) Tipos de risco e critérios considerados

Parâmetro físico agudo
☑ Inundação (costeira, fluvial, pluvial, de águas subterrâneas)
☑ Precipitações intensas (chuva, granizo, neve/gelo)

Físico crônico
☑ Mudança no uso da terra
☑ Alterações nos padrões e nos tipos de precipitações (chuva, granizo, neve/gelo)
☑ Queda nos serviços ecossistêmicos
☑ Espécies ameaçadas dentro ou nas proximidades das operações de mineração
☑ Disponibilidade de água no nível da bacia/captação

Política
☑ Mudanças na lei internacional e em acordos bilaterais
☑ Mudanças na legislação nacional

Mercado
☑ Outro mercado, especifique **:**Inability to attract investors due to uncertain risks related to the environment insufficiency

Reputação
☑ Cobertura negativa da imprensa com relação ao apoio a projetos ou atividades com impactos negativos ao ambiente (por exemplo, emissões de GEE, desmatamento e conversão, estresse hídrico)

☑ Estigmatização do setor

(2.2.2.14) Partes interessadas e parceiros considerados

Selecione todos os aplicáveis

☑ ONGs
☑ Clientes
☑ Funcionários
☑ Investidores
☑ Fornecedores
☑ Povos indígenas
☑ Comunidades locais
☑ Órgãos reguladores
☑ Outros usuários da água no nível da bacia/captação

(2.2.2.15) Este processo mudou desde o ano de reporte anterior?

Selecione de:

☑ Sim

(2.2.2.16) Outros detalhes do processo

Vale conducts biodiversity risk analysis at site and company levels during the planning of new projects and expansions, considering potential impacts. For new projects, risk analysis is conducted from the planning phase, developing diagnoses to assess potential interferences in high value, protected and sensitive areas. Vale developed a normative standard that provides guidelines and processes for biodiversity management focused on all stages of the life cycle, from project planning to post-closure, published in early 2020. It presents Hierarchy Impact Mitigation, risk management, metrics, and processes so that new projects and even operations can assess and manage biodiversity risks, establish goals and actions related to No Net Loss. It is based on legal requirements and international best practices that govern performance standards for investments, by the Sustainability Policy and Vale's long-term strategic objective of achieving a neutral impact on biodiversity. Operations with significant impacts in areas of high value for biodiversity require Biodiversity Management Plans, whether based on legal obligations or voluntary commitments. Of the 54 operational sites assessed in 2023, 50 have been identified as requiring these plans. Of these, 82% have biodiversity management plans in place, and the remainder have plans under development or planned. In 2023 we began implementing the LEAP approach proposed by the TNFD, starting with a pilot project for operations located in Brazil. In 2024 and 2025 this approach will be extended to other countries. This has made it possible to improve our assessments of risks related to nature, based entirely on the evaluation of impacts and dependencies. According to the TNFD, nature-related risks are potential threats imposed on an organization linked to its dependencies and to society's dependencies on nature, entirely related to impacts on nature. To assess the risks, the drivers of impacts were surveyed and quantified, as well as the ecosystem services and their relationship with Vale's production processes and with the use surrounding the sites. The state of nature at each site was assessed, considering the extent and condition of the ecosystems, as well as the main associated species. Based on this analysis, the risks associated with impacts and material dependencies were raised. Whenever a new project is planned, biodiversity risks are analyzed in accordance with internal standards. The risk assessment at corporate level is updated annually. With the implementation of TNFD, we haven't yet finalized the frequency of updates. Vale’s operations depend on essential ecosystem services provided by nature. The greatest dependencies relate to water provision and climate regulation, which are

essential for the production and product flowsTo evaluate production processes and the materiality of impacts and dependencies were used to SBTN materiality tool and ENCORE. The main impact drivers associated with production processes are related to water use and changes to ecosystems, directly related to the reality of the business. There is a great dependence on assets linked to provisioning water (underground and surface), and with emphasis on the regulation climate and mass stabilization and erosion control. The complete report can be found on Vale's website: val-relantnfd2023-pt-130624-mg (vale.com)
[Adicionar linha]

(2.2.3) Dê detalhes específicos de mineração do processo que a organização usa para identificar, avaliar e gerir impactos da biodiversidade.

Row 1

(2.2.3.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(2.2.3.2) Extensão da avaliação

Selecione de:
☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis
☑ Impactos diretos
☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis
☑ Exigências de agências governamentais
☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery's The consulting company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts consider various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential effects on biodiversity and develop appropriate mitigation measures.

Row 2

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery's The consulting company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts considers various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential impacts on biodiversity and develop appropriate mitigation measures.

Row 3

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery's The consulting company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts consider various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the

traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential effects on biodiversity and develop proper mitigation measures.

Row 4

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery'sThe consulting company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts consider various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential effects on biodiversity and develop proper mitigation measures.

Row 5

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery's The consulting

company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts consider various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential impacts on biodiversity and develop proper mitigation measures.

Row 6

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, as outlined in its internal normative standard titled "Guidelines and Processes for Biodiversity Management". This normative standard applies to all of Vale's projects and operations within the Brazilian territory. These guidelines are based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies, which are public reports that can be accessed by environmental agencies, either virtually or physically. Regarding the process for analyzing risks and impacts related to biodiversity, Vale adopts the following procedures: I) Expert consultation: Vale hires a company with the necessary experience to conduct the environmental impact study. Avery's The consulting company's detailed analysis of the region is carried out through this expertise. II) National-specific tools and databases: All available databases related to the region's biodiversity are consulted- an essential step for crossing data with field research. III) Desk-based research: A bibliographic survey is carried out regarding local biodiversity to understand records and descriptions of fauna and flora. IV) Field surveys: Baseline and monitoring field expeditions are scheduled before and during project implementation and operation to examine abiotic and biotic aspects. V) Stakeholder consultation/analysis: Environmental agencies and the contracted study company are consulted throughout the project to ensure environmental conditions are being met. Essential procedure to check if the environmental conditions are being fulfilled. Data on the main stakeholders are collected with the territory's community relations teams. Furthermore, the tools and methods used to assess impacts consider various factors, including project-specific or location-specific characteristics, regulatory requirements, and industry best practices. Another example is the traditional Environmental Impact Assessment (EIA) method: EIA is a process that enables identifying, predicting, and evaluating environmental impacts from a project or activity. Vale conducts an EIA to analyze the potential effects on biodiversity and develop proper mitigation measures.

Row 7

(2.2.3.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(2.2.3.2) Extensão da avaliação

Selecione de:

☑ Avaliação completa do impacto ambiental e social

(2.2.3.3) Impactos considerados

Selecione todos os aplicáveis

☑ Impactos diretos

☑ Impactos indiretos

(2.2.3.4) Escopo definido por

Selecione todos os aplicáveis

☑ Exigências de agências governamentais

☑ Normas e/ou políticas da própria empresa

(2.2.3.5) Aspectos levados em consideração

Selecione de:

☑ Locais alternativos

(2.2.3.6) Há dados de referência de biodiversidade disponíveis

Selecione de:

☑ Sim

(2.2.3.7) A Declaração de Impacto Ambiental está publicamente disponível

Selecione de:

☑ Sim

(2.2.3.8) Explique

The company has implemented a risk assessment procedure to understand biodiversity impacts and risks at the company level and reinforce the biodiversity risk assessment at the site level, based on legal requirements and international good practices for performance standards. Additionally, all the company's mining projects have environmental impact studies. For PTVI, Tthe definition of essential environmental attributes for management was based on the analysis of environmental studies and project conditions, considering input from internal and external stakeholders. The Local Working Group reviewed the information and prioritized environmental attributes directly or indirectly impacted by project implementation and PTVI operations. The biodiversity management strategy of the PTVI project is outlined in the Environmental Impact Assessment (AMDAL, Indonesian acronym for Analisis Mengenai Dampak Lingkungan), accessible through the Ministry of Environment and Forestry, Provincial Environment Agency, and Local Environment Agency. The AMDAL documents encompass all the necessary information, guidelines, and planned actions to mitigate adverse environmental impacts, including measures for biodiversity conservation and ecosystem services. Specialists, including botanists and experts in mammals, herpetofauna, and avifauna, participated in accurately identifying surveyed species. Field research was conducted to identify species in the region and assess their conservation status. In 20232, PTVI will maintain its partnership with Hasanuddin University to update the baseline study and monitor biodiversity. Research on endangered flora and fauna species, carried out between 2018-2020, provided the foundation for actions in the nursery and arboretum, focusing on restoration and conservation of these species. In 2023, PTVI signed a Memorandum of Understanding with Hasanuddin University to further collaborate on education and research programs related to the company's operational activities. The scope of this cooperation agreement includes assessment and research on forestry, conservation, and biodiversity protection, primarily associated with biodiversity-related contracts. The collaboration aims to update the Biodiversity Baseline conducted in the previous year.
[Adicionar linha]

(2.2.7) As interconexões entre dependências, impactos, riscos e/ou oportunidades ambientais são avaliadas?

(2.2.7.1) As interconexões entre dependências, impactos, riscos e/ou oportunidades ambientais são avaliadas

Selecione de:

☑ Sim

(2.2.7.2) Descrição de como as interconexões são avaliadas

In 2023, Vale carried out an assessment of its dependencies, impacts, risks and opportunities based on the approach proposed by the Taskforce on Nature-related Financial Disclosures (TNFD). In 2022, Vale began engaging with the TNFD, participating in its discussion forum, collaborating with feedback for the construction of the framework and developing pilots to test its application. The TNFD relates each physical risk to the main Ecosystem Service on which the production process depends, and which will be affected if the risk materializes, and to the main impact drivers that cause the risk. The physical and transition risks are then described and classified according to their nature and the categories defined. The data and tools consulted or used were the Environmental Aspects and Impact Assessments (LAIA) and operational risks that Vale had already mapped, Integrated Reporting, Climate Risk Universe EY (EY's climate risk tool), ENCORE, Biodiversity Risk Filter, Biodiversity Risks and Opportunities in the Apparel Sector and Natural Capital Leaders. The results of this assessment, together with the reporting of quantitative and qualitative indicators in each operational area, indicated that our most significant impacts are associated with changes in vegetation cover and land use. The main drivers of impacts associated with production processes are related to the use of water (underground and surface), climate regulation, essential for the flow of

production and products, mass stabilization and erosion control. The results of the pilot made it possible to arrive at impacts and material dependencies that were already known, but now accessed and evaluated using a systematic methodology that is recommended globally. We have identified that the methodology and risk assessment processes used by Vale and provided for in its regulations already applied by all areas are adherent to the methodological processes proposed in the framework. We found that the main material risks mapped related to climate, water resources and communities are already known and managed within the processes currently implemented at Vale, and their assessment is complemented by the methodology. In addition, the results are supporting the revision of the biodiversity risk management process, with in-depth analyses and management.
[Linha fixa]

(2.3) Foram identificados locais prioritários na cadeia de valor da organização?

(2.3.1) Identificação de locais prioritários

Selecione de:

☑ Sim, identificamos locais prioritários

(2.3.2) Etapas da cadeia de valor onde os locais prioritários foram identificados

Selecione todos os aplicáveis

☑ Operações diretas

(2.3.3) Tipos de locais prioritários identificados

Locais sensíveis

☑ Áreas importantes para a biodiversidade **priority areas for conservation**

☑ Outro local sensível, especifique **:Key biodiversity areas, Ramsar sites,**

☑ Áreas de alta integridade ecossistêmica

☑ Áreas de rápido declínio na integridade ecossistêmica

☑ Áreas de importância para a entrega de serviços ecossistêmicos

☑ Áreas de disponibilidade de água limitada, inundações e/ou má qualidade da água

Locais com grandes dependências, impactos, riscos e/ou oportunidades

☑ Locais com grandes dependências, impactos, riscos e/ou oportunidades relacionados à água

☑ Locais com grandes dependências, impactos, riscos e/ou oportunidades relacionados à biodiversidade

(2.3.4) Descrição do processo para identificar locais prioritários

In 2023, Vale developed a pilot to apply the LEAP methodology of TFND to identify and assess their nature-related issues direct operations located in Brazil (mining, including processing and logistics - railroads and ports), considering iron ore and base metals, with a total of 50 assets being analyzed. To assess the interface that our direct operations assets have with nature in Brazil, a Geographic Information System (GIS) was used to assess the interface of our direct operation assets with nature. The process considered the assets location, their area of influence and overlapping layers related to land use and coverage, identification of ecosystems, protected areas, conservation of biodiversity priority areas, basal water stress, between others. The direct operations totaled an area of 65,000 hectares, with 37 operational units located in the Atlantic Rainforest biome (26,000 ha) and 13 operational units in the Amazon biome (39,000 ha). The area of influence covered around 780,000 ha. The area of influence of the assets interfaces with 18 types of land use and occupation, with 46% involving native vegetation. The most abundant types were Forest Formation (38.37%) and Pastureland (31.55%). It was established that 38 assets interface with Priority Areas for Biodiversity Conservation, four assets interface with Ramsar Sites, and four assets are located in regions of high water stress. Based upon the materiality of the impacts and dependencies connected to the environmental sensitivity of the areas in which the operations are located, the prioritization was refined. A score was created as well as a ranking which identified the most sensitive areas where Vale's operations have the potential to cause the greatest environmental impacts (areas of greatest Nature Integrity), as well as where the integrity of nature has been historically affected, resulting in a scarcity of ecosystemic services (regions of less Nature Integrity). We prioritized the two most extreme contexts which, connected to the impacts and dependencies, create an environment that is conducive to the development of risks, these being surveyed and presented in the next stage. Details in https://vale.com/documents/d/guest/val-relantnfd2023-en-140624-mg.

(2.3.5) A organização divulgará uma lista/mapa espacial dos locais prioritários?

Selecione de:

☑ Sim, vamos divulgar a lista/mapa geoespacial dos locais prioritários

(2.3.6) Apresente uma lista e/ou mapa espacial de locais prioritários

VAL-relanTNFD2023-EN-140624#MG.pdf
[Linha fixa]

(2.4) Como a organização define efeitos significativos para ela?

Riscos

(2.4.1) Tipo de definição

Selecione todos os aplicáveis

☑ Qualitativa

☑ Quantitativa

(2.4.2) Indicador usado para definir efeito significativo

Selecione de:

☑ EBITDA

(2.4.3) Mudança para indicador

Selecione de:

☑ Redução absoluta

(2.4.5) Valor do aumento/redução absoluta

3000000000

(2.4.6) Métricas consideradas na definição

Selecione todos os aplicáveis

☑ Frequência em que ocorre o efeito

☑ Horizonte de tempo em que o efeito ocorre

☑ Probabilidade de ocorrer o efeito

☑ Outro, especifique **:**Severity of effect occuring

(2.4.7) Aplicação da definição

Our risk management strategy considers a wide range of factors that could affect our business, including market risk factors (market risk); risks associated with inadequate or failed internal processes, people, systems or external events (operational risk); risks arising from third-party obligations (credit risk); risks from exposure to legal penalties, fines or reputational losses associated with failure to act in accordance with applicable laws and regulations, internal policies or best practices (compliance risk); and risks associated with our business model, ESG, and political and regulatory conditions in countries in which we operate (strategic risk), among others.The methodology for managing corporate risks combines information on the frequency, probability and severity of inferred risks to rank them as a priority. Risks are classified into very high, high, medium, or low. Very high risks the ones that may have a substantive effect on the company. The level of severity depends on the scope and analyses the effect between the various types of environmental, social, reputational, financial aspects.The probability of the impact is also analyzed based on the historical events and experience of the employees of the respective regions and companies. A Severity and Probability Table is a tool used to determine the extent of an impact. By assembling an analysis of the progressive severity of the impacts with the probability of occurrence of the mapped risks, we obtain the most relevant risks and act to prioritize them. It is also necessary to consider the controls that are already in place or, in the case of projects, that are

planned and budgeted. Considering the controls currently implemented, it is also important to verify the residual risk and assess its level of acceptability, defining the need for additional measures. A "substantial impact" for Vale comes from a operational or non-operational risks that may impact the achievement of general business goals and the Company's strategy in case of their materialization. They are those that the severity in inherent risk is classified as a very critical. The financial impact on very critical severity is higher than USD 3Bi, that is above 10% of EBITDA.These parameters and definitions must be reviewed at least, one time every three years or upon demand and submitted for approval of the Vale's Executive Committee.

Oportunidades

(2.4.1) Tipo de definição

Selecione todos os aplicáveis

☑ Qualitativa

☑ Quantitativa

(2.4.2) Indicador usado para definir efeito significativo

Selecione de:

☑ Outro, especifique **:**CAPEX

(2.4.3) Mudança para indicador

Selecione de:

☑ Porcentagem de aumento

(2.4.4) Porcentagem de mudança para indicador

Selecione de:

☑ 1-10

(2.4.6) Métricas consideradas na definição

Selecione todos os aplicáveis

☑ Horizonte de tempo em que o efeito ocorre

(2.4.7) Aplicação da definição

When evaluating opportunities, Vale considers the increase in CAPEX they represent, as well as the time horizon in which they will be implemented. Therefore, it determines that increases of 1 to 10% in the short and medium term (up to 5 years) are significant. In addition, more qualitative aspects of opportunities are analyzed, such as alignment with market trends, potential for gaining market share, alignment with the company's positioning, among other aspects. These analyzes and parameters are reevaluated at each strategic planning cycle, which occurs annually.
[Adicionar linha]

(2.5) A organização identifica e classifica potenciais poluentes hídricos associados às suas atividades que poderiam ter um impacto negativo para os ecossistemas aquáticos ou para a saúde humana?

(2.5.1) Identificação e classificação de potenciais poluentes hídricos

Selecione de:
☑ Sim, identificamos e classificamos nossos potenciais poluentes hídricos

(2.5.2) Como os potenciais poluentes hídricos são identificados e classificados

Vale monitors and assesses the water and effluent quality in line with local regulations of each country where it operates (set by CONAMA 430 in Brazil; Metal and Diamond Mining Effluent Regulations - SOR/2002-222 - Canada; National Effluent Standard-Japan; Government Regulation No. 82/2001- Indonesia; National Water Quality Standards - Malaysia; Water Supply and Water Quality Regulations 2016 No. 614 in UK and Northern Ireland). The operation licenses define the substances to be monitored, as well the monitoring frequency. The solids series, associated with the potential for material to be carried into watercourses, is monitored in most of our operations. Total dissolved solids are quantified in mg/L and most units have an upper limit of 500 mg/L for surface water. Regarding effluents, the Biochemical Oxygen Demand is the main aspect and has a minimum requirement of 60% removal in Brazil. Vale adopts a systematic approach to monitoring water and effluent quality, guided by a set of policies and procedures to ensure compliance with environmental standards and to commit to sustainability. Vale utilizes meters and software for internal measurements and relies on certified third-party laboratories for sample analysis. Vale has normatives to manage hazardous products, based on standards that include the American Petroleum Institute. It also addresses preventive and mitigatory controls for failure modes and risk scenarios as well as inspection, test and preventive maintenance.
[Linha fixa]

(2.5.1) Descreva como a organização minimiza os impactos negativos de potenciais poluentes hídricos em ecossistemas aquáticos ou para a saúde humana associados às suas atividades.

Row 1

(2.5.1.1) Categoria de poluente hídrico

Selecione de:

☑ Poluentes inorgânicos

(2.5.1.2) Descrição do poluente e potenciais impactos

Mining activities are susceptible to water pollutants and to handling of inorganic pollutants derived from minerals extracted dependent on the surrounding geological conditions of sites of operation. The minerals present in the ore bodies mined, in the tailings and waste rock can contaminate water sources if not properly managed. We continuously monitor and establish control measures to mitigate the impacts of altering the quality of surface water, which could make it unviable for human use downstream from our operations or make it unviable for recreational use, for example.

(2.5.1.3) Estágio da cadeia de valor

Selecione todos os aplicáveis

☑ Operações diretas

☑ Outro, especifique **:**Product use phase

(2.5.1.4) Ações e procedimentos para minimizar os impactos negativos

Selecione todos os aplicáveis

☑ Avaliação da infraestrutura crítica e das condições de armazenamento (vazamentos, derramamentos, erosão das tubulações etc.) e sua resiliência

☑ Além da conformidade com as exigências regulatórias

☑ Prevenção, preparação e resposta a acidentes industriais e químicos

(2.5.1.5) Explique

Every operational units must have a Water Resources and Effluent Management Program, based on ICMM guidelines.All operations have industrial and sanitary treatment systems, and control systems such as dykes and dams, all of which are monitored. The data management includes measurement, monitoring and analysis aligned with Vale's Internal procedure PNR-00035. Vale monitors and assesses the water and effluent quality indices in line with local regulations. The monitoring plans are not restricted to what is established by environmental permits and go beyond both the number of points and the frequency of monitoring and the number of parameters. At the most sensitive points we have online monitoring using multi-parameter probes that communicate directly with Environmental Control Center, allowing decisions-making in a short period of time in case of any deviations. All environmental events with the potential to change water quality are recorded in a specific system, that includes information on volumes, leakage levels, impacted areas, as well as the action plan with mitigation and contingency measures with nominal responsibilities.Vale considers that impact control and mitigation measures are working well when indicators related to pollutants are within the limits

established by the company, which is based on local regulations. Furthermore, the completion of action plans related to corrections in cases of deviations in indicators is also considered a measure of success.

Row 2

(2.5.1.1) Categoria de poluente hídrico

Selecione de:

☑ Fosfatos

(2.5.1.2) Descrição do poluente e potenciais impactos

Mining activities are susceptible to water pollutants and to handling of inorganic pollutants derived from minerals extracted dependant on the surrounding geological conditions of sites of operation. The minerals present in the ore bodies mined, in the tailings and waste rock can contaminate water sources if not properly managed. We continuously monitor and establish control measures in order to mitigate the impacts of altering the quality of surface water, which could make it unviable for human use downstream from our operations or make it unviable for recreational use, for example.

(2.5.1.3) Estágio da cadeia de valor

Selecione todos os aplicáveis

☑ Operações diretas

(2.5.1.4) Ações e procedimentos para minimizar os impactos negativos

Selecione todos os aplicáveis

☑ Avaliação da infraestrutura crítica e das condições de armazenamento (vazamentos, derramamentos, erosão das tubulações etc.) e sua resiliência

☑ Além da conformidade com as exigências regulatórias

☑ Prevenção, preparação e resposta a acidentes industriais e químicos

(2.5.1.5) Explique

Every operational units must have a Water Resources and Effluent Management Program, based on ICMM guidelines.All operations have industrial and sanitary treatment systems, and control systems such as dykes and dams, all of which are monitored. The data management includes measurement, monitoring and analysis aligned with Vale's Internal procedure PNR-00035. Vale monitors and assesses the water and effluent quality indices in line with local regulations. The monitoring plans are not restricted to what is established by environmental permits and go beyond both the number of points and the frequency of monitoring and the number of parameters. At the most sensitive points we have online monitoring using multi-parameter probes that communicate directly with Environmental Control Center,

allowing decisions-making in a short period of time in case of any deviations. All environmental events with the potential to change water quality are recorded in a specific system, that includes information on volumes, leakage levels, impacted areas, as well as the action plan with mitigation and contingency measures with nominal responsibilities.Vale considers that impact control and mitigation measures are working well when indicators related to pollutants are within the limits established by the company, which is based on local regulations. Furthermore, the completion of action plans related to corrections in cases of deviations in indicators is also considered a measure of success.

Row 3

(2.5.1.1) Categoria de poluente hídrico

Selecione de:

☑ Outros poluentes físicos

(2.5.1.2) Descrição do poluente e potenciais impactos

Mining activities are susceptible to water pollutants and to handling of inorganic pollutants derived from minerals extracted dependant on the surrounding geological conditions of sites of operation. The minerals present in the ore bodies mined, in the tailings and waste rock can contaminate water sources if not properly managed. We continuously monitor and establish control measures in order to mitigate the impacts of altering the quality of surface water, which could make it unviable for human use downstream from our operations or make it unviable for recreational use, for example.

(2.5.1.3) Estágio da cadeia de valor

Selecione todos os aplicáveis

☑ Operações diretas

(2.5.1.4) Ações e procedimentos para minimizar os impactos negativos

Selecione todos os aplicáveis

☑ Avaliação da infraestrutura crítica e das condições de armazenamento (vazamentos, derramamentos, erosão das tubulações etc.) e sua resiliência

☑ Além da conformidade com as exigências regulatórias

☑ Prevenção, preparação e resposta a acidentes industriais e químicos

(2.5.1.5) Explique

Every operational units must have a Water Resources and Effluent Management Program, based on ICMM guidelines.All operations have industrial and sanitary treatment systems, and control systems such as dykes and dams, all of which are monitored. The data management includes measurement, monitoring and analysis

aligned with Vale's Internal procedure PNR-00035. Vale monitors and assesses the water and effluent quality indices in line with local regulations. The monitoring plans are not restricted to what is established by environmental permits and go beyond both the number of points and the frequency of monitoring and the number of parameters. At the most sensitive points we have online monitoring using multi-parameter probes that communicate directly with Environmental Control Center, allowing decisions-making in a short period of time in case of any deviations. All environmental events with the potential to change water quality are recorded in a specific system, that includes information on volumes, leakage levels, impacted areas, as well as the action plan with mitigation and contingency measures with nominal responsibilities.Vale considers that impact control and mitigation measures are working well when indicators related to pollutants are within the limits established by the company, which is based on local regulations. Furthermore, the completion of action plans related to corrections in cases of deviations in indicators is also considered a measure of success.

Row 4

(2.5.1.1) Categoria de poluente hídrico

Selecione de:

☑ Nitratos

(2.5.1.2) Descrição do poluente e potenciais impactos

Mining activities are susceptible to water pollutants and to handling of inorganic pollutants derived from minerals extracted dependant on the surrounding geological conditions of sites of operation. The minerals present in the ore bodies mined, in the tailings and waste rock can contaminate water sources if not properly managed. We continuously monitor and establish control measures in order to mitigate the impacts of altering the quality of surface water, which could make it unviable for human use downstream from our operations or make it unviable for recreational use, for example.

(2.5.1.3) Estágio da cadeia de valor

Selecione todos os aplicáveis

☑ Operações diretas

(2.5.1.4) Ações e procedimentos para minimizar os impactos negativos

Selecione todos os aplicáveis

☑ Avaliação da infraestrutura crítica e das condições de armazenamento (vazamentos, derramamentos, erosão das tubulações etc.) e sua resiliência

☑ Além da conformidade com as exigências regulatórias

☑ Prevenção, preparação e resposta a acidentes industriais e químicos

(2.5.1.5) Explique

Every operational units must have a Water Resources and Effluent Management Program, based on ICMM guidelines.All operations have industrial and sanitary treatment systems, and control systems such as dykes and dams, all of which are monitored. The data management includes measurement, monitoring and analysis aligned with Vale's Internal procedure PNR-00035. Vale monitors and assesses the water and effluent quality indices in line with local regulations. The monitoring plans are not restricted to what is established by environmental permits and go beyond both the number of points and the frequency of monitoring and the number of parameters. At the most sensitive points we have online monitoring using multi-parameter probes that communicate directly with Environmental Control Center, allowing decisions-making in a short period of time in case of any deviations. All environmental events with the potential to change water quality are recorded in a specific system, that includes information on volumes, leakage levels, impacted areas, as well as the action plan with mitigation and contingency measures with nominal responsibilities.Vale considers that impact control and mitigation measures are working well when indicators related to pollutants are within the limits established by the company, which is based on local regulations. Furthermore, the completion of action plans related to corrections in cases of deviations in indicators is also considered a measure of success.

Row 6

(2.5.1.1) Categoria de poluente hídrico

Selecione de:

☑ Petróleo

(2.5.1.2) Descrição do poluente e potenciais impactos

The main activities of the company involving oils are the operation of machinery and vehicles.

(2.5.1.3) Estágio da cadeia de valor

Selecione todos os aplicáveis

☑ Operações diretas

(2.5.1.4) Ações e procedimentos para minimizar os impactos negativos

Selecione todos os aplicáveis

☑ Avaliação da infraestrutura crítica e das condições de armazenamento (vazamentos, derramamentos, erosão das tubulações etc.) e sua resiliência

☑ Além da conformidade com as exigências regulatórias

☑ Prevenção, preparação e resposta a acidentes industriais e químicos

(2.5.1.5) Explique

Every operational units must have a Water Resources and Effluent Management Program, based on ICMM guidelines.All operations have industrial and sanitary treatment systems, and control systems such as dykes and dams, all of which are monitored. The data management includes measurement, monitoring and analysis aligned with Vale's Internal procedure PNR-00035. Vale monitors and assesses the water and effluent quality indices in line with local regulations. The monitoring plans are not restricted to what is established by environmental permits and go beyond both the number of points and the frequency of monitoring and the number of parameters. At the most sensitive points we have online monitoring using multi-parameter probes that communicate directly with Environmental Control Center, allowing decisions-making in a short period of time in case of any deviations. All environmental events with the potential to change water quality are recorded in a specific system, that includes information on volumes, leakage levels, impacted areas, as well as the action plan with mitigation and contingency measures with nominal responsibilities.Vale considers that impact control and mitigation measures are working well when indicators related to pollutants are within the limits established by the company, which is based on local regulations. Furthermore, the completion of action plans related to corrections in cases of deviations in indicators is also considered a measure of success.
[Adicionar linha]

(2.6) Quantas barragens de rejeitos ativas e inativas por bacia hidrográfica estão sob o controle da organização?

Row 1

(2.6.1) País/área e Bacia hidrográfica

Território Britânico do Oceano Índico
☑ Outro, especifique :Atlântico Sudeste

(2.6.2) Número de barragens de rejeitos em operação

6

(2.6.3) Número de barragens de rejeitos inativas

9

(2.6.4) Explique

N/A

Row 2

(2.6.1) País/área e Bacia hidrográfica

Brasil

☑ São Francisco

(2.6.2) Número de barragens de rejeitos em operação

5

(2.6.3) Número de barragens de rejeitos inativas

14

(2.6.4) Explique

N/A

Row 3

(2.6.1) País/área e Bacia hidrográfica

Brasil

☑ Tocantins

(2.6.2) Número de barragens de rejeitos em operação

4

(2.6.3) Número de barragens de rejeitos inativas

0

(2.6.4) Explique

N/A

Row 4

(2.6.1) País/área e Bacia hidrográfica

Canadá

☑ Outro, especifique **:**Mississippi and Missouri

(2.6.2) Número de barragens de rejeitos em operação

1

(2.6.3) Número de barragens de rejeitos inativas

0

(2.6.4) Explique

N/A

Row 5

(2.6.1) País/área e Bacia hidrográfica

Canadá

☑ St.Lawrence

(2.6.2) Número de barragens de rejeitos em operação

3

(2.6.3) Número de barragens de rejeitos inativas

7

(2.6.4) Explique

N/A
[Adicionar linha]

(2.6.1) As barragens de rejeitos sob controle da organização são avaliadas e classificadas de acordo com as consequências da sua falha para a saúde humana e os ecossistemas?

(2.6.1.1) Avaliação das consequências da falha da barragem de rejeitos

Selecione de:
☑ Sim, avaliamos as consequências da falha da barragem de rejeitos

(2.6.1.2) Diretrizes de avaliação/classificação

Selecione todos os aplicáveis
☑ Canadian Dam Association (CDA)
☑ Global Industry Standard on Tailings Management (ICMM)
☑ Diretrizes específicas da empresa
☑ Outro, especifique :Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.1.3) As barragens de rejeitos foram classificadas como “de risco” ou “de alto risco”

Selecione de:
☑ Sim, as barragens de rejeitos foram classificadas como “de risco” ou “de alto risco” (ou equivalente)

(2.6.1.4) Explique

In the guidelines adopted by Vale as GISTM, CDA and Brazilian Legislation, there is no classification of dams as "highly hazardous" or "hazardous". In Brazil, the ANM’s Resolution 95 classifies dams as emergency levels 1, 2 or 3. In summary, a dam is classified as emergency level 1 when the structure's safety is

compromised. Emergency level 2 occurs when the compromising anomaly is not being controlled or when the safety factor is within the limits established in legislation. The dam is classified as level 3 when rupture is imminent or when the safety factor exceed the regulatory limits. Therefore, we consider dams at emergency level 3 as highly hazardous and at level 2 as hazardous. This classification is reviewed every 6 months. Vale has committed to adopt the GISTM for tailings dams. According to GISTM, the tailings dams are classified considering the potential population at risk, potential loss of life, environment, health, social and cultural and infrastructure and economics. Furthermore, the CDA guidelines are used in Canada's dams. We apply the Hazard Identification and Risk Assessment approach to assess geotechnical risks, define performance indicators and establish appropriate control and mitigation plans. Activities on level 3 dams are carried out using remotely operated equipment, with employees located outside the risk zone. Also, there are no communities living downstream of level 2 or 3 dams.
[Linha fixa]

(2.6.2) Dê detalhes sobre todas as barragens classificadas como ‘de risco’ e de ‘alto risco’.

Row 1

(2.6.2.1) Nome/identificador da barragem de rejeitos

Forquilha I

(2.6.2.2) País/área e Bacia hidrográfica

Brasil
☑ São Francisco

(2.6.2.3) Latitude

-20.406063

(2.6.2.4) Longitude

-43.855737

(2.6.2.5) Classificação do risco

Hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique **:**Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

12.76

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

12.76

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 2. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2035.

Row 2

(2.6.2.1) Nome/identificador da barragem de rejeitos

Grupo

(2.6.2.2) País/área e Bacia hidrográfica

Brasil

☑ São Francisco

(2.6.2.3) Latitude

-20.414798

(2.6.2.4) Longitude

-43.865151

(2.6.2.5) Classificação do risco

Hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique :Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

1.96

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

0

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 2. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2025.

Row 3

(2.6.2.1) Nome/identificador da barragem de rejeitos

Forquilha II

(2.6.2.2) País/área e Bacia hidrográfica

Brasil

☑ São Francisco

(2.6.2.3) Latitude

-20.408278

(2.6.2.4) Longitude

-43.851806

(2.6.2.5) Classificação do risco

Hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique :Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

22.78

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

22.78

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 2. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2035.

Row 4

(2.6.2.1) Nome/identificador da barragem de rejeitos

Sul Superior

(2.6.2.2) País/área e Bacia hidrográfica

Território Britânico do Oceano Índico

☑ Outro, especifique :Atlântico Sudeste

(2.6.2.3) Latitude

-19.970176

(2.6.2.4) Longitude

-43.596867

(2.6.2.5) Classificação do risco

Highly hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique **:**Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

5.94

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

0

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 3. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2029.

Row 6

(2.6.2.1) Nome/identificador da barragem de rejeitos

Forquilha III

(2.6.2.2) País/área e Bacia hidrográfica

Brasil

☑ São Francisco

(2.6.2.3) Latitude

-20.410942

(2.6.2.4) Longitude

-43.83663

(2.6.2.5) Classificação do risco

Highly hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique **:**Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

19.48

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

19.48

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 3. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2035.

Row 10

(2.6.2.1) Nome/identificador da barragem de rejeitos

Xingu

(2.6.2.2) País/área e Bacia hidrográfica

Brasil

☑ Outro, especifique **:**Atlântico Sudeste

(2.6.2.3) Latitude

-20.166339

(2.6.2.4) Longitude

-43.484064

(2.6.2.5) Classificação do risco

Hazardous

(2.6.2.6) Diretrizes utilizadas

Selecione todos os aplicáveis

☑ Portaria 70.389/17 - Agência Nacional de Mineração, Brasil

☑ Global Industry Standard on Tailings Management (ICMM)

☑ Diretrizes específicas da empresa

☑ Outro, especifique :Resolution 95/2022 of the National Mining Agency (Brazil)

(2.6.2.7) Atividade da barragem de rejeitos

Selecione de:

☑ Inativa

(2.6.2.8) Volume atual de represamento para o armazenamento de rejeitos (Mm3)

6.17

(2.6.2.9) Volume planejado de represamento para o armazenamento de rejeitos em 5 anos (Mm3)

0

(2.6.2.10) Explique

According to Brazilian legislation, the upper south dam is at emergency level 2. The dam is part of Vale's Upstream Dams De-characterization Program and it is expected to be de-characterization in 2029.
[Adicionar linha]

(2.6.3) Quais procedimentos estão em vigor para todas as barragens da organização para gerenciar os potenciais impactos à saúde humana ou aos ecossistemas aquáticos associados às barragens de rejeitos sob o seu controle?

Row 1

(2.6.3.1) Procedimento

Selecione de:

☑ Níveis de risco aceitáveis

(2.6.3.2) Detalhe do procedimento

Níveis de risco aceitáveis

☑ Estabelecimento de orientações e padrões sobre os níveis de risco aceitáveis, com base em uma avaliação dos potenciais riscos físicos e químicos

☑ Estabelecimento de orientações e padrões locais sobre os níveis de risco aceitáveis para a segurança de terceiros em consulta com comunidades potencialmente afetadas, funcionários e órgãos governamentais relevantes

☑ Estabelecimento de orientações e padrões locais sobre os níveis de risco aceitáveis em todos os estágios da vida útil, incluindo após o fechamento

☑ Estabelecimento de padrões para a empresa como um todo para os níveis de risco aceitáveis após uma política empresarial para eliminar ou minimizar os riscos hídricos associados a barragens de rejeitos

(2.6.3.3) Explique

Our risk management is based on our Risk Management Policy, which establishes methodologies, guidelines, response strategies, governance, and responsibilities for dealing with present and emerging risks identified by the company. Vale has an integrated risk management governance model based on the Lines of Defense approach, which helps to optimize communications to inform decision-making and enhance alignment across strategy, performance, and risk management. Additionally, we have the Geotechnical Risk Committee to act preventively and support in monitoring risks and necessary resolutions. In 2023, we implemented the concept of tolerance for the company's key risk indicators.

Row 2

(2.6.3.1) Procedimento

Selecione de:

☑ Plano operacional

(2.6.3.2) Detalhe do procedimento

Plano operacional

☑ Um plano operacional alinhado com o quadro estabelecido para os controles críticos e os níveis de riscos aceitáveis

☑ Um plano operacional que inclua as restrições operacionais da barragem e seu método de construção

☑ Um plano operacional que considere as consequências de violar as restrições operacionais da barragem.

☑ Um plano operacional que inclua a revisão periódica dos materiais da fundação e de encosta

☑ Um plano operacional que avalie a eficiência das medidas de gestão de riscos e se os objetivos de desempenho estão sendo atendidos

(2.6.3.3) Explique

After the Brumadinho tailings dam failure, Vale moved from a management system based on periodic ratings of stability conditions of the structures - the Dam Stability Condition Statements (DCEs) - to a system based on continuous assessments conducted by third parties (Engineer of Record - EoR) throughout the year. In addition, Vale's Tailings Dam Management System (TDMS) includes the provision of external independent reviewers that augment the levels and layers of internal review: EORs, the Independent Tailings Review Board (ITRB) and Periodic Independent Dam Safety Reviews (RPSB) that support the internal processes of technical inspections, reviews and performance evaluations.Our process safety program starts with the Hazard Identification and Risk Analysis (HIRA), by identifying the most critical process risks, and their respective controls. We have also performed HIRA for prioritized tailings dams and the controls to reduce or mitigate the risks identified for the respective structures have been managed according to our Risk Management Policy.

Row 3

(2.6.3.1) Procedimento

Selecione de:

☑ Programa de garantia

(2.6.3.2) Detalhe do procedimento

Programa de garantia

☑ Um programa de garantia para a fase operacional da instalação que detalhe os procedimentos das inspeções, auditorias e revisões

☑ Um programa de garantia para cada fase da vida útil da instalação que inclua a frequência dos vários níveis de inspeção, auditoria e revisão

☑ Um programa de garantia para cada fase da vida útil da instalação que inclua o escopo dos vários níveis de inspeção, auditoria e revisão

☑ Um programa de garantia que detalhe os requisitos de competência para as pessoas responsáveis pelas inspeções, auditorias e revisões

☑ Um programa de garantia que inclua uma auditoria externa cobrindo os planos de operação ou de vida útil das instalações

(2.6.3.3) Explique

After the Brumadinho tailings dam failure, Vale moved from a management system based on periodic ratings of stability conditions of the structures - the Dam Stability Condition Statements (DCEs) - to a system based on continuous assessments conducted by third parties (Engineer of Record - EoR) throughout the year. In addition, Vale's Tailings Dam Management System (TDMS) includes the provision of external independent reviewers that augment the levels and layers of internal review: EORs, the Independent Tailings Review Board (ITRB) and Periodic Independent Dam Safety Reviews (RPSB) that support the internal processes of technical inspections, reviews and performance evaluations. Vale requires periodic reviews of the physical and hydraulic safety conditions of dams, conducted by external and independent companies. These reviews comply with Brazilian legal requirements and commitments established with Brazilian authorities such as the Public Prosecutor's Office and the National Mining Agency.

Row 4

(2.6.3.1) Procedimento

Selecione de:

☑ Processo de gestão de mudanças

(2.6.3.2) Detalhe do procedimento

Processo de gestão de mudanças

☑ Inclusão de um processo formal da gestão de mudanças para a fase de construção da instalação

☑ Inclusão de um processo formal da gestão de mudanças para a fase operacional da instalação

☑ Inclusão de um processo formal da gestão de mudanças para as fases de encerramento e descomissionamento da instalação

☑ Inclusão de um processo de gestão de mudanças no programa de garantia

☑ Inclusão dos resultados de auditorias externas dos planos de operações ou de vida útil das instalações no processo de gestão de mudanças

(2.6.3.3) Explique

At Vale we have a formal change management process that demands the evaluation, review, approval and documentation of changes to design, construction, operation or monitoring during the tailings facility lifecycle.

Row 5

(2.6.3.1) Procedimento

Selecione de:

☑ Plano da vida útil das instalações

(2.6.3.2) Detalhe do procedimento

Plano da vida útil das instalações

☑ Um plano de vida útil das instalações que identifique especificações mínimas e objetivos de desempenho para as fases de operação e fechamento

☑ Um plano de vida útil das instalações que inclua uma identificação dos potenciais riscos físicos e químicos das fases de projeto e construção

☑ Um plano de vida útil das instalações que leve em consideração o uso da água e das terras após o fechamento

☑ Um plano de vida útil das instalações que dê detalhes dos recursos humanos e financeiros necessários

(2.6.3.3) Explique

Vale's operations implements, at all stages of the asset's life cycle, geotechnical risk controls and activities tied with identified geotechnical monitoring based on the studied failure modes and their associated consequences. In the event of changes related to performance caused by internal or exogenous factors, a new engineering and risk assessment should take place as soon as possible. Risks must be periodically assessed in a specific way in order to measure the effectiveness of controls for each critical structure. These must count with an opinion in writing from the specialist in charge designated by Vale and the EoR (Engineer of Record) in order to certify that such structures are operated in a disciplined manner, maintained and under surveillance, with updated and accessible information, and that the historical registry of the earth structure is properly stored and available in accordance with international quality standards. Tailings dams have an OMS(Operations, Maintenance and Surveillance) manual that describes the performance indicators and criteria for risk controls and critical controls, and the ranges of performance linked to specific pre-defi ned management actions.
[Adicionar linha]

C3. Divulgação de riscos e oportunidades

(3.1) Foi identificado algum risco ambiental que tenha causado um efeito significativo na organização no ano de reporte ou que esteja previsto para causar um efeito significativo na organização no futuro?

Mudanças climáticas

(3.1.1) Riscos ambientais identificados

Selecione de:

☑ Sim, nas operações diretas e cadeia de valor upstream/downstream

Água

(3.1.1) Riscos ambientais identificados

Selecione de:

☑ Sim, nas operações diretas e cadeia de valor upstream/downstream

Plásticos

(3.1.1) Riscos ambientais identificados

Selecione de:

☑ Não

(3.1.2) Principal motivo por que a organização não considera ter riscos ambientais em suas operações diretas e/ou cadeia de valor upstream/downstream

Selecione de:

☑ Não é uma prioridade estratégica imediata

(3.1.3) Explique

It is not a material topic.

Biodiversidade

(3.1.1) Riscos ambientais identificados

Selecione de:
☑ Sim, apenas nas nossas operações diretas

(3.1.2) Principal motivo por que a organização não considera ter riscos ambientais em suas operações diretas e/ou cadeia de valor upstream/downstream

Selecione de:
☑ Não é uma prioridade estratégica imediata

(3.1.3) Explique

In 2023, Vale focused its efforts on analyzing the risks and impacts on biodiversity in its direct operations. As the company advances in this process, it plans to expand its analysis to the value chain.
[Linha fixa]

(3.1.1) Dê detalhes sobre os riscos ambientais identificados que tenham causado um efeito significativo na organização no ano de reporte ou que estejam previstas para ter um efeito significativo na organização no futuro.

Mudanças climáticas

(3.1.1.1) Identificador de risco

Selecione de:
☑ Risk1

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Política

☑ Mudança na regulamentação de produtos e serviços existentes

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Cadeia de valor downstream

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Brasil

☑ Omã

(3.1.1.9) Descrição específica da organização para o risco

As a supplier of iron ore agglomerates and ferronickel for the steel sector, one of Vale's risks is related to the EU CBAM (Carbon Border Adjustment Mechanism). The implementation of CBAM aims to prevent carbon leakage due to the implementation of the EU ETS within the European Union. This mechanism will apply to imports of certain goods and selected precursors whose production is carbon intensive and at most significant risk of carbon leakage, impacting sectors such as the iron and steel and Vale, as our productsare part of their value chain. Iron ore pellets accounted for 13.9% of our 2023 net operating revenues from continuing operations. In 2023 Vale has produced 19.4 million metric tons of Blast Furnace Pellets and 17.1 million metric tons of Direct Reduction Pellets, which totals 36.5 million metric tons. In the same year, 5% of the total volume of iron ore pellets were shipped to Europe. The iron ore agglomerates are under the transition phase of the pricing mechanism, and it is expected that a carbon price will be applied from 2026 onwards. As the pricing mechanism is based on the EU ETS, the CBAM certificates will be priced at the same level as the EU ETS allowances, potentially creating unbearable cost for importers. It is worth mentioning that Brazil has increased its investments and engagement in carbon pricing issues, in accordance with the international trends, and is currently at a decisive moment in the discussion on regulating the carbon market.

(3.1.1.11) Principal efeito financeiro do risco

Selecione de:

☑ Maiores custos indiretos [operacionais]

(3.1.1.12) Horizonte de tempo para o qual está previsto o efeito significativo do risco na organização

Selecione todos os aplicáveis

☑ Longo prazo

(3.1.1.13) Probabilidade do risco provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Virtualmente certo

(3.1.1.14) Magnitude

Selecione de:

☑ Baixa

(3.1.1.16) Efeito previsto do risco na posição financeira, desempenho financeiro e fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Vale anticipates an increase in the medium- and long-terms on direct and indirect costs for the organization in the medium term, due to the purchase of EU CBAM certificates.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Sim

(3.1.1.23) Valor previsto do efeito financeiro no longo prazo - mínimo (moeda)

3045955

(3.1.1.24) Valor previsto do efeito financeiro no longo prazo - máximo (moeda)

6701101

(3.1.1.25) Explicação do valor do efeito financeiro

CBAM will be based on the purchase of certificates by importers. The price of the certificates will depend on the weekly average auction price of EU ETS allowances expressed in /tonCO2 emitted (carbon footprint). Importers will have to register with national authorities to buy certificates. The potential impact ranges from approximately US 3 to 6 million and is based on premises like the volume of iron ore pellets imported to the European Union remaining in the same % of 2023 (5%), meaning 1.8 million tons), the EU regulations on phasing-out free allocation, EU benchmark for sintered ore, and the % of iron content in blast pellets and sintered ore. Calculation: [Embedded emissions per pellet type (kgCO2e/ton product) – Emissions covered by free allocation in the EU (tCO2/ ton product)] x Tons of imported products x Average weekly EU ETS Price CBAM adjustment Assumptions: Embedded emissions per pellet type (kg CO2 e/ton product): Scope 1 and 2 intensities since the iron pellet intensity from Ecoinvent 3.8 is cradle-to-gate. Ecoinvent cradle-to-gate reference iron ore content 65% is 154.9 kgCO2e/t. A multiplication by 80% was applied to align with the gate-to-gate assumptions for the pellet, resulting in 123.9 kgCO2e/t. Embedded emissions for 66% iron content: 187.8 kgCO2e/t. Emissions covered by free allocation in the EU (tCO2/ton product): EU Benchmark sintered ore: 157 kgCO2/t sintered ore, with embedded emissions for 59% iron content: 266 kgCO2e/t iron content. 2030 reference 51.5% free allocation: 137 kgCO2e/t iron content. Ton of imported products: 5% of total pellets produced: 1.82 million tons. 5% of total pellets produced 66% iron content: 1.20 million iron content. Average weekly EU ETS Price (based on IEA studies): Min USD 50, Max range USD 110. Below are the calculations of the ranges: (187.8-137) x 1,20 x 50 x 1000 3,045,955.08 (187.8-137) x 1,20) x 110 x 1000 6,701,101.19 We highlight that this value is a projection and it's between the values used as minimum and maximum potential financial impact figure in the year of 2030, that can be impacted with changes in the exchange rate and the possibility of development of the regulated carbon market in Brazil and Oman. The calculations are the company's expectations and may not materialize, due to risks such as operational challenges, global economic conditions, capital markets, commodity prices, competition, and uncertainties related to mineral resource estimation and licensing.

(3.1.1.26) Principal resposta ao risco

Preços e créditos

☑ Implementar preço interno sobre o carbono

(3.1.1.27) Custo da resposta ao risco

240000000

(3.1.1.28) Explicação do cálculo do custo

Vale aims to increase the production of agglomerated products—briquettes and pellets—whose impact includes reducing taxation under the CBAM while ensuring the supply of high-quality products to the market. Vale's iron ore briquettes are part of our iron solutions portfolio, resulting from an innovative technology developed over 18 years of research and patented by Vale. These products are low-temperature, low-CO_2 agglomerates, providing an alternative to sinter, pellets, and fines. The briquetting process can reduce CO_2 emissions by up to 10% across the steel production value chain. The low-temperature briquetting process reduces CO_2 emissions by up to 80% compared to traditional agglomeration routes. The initial briquette production will take place at Pelletizing Plants 1 and 2 at the Tubarão Unit in Vitória, Brazil, which are currently being converted for this purpose. This implementation required a capital expenditure of approximately USD240 million in 2023.

(3.1.1.29) Descrição da resposta

Situation: Steel demand will grow steadily over the years based on emerging regions and current megatrends. Task: Our strategy aims to accelerate the implementation of breakthrough iron solutions to attend more stringent demand of steelmakers. Our goal is to increase the production of agglomerated products – briquettes and pellets – securing the supply of high-grade products to the market. Action: In September 2021, Vale introduced the briquette, a new product developed by the company over almost 20 years; it may reduce by up to 10% the emission of GHG in steel production by its steelmaking customers. The product also reduces the emission of particulates and gases such as SOX) and NOX and eliminates water use in its production. Result: The 2st briquette plant in Tubarão began operations in 2023, followed by the 2nd plant in early 2024. Together, they have the capacity to produce 6 million tons of briquettes per year (mtpa). Originally, these units were dedicated to pellet production but were converted for briquette manufacturing. The project involved an investment of USD256 million. Vale recently announced it managed to produce commercial quality pellets on an industrial scale without using anthracite coal. In a test carried out in a pellet plant in Vargem Grande, Brazil, Vale replaced 100% of fossil fuel with biocarbon to fire the pellets. This project will cut annual CO2 emissions by 350,000 metric tons. However, more tests of longer duration are being carried out to thoroughly evaluate the process., and only after that Vale will be able to generate information for the development of the necessary engineering work for the project's definitive implementation. To reduce the EU CBAM impacts on the FeNi sales to Europe, Vale has been evaluating several options to reduce GHG emissions in its Onça Puma operations in the state of Pará, Brazil. In 2023, Vale evaluated the displacement of coal with torrefied biomass, with good results.

Água

(3.1.1.1) Identificador de risco

Selecione de:

☑ Risk4

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Parâmetro físico agudo

☑ Rompimento de barragens de rejeitos

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Operações diretas

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.1.1.7) Bacia hidrográfica onde o risco ocorre

Selecione todos os aplicáveis

☑ São Francisco

☑ Outro, especifique **:**Atlântico Sudeste

(3.1.1.9) Descrição específica da organização para o risco

Vale has identified and monitored annually risks that may have a significant impact on the company, mainly involving dam structures. Tailings dam failure can spread more than a million cubic meters of tailings over huge areas. Vale operates 134 mining dams in Brazil, 39 of which are Tailings Storage Facilities, most of them located in Minas Gerais. Of the total, 95 are covered by Brazil's National Dam Safety Policy. For the 12 structures with active level 1 emergency protocols, Vale has increased monitoring and signaling of instability, along with implementing studies, actions, and additional works to enhance safety measures. The 6 structures with active emergency protocols at levels 2 and 3 had their Self-Rescue Zones evacuated preventively, with resident families downstream relocated as necessary. Vale takes measures to reinforce stability and safety conditions, such as keeping reservoirs dry, reducing water supply, and implementing diversion channels. Regarding the impact on direct operations, Vale conducts mapping of failure modes and critical controls and performs risk assessments of the dam portfolio using HIRA (Hazard Identification and Risk Analysis). Preventive, corrective, and monitoring actions for structures have been intensified since 2020, resulting in a reduction from 35 to 19 structures at emergency levels established by Brazilian legislation.

(3.1.1.11) Principal efeito financeiro do risco

Selecione de:

☑ Encerramento de operações

(3.1.1.12) Horizonte de tempo para o qual está previsto o efeito significativo do risco na organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.1.1.13) Probabilidade do risco provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Improvável

(3.1.1.14) Magnitude

Selecione de:

☑ Alta

(3.1.1.16) Efeito previsto do risco na posição financeira, desempenho financeiro e fluxos de caixa da organização nos horizontes de tempo futuro selecionados

A dam failure event has a direct impact on the Company's cash flow and financial planning, as it affects a long period of time. The impacts are on revenue, operational costs, compliance and litigation costs.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Sim

(3.1.1.21) Valor previsto do efeito financeiro no médio prazo - mínimo (moeda)

0

(3.1.1.22) Valor previsto do efeito financeiro no médio prazo - máximo (moeda)

15000000000

(3.1.1.25) Explicação do valor do efeito financeiro

The financial cost related to the risk of a dam failure can vary significantly depending on various factors, including the size of the dam, the location, the population density of the affected area, the value of properties and infrastructure in the region, the environmental affected and others. To estimate the maximum impact value of one dam failure, we considered the sum of what was spent on the Brumadinho dam collapse from 2019 to 2023. Vale continues to incur costs related to this event, although these costs have been decreasing and reached their lowest level in 2023, as reported in our financial statements. It is important to emphasize that defining this value precisely is very complex and the value presented here is only a reference. The minimum cost was not estimated, considering that there are dams where the impact is restricted to Vale property, and in such cases, the financial cost would be very low. The indicated value of USD 15 billion includes immediate assistance and emergency actions by the company, preliminary agreements and emergency compensation, voluntary financial support to affected families, special support to traditional communities, investment in health professionals and medicines, diverse environmental monitoring and environmental recovery.

(3.1.1.26) Principal resposta ao risco

Conformidade, monitoramento e metas

☑ Melhorar o monitoramento de operações diretas

(3.1.1.27) Custo da resposta ao risco

2816000000

(3.1.1.28) Explicação do cálculo do custo

In 2023, we spent a total of US458 million in connection with the de-characterization of upstream structures/dams. In order to treat the tailings from wet processing, we are investing in tailings filtration systems to allow the reduction of disposal of tailings in dams and also to operate certain mines and plants without using tailings dams. We have announced an estimated investment of US2,214 million between 2018 and 2033 in some of our sites, including Vargem Grande Complex, Itabira Complex and Brucutu, to be operated with tailings filtration systems and dry stacking tailings disposal, which consists of filtering and stacking of partially dewatered tailings, reducing our reliance on tailings dams. In 2023, we invested US144 million in tailings filtration system and dry stacking tailings disposal, and we started the operation of the Itabira Complex (Cauê and Conceição) and Brucutu filtration plants, the second and third of four plants under construction in Minas Gerais.

(3.1.1.29) Descrição da resposta

In Dec 2015, the Geotechnical Risk Management area was created, with a specific focus on dams. Vale is responsible for providing regular training sessions, with a CDP Page 28 of 48 maximum interval of 6 months. Evacuation simulations are carried out with the population, and siren system tests are frequently conducted in order to ensure the emergency response efficacy. In 2019, right after the Brumadinho dam collapse, Vale created the Extraordinary Independent Consulting Committees, focusing on Investigation, Support and Recovery, and Dam Safety. The Committees was dedicated to measuring the assistance to those affected by the collapse (Support and Recovery) and to advise on issues related to safety conditions, management, and mitigation of risks related to Vale's dams and dikes (Dam Safety). The approval of the Emergency Plan for decommissioning upstream dams is contemporaneous to the Committees. In 2023, Vale maintained its dam management in line with the best practices, integrated with the movements of society and updated with the advances in legislation. We have intensified the monitoring of our structures and the assessments of their conservation status, to anticipate the problems through preventive and corrective measures. Vale is focused on the evolution of its Tailings & Dams Management System ("TDMS") for the Ferrous, Coal and Base Metals businesses. For example, in Brazil, through the 3 Geotechnical Monitoring Centers, we monitor our main dams 24 hours a day, 7 days a week. They also receive regular inspections from internal and external teams, who act promptly when preventive or corrective actions are necessary. Vale also built four Downstream Containment Structures, physical barriers designed to contain the material released in cases of rupture to protect the population and the downstream environment.

Biodiversidade

(3.1.1.1) Identificador de risco

Selecione de:

☑ Risk5

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Parâmetro físico agudo

☑ Incêndios florestais

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Operações diretas

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.1.1.8) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(3.1.1.9) Descrição específica da organização para o risco

Forest fires are a potential accident in our areas, especially during the dry season. Vale complexes located adjacent to or within native vegetation have a greater chance of occurrence and can have more critical consequences when located adjacent to protected areas. In addition, secondary impacts, such as the need for local mine workers to fight the fire and the expense of containing it, can also have cascading effects. The risks associated with this accident at Project 1 are even greater, as the vegetation is very dense and extensive, allowing the fire to spread quickly. In addition, there are areas that are difficult to access, which makes firefighting more complicated. Risks like this impact the biodiversity of the region and the company financially through fines and penalties. These significant impacts result in other secondary consequences, such as damage to the brand and disruption to management and workforce planning.

(3.1.1.11) Principal efeito financeiro do risco

Selecione de:

☑ Maiores custos indiretos [operacionais]

(3.1.1.12) Horizonte de tempo para o qual está previsto o efeito significativo do risco na organização

Selecione todos os aplicáveis

☑ Curto prazo

(3.1.1.13) Probabilidade do risco provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Provável

(3.1.1.14) Magnitude

Selecione de:

☑ Alta

(3.1.1.16) Efeito previsto do risco na posição financeira, desempenho financeiro e fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Vale has not yet carried out a financial assessment of biodiversity risks.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Sim

(3.1.1.19) Valor previsto do efeito financeiro no curto prazo - mínimo (moeda)

3754636.83

(3.1.1.20) Valor previsto do efeito financeiro no curto prazo - máximo (moeda)

3754636.83

(3.1.1.25) Explicação do valor do efeito financeiro

In 2020, there were some occurrences that started in the area of direct influence of Vale operations in Carajás, which had a total duration of 148 days of fire. These occurrences had greatest impacts in the protected areas and although Vale has no influence on the causes, all the necessary resources were made available to carry out the combat and the total extinguishment of the outbreaks of fire. Expenditures to combat these fires had a financial impact of US 3,754,636.83. Therefore, Vale uses these values as an estimate of the possible financial impact in the event of new fires that impact the operation.

(3.1.1.26) Principal resposta ao risco

Conformidade, monitoramento e metas

☑ Implementação de boas práticas ambientais nas operações diretas

(3.1.1.27) Custo da resposta ao risco

0

(3.1.1.28) Explicação do cálculo do custo

Costs were not measured. Vale intends to start working on the financial assessment of biodiversity risks next year.

(3.1.1.29) Descrição da resposta

All Vale mining projects have a fire brigade ready to act when necessary.A third party will be hired if the fire is not contained, even in partnership with environmental agencies and firefighters.Vale's response to fires is known to be rapid and well coordinated, with a concerted effort to contain the fire as soon as possible.In 2023, aerial monitoring via helicopters and drones was conducted in fire-prone areas within and around protected areas, ensuring a swift response to potential incidents."Cold lines" were established through aerial applications and water releases in specific locations with a history of fires,increasing vegetation humidity.Vale also implements environmental education programs,in partnership with Ecology Brasil for the Carajás complex.The monthly Dialogues on Health, Safety, Environment, and Community focus on human-environment connection.Daily rounds were conducted by Forest Fire Fighting groups to ensure a prompt response to potential incidents. In a partnership between the Vale Fund,the Amazon Environmental Research Institute,Microsoft,and the Climate and Land Use Alliance,PrevisIA was launched as a public digital platform for identifying areas at increased risk for deforestation and wildfires in the Amazon.In Carajás all fire incidents in the mosaic of protected areas were recorded and all incidents received were attended to.In 2023,13 incidents were attended to and a total of 1,507 hectares were affected by forest fires.For the other complex's the fire brigade AMDA/Vale acts directly to combat forest fires, and it works powerfully to prevent these events and mitigate fire damage.For example, in the Southeast Corridor,the analysis of incident records in 2022 shows a lower number of fires,as well as a smaller total burned area compared to the year 2021.While 9,134 ha were burned in 232 incidents in 2021,in 2022 the fire affected 4,210 ha in 214 incidents. The brigades fought 166 fire incidents, which affected an area of 2,674 ha.

Mudanças climáticas

(3.1.1.1) Identificador de risco

Selecione de:

☑ Risk2

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Reputação

☑ Outro risco à reputação, especifique **:**Negative press related to not meeting GHG emissions reduction in line with commitments communicated to the market and the Paris Agreement, based on subsidiaries location.

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Operações diretas

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Omã
☑ Japan
☑ Suíça
☑ Brasil
☑ Canadá
☑ Malásia
☑ Holanda
☑ Indonésia
☑ Reino Unido da Grã-Bretanha e Irlanda do Norte

(3.1.1.9) Descrição específica da organização para o risco

With the aim of establishing a science-based climate strategy, Vale adheres to the "SBTi Criteira and Recommendations. Vale has committed to reduce its absolute GHG Scopes 1 and 2 emissions by 33% by 2030, aligned with the objectives of the Paris Agreement and is based on the actual emissions in 2017. The targeted year of 2030 was established to fall into line with the United Nations' 2030 Agenda for Sustainable Development. Vale strongly believes that the voluntary commitment of reducing GHG emissions can provide a level playing field within the company to be better prepared for policy and carbon pricing schemes implementation. It is essential to recognize that increased resource demand may pose a risk of supply shortages, potentially jeopardizing established targets. Not only the supply chain is

critical, but also, transitioning to a lower-carbon economy involves significant changes in technology, policy, law, and markets to address climate-related mitigation needs. Technological advancements or innovations, such as renewable energy, energy efficiency, battery storage, and carbon capture and storage, play a crucial role in this transition. A reputational risk is identified due to uncertainties in the maturity and deployment of low-carbon technologies, which could significantly affect Vale's ability to reduce Scopes 1 and 2 absolute emissions and negatively reverberate in the press, directly affecting Vale's ESG Strategy.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Sim

(3.1.1.26) Principal resposta ao risco

Infraestrutura, tecnologia e gastos

☑ Aumentar os gastos de capital relacionados ao ambiente

(3.1.1.27) Custo da resposta ao risco

4000000000

(3.1.1.28) Explicação do cálculo do custo

In 2020, Vale announced an investment of between 4 billion and 6 billion to reduce its direct and indirect emissions (Scopes 1 and 2) by 33% by 2030, compared to 2017 levels. This investment is part of the company's broader climate agenda, which includes reaching net-zero carbon emissions by 2050, aligning with the Paris Agreement's goal to limit global warming to below 2C. Vale also committed to reducing net emissions from its value chain (Scope 3) by 15% by 2035, from a 2018 baseline, focusing on partnerships with customers and suppliers to promote low-carbon solutions.

Biodiversidade

(3.1.1.1) Identificador de risco

Selecione de:

☑ Risk6

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Política

☑ Maior dificuldade na obtenção de autorizações para a operação

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Operações diretas

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.1.1.8) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(3.1.1.9) Descrição específica da organização para o risco

Vale may face stricter requirements and delays in receiving environmental licenses to operate other tailings dams. In recent years, social, environmental, health, and safety regulations have become increasingly stringent in many countries where Vale operates. This trend could adversely affect Vale's operations, such as restrictions on its activities and products, new requirements for environmental licenses and work permits, licensing and operating delays, increased costs, and recovery efforts.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Não

(3.1.1.26) Principal resposta ao risco

Conformidade, monitoramento e metas

☑ Maior conformidade com as exigências regulatórias

(3.1.1.27) Custo da resposta ao risco

0

(3.1.1.28) Explicação do cálculo do custo

The assessment of biodiversity risks will be worked on in a new stage. At the moment it is not possible to identify the effect individually.

Biodiversidade

(3.1.1.1) Identificador de risco

Selecione de:

☑ Risk7

(3.1.1.3) Tipos de risco e principal fator de risco ambiental

Físico crônico

☑ Operações em áreas importantes para a biodiversidade, ou adjacentes a elas

(3.1.1.4) Etapa da cadeia de valor onde o risco ocorre

Selecione de:

☑ Operações diretas

(3.1.1.6) País/área onde o risco ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.1.1.8) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1
☑ Projeto 2
☑ Projeto 3
☑ Projeto 4
☑ Projeto 5
☑ Projeto 6

(3.1.1.9) Descrição específica da organização para o risco

Vale's mining projects can affect areas with high biodiversity values. Although we work to reduce the impacts of our projects and operations on the environment as much as possible, our activities have direct and indirect impacts related to the need to suppress vegetation, since there is a locational rigidity in the pit areas, where the iron ore is found. The protected areas surrounding Vale's operational units can be directly and indirectly impacted by the implementation and operation of mining projects. Part of the Project 1 area is located within the Carajás National Forest, a protected area for sustainable use under Brazilian law. The decree that created this forest allows anthropogenic activities, including mining. This protected area corresponds to IUCN category VI. Projects 3, 4 and 5 interact with the Southern Environmental Protection Area (APA Sul), a sustainable use protected area (IUCN Category V) whose creation decree allows anthropogenic activities, including mining. Projects 2 and 6 are also close to protected areas. Most of the protected areas near or adjacent to our operations are mainly Vale-owned areas, such as Private Natural Heritage Reserves (IUCN Category IV), some of which have already been created and others which are in the process of being created.

(3.1.1.17) É possível quantificar o efeito financeiro do risco?

Selecione de:

☑ Não

(3.1.1.26) Principal resposta ao risco

Conformidade, monitoramento e metas

☑ Implementação de boas práticas ambientais nas operações diretas

(3.1.1.27) Custo da resposta ao risco

0

(3.1.1.28) Explicação do cálculo do custo

The assessment of biodiversity risks will be worked on in a new stage. At the moment it is not possible to identify the effect individually.
[Adicionar linha]

(3.1.2) Informe a quantia e a proporção das métricas financeiras a partir do ano de reporte que sejam vulneráveis aos efeitos significativos dos riscos ambientais.

Mudanças climáticas

(3.1.2.1) Métrica financeira

Selecione de:
☑ O CAPEX

(3.1.2.2) Montante da métrica financeira vulnerável a riscos de transição para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

0

(3.1.2.3) Porcentagem da métrica financeira total vulnerável a riscos de transição para esse problema ambiental

Selecione de:
☑ Menos de 1%

(3.1.2.4) Montante da métrica financeira vulnerável a riscos físicos para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

170000000

(3.1.2.5) Porcentagem da métrica financeira total vulnerável a riscos físicos para esse problema ambiental

Selecione de:

☑ Menos de 1%

(3.1.2.6) Montante de CAPEX no ano de reporte implementado aos riscos relacionados a esse problema ambiental

238000000

(3.1.2.7) Explicação dos valores financeiros

Refer to the risks financial impacts presented in question 3.1.1 The amount of CAPEX presented in column 7 is related to the investments in 2023 in decarbonization projects to mitigate Risk2 presented in this document.

Água

(3.1.2.1) Métrica financeira

Selecione de:

☑ Receita

(3.1.2.2) Montante da métrica financeira vulnerável a riscos de transição para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

0

(3.1.2.3) Porcentagem da métrica financeira total vulnerável a riscos de transição para esse problema ambiental

Selecione de:

☑ Menos de 1%

(3.1.2.4) Montante da métrica financeira vulnerável a riscos físicos para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

17131440000

(3.1.2.5) Porcentagem da métrica financeira total vulnerável a riscos físicos para esse problema ambiental

Selecione de:

☑ 41-50%

(3.1.2.7) Explicação dos valores financeiros

To assess Vale's financial exposure to the risk of dam failure, we considered the impact on revenues resulting from such an event. We focused on the dams with the highest risk of failure, those classified as being at an emergency level. The rupture of a dam can result in the total shutdown of the site where it is located. Based on these premises, we analyzed the revenues of each site with dams at an emergency level and summed these revenues to determine the total financial exposure in case of a rupture. The total impacted revenues are approximately USD 17,131,440,000, considering the production in 2023. This amount represents 41% of Vale's total revenue for that year. It is worth noting that the dams are continuously monitored, with mitigation and control measures implemented and verified. These measures are based on risk studies and supported by external consultant groups (ITRB and EOR) to mitigate any potential existing risks.
[Adicionar linha]

(3.2) Em cada bacia hidrográfica, quantas instalações estão expostas a efeitos significativos dos riscos hídricos e qual porcentagem do total de instalações isso representa?

Row 1

(3.2.1) País/área e Bacia hidrográfica

Brasil

☑ Rio Doce

(3.2.2) Estágios da cadeia de valor em que as instalações em risco foram identificadas nessa bacia hidrográfica

Selecione todos os aplicáveis

☑ Operações diretas

(3.2.3) Número de instalações com operações diretas expostas a risco hídrico nessa bacia hidrográfica

2

(3.2.4) Percentual do total de instalações da organização com operações diretas expostas a risco hídrico nessa bacia hidrográfica

Selecione de:

☑ 1-25%

(3.2.7) Valor de produção para as atividades de metais e mineração associadas a essas instalações (moeda)

8924173000

(3.2.10) Porcentagem da receita global total da organização que poderá ser afetada

Selecione de:

☑ 21-30%

(3.2.11) Explique

The assessment based on Indicator 6.4.2 of the United Nations 2030 Agenda, calculated from the ratio between the total fresh water withdrawn in the river basin and the total water resources available for use indicates that this facility is at Critical water stress level. The potential financial impact was calculated considering the average price of iron ore as 120.11 per ton (according to a report from IBRAM) and fully closed activities.

Row 2

(3.2.1) País/área e Bacia hidrográfica

Brasil

☑ Outro, especifique **:**Itacaiunas

(3.2.2) Estágios da cadeia de valor em que as instalações em risco foram identificadas nessa bacia hidrográfica

Selecione todos os aplicáveis

☑ Operações diretas

(3.2.3) Número de instalações com operações diretas expostas a risco hídrico nessa bacia hidrográfica

1

(3.2.4) Percentual do total de instalações da organização com operações diretas expostas a risco hídrico nessa bacia hidrográfica

Selecione de:

☑ 1-25%

(3.2.7) Valor de produção para as atividades de metais e mineração associadas a essas instalações (moeda)

11146208000

(3.2.10) Porcentagem da receita global total da organização que poderá ser afetada

Selecione de:

☑ 21-30%

(3.2.11) Explique

The assessment based on Indicator 6.4.2 of the United Nations 2030 Agenda, calculated from the ratio between the total fresh water withdrawn in the river basin and the total water resources available for use indicates that this facility is at Critical water stress level. The potential financial impact was calculated considering the average price of iron ore as 120.11 per ton (according to a report from IBRAM) and fully closed activities.

Row 3

(3.2.1) País/área e Bacia hidrográfica

Brasil

☑ Outro, especifique **:**Itacaiunas

(3.2.2) Estágios da cadeia de valor em que as instalações em risco foram identificadas nessa bacia hidrográfica

Selecione todos os aplicáveis

☑ Operações diretas

(3.2.3) Número de instalações com operações diretas expostas a risco hídrico nessa bacia hidrográfica

2

(3.2.4) Percentual do total de instalações da organização com operações diretas expostas a risco hídrico nessa bacia hidrográfica

Selecione de:
☑ 1-25%

(3.2.7) Valor de produção para as atividades de metais e mineração associadas a essas instalações (moeda)

468429000

(3.2.10) Porcentagem da receita global total da organização que poderá ser afetada

Selecione de:
☑ 1-10%

(3.2.11) Explique

The assessment based on Indicator 6.4.2 of the United Nations 2030 Agenda, calculated from the ratio between the total fresh water withdrawn in the river basin and the total water resources available for use indicates that this facility is at Critical water stress level. The potential financial impact was calculated considering the average price of iron ore as 120.11 per ton (according to a report from IBRAM) and fully closed activities.
[Adicionar linha]

(3.3) No ano de reporte, a organização foi submetida a multas, ordens de execução e/ou outras penalidades pela violação de alguma lei relacionada à água?

(3.3.1) Violações regulatórias relacionadas à água

Selecione de:

☑ Sim

(3.3.2) Multas, ordens de execução e/ou outras penalidades

Selecione todos os aplicáveis

☑ Multas, mas nenhuma considerada significativa

(3.3.3) Explique

The answers provided were based on the information available at the Company's database of administrative and judicial proceedings. For purposes of the determining the significant regulatory violations, it was adopted the criteria used in GRI 2-27 indicator of the Company's 2023 Integrated Environmental Report, which are detailed in Vale's ESG Databook, available at https://vale.com/esg/document-library.
[Linha fixa]

(3.3.1) Informe o número total e o valor financeiro de todas as multas relacionadas à água.

(3.3.1.1) Número total de multas

9

(3.3.1.2) Valor total das multas

35510385.1

(3.3.1.3) Porcentagem sobre o total de instalações/operações associadas

8.33

(3.3.1.4) Número de multas em comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(3.3.1.5) Explique

N/A
[Linha fixa]

(3.4) No ano de reporte, a organização foi submetida a multas, ordens de execução e/ou outras penalidades pela violação de alguma lei relacionada à biodiversidade?

(3.4.1) Alguma penalidade pela violação de leis relacionadas à biodiversidade?

Selecione de:
☑ Sim, mas nenhuma considerada significativa

(3.4.2) Explique

In 2023, no fines or non-pecuniary sanctions were imposed for violations of biodiversity protection rules relating to mining operations in Brazil. Regarding the activities carried out by PTVI in Indonesia, a fine was imposed for suppressing vegetation without authorization. However, this fine is not considered significant, according to the criteria adopted by PTVI to determine the cases reported in the company's Integrated Report. In order to determine significant cases of non-compliance with environmental laws and regulations, the following criteria are adopted: (i) value-based criterion: cases in which a monetary penalty has been applied with a possible probable prognosis equal to or greater than R5 million (the same cut-off used to define the relevant environmental processes, which corresponds to 10% of the maximum amount provided for in the legislation for the fine applicable to environmental administrative infractions); (ii) materiality criterion: cases in which the illicit conduct charged is classified under the Environmental Crimes Law (9.605/1998), even if a monetary sanction of less than R5 million has been applied or a non-monetary sanction has been applied; and (iii) specifically for non-monetary sanctions, all those applied in the reporting year should be reported, with the exception of warnings, which, as expressly provided for in Brazilian environmental legislation, are applicable to "administrative infractions of lesser harm to the environment" (therefore not significant).
[Linha fixa]

(3.5) Alguma(s) das operações ou atividades da organização é regulamentada por um sistema de precificação do carbono (por ex., ETS, Cap & Trade ou Carbon Tax)?

Selecione de:
☑ Sim

(3.5.1) Selecione a(s) regulamentação(ões) de precificação do carbono que causam impactos nas operações da organização.

Selecione todos os aplicáveis

☑ Encargos federais sobre o combustível do Canadá

☑ Taxação de carbono do Japão

☑ Taxação de carbono de Newfoundland e Labrador

(3.5.3) Preencha a tabela a seguir para cada um dos sistemas de taxação que regulamentam a empresa.

Encargos federais sobre o combustível do Canadá

(3.5.3.1) Data de início do período

01/01/2023

(3.5.3.2) Data de fim do período

12/31/2023

(3.5.3.3) Porcentagem do total de emissões de Escopo 1 abrangidas pela taxação

0.15

(3.5.3.4) Custo total da taxa paga

603761.83

(3.5.3.5) Explique

Vale pays straight tax on Fuel - totaling CAD 832,715 in 2023, which was equivalent to USD 603,761.83.

Taxação de carbono do Japão

(3.5.3.1) Data de início do período

01/01/2023

(3.5.3.2) Data de fim do período

12/31/2023

(3.5.3.3) Porcentagem do total de emissões de Escopo 1 abrangidas pela taxação

0

(3.5.3.4) Custo total da taxa paga

0

(3.5.3.5) Explique

Taxation in Japan is paid indirectly on the purchase of energy and gas. So, the value is included in the energy cost.

Taxação de carbono de Newfoundland e Labrador

(3.5.3.1) Data de início do período

01/01/2023

(3.5.3.2) Data de fim do período

12/31/2023

(3.5.3.3) Porcentagem do total de emissões de Escopo 1 abrangidas pela taxação

0.54

(3.5.3.4) Custo total da taxa paga

4884818.92

(3.5.3.5) Explique

Vale pays tax - totaling CAD 6,737,647 in 2023, which was equivalent to USD 4,884,818.92.
[Linha fixa]

(3.5.4) Qual é a estratégia da organização para cumprir com os sistemas que a regulamentam ou que ela prevê que a regulamentarão?

Vale recognizes the risks and opportunities imposed by global carbon pricing schemes. To minimize risks and maximize opportunities, Vale has a Climate Change Policy that outlines guidelines for managing and reducing the company's GHG emissions. Our compliance strategy includes establishing an internal carbon price, promoting renewable sources, enhancing energy efficiency, and leveraging biofuels and electrification technology. These guidelines unfold in the implementation of the Vale Net Zero strategy. The Low Carbon Forum, coordinated by the Sustainability Executive Committee and supported by other executive committees, including participation from Vale's CEO, is responsible for the governance of this strategy. Monthly meetings with leadership and technical teams facilitate a comprehensive approach to developing low carbon projects and understanding regulatory risks. As a result of Vale's efforts, the progress towards the Scope 1 and 2 target is 20.4%, and towards the scope 3 target, it is 14.8%. To operationalize the Vale Net-Zero Strategy, we adopted an internal carbon price (shadow price) of USD 50 per ton of CO2 equivalent. This price is applied in the economic-financial analysis of current and capital investments, using the Marginal Abatement Cost Curve (MACC) for project prioritization. This internal pricing mechanism aligns with carbon pricing regulations like the Canada Fuel Charge, which was CAD 65 (about USD 48) per ton by 2023 and will reach CAD 170 per ton by 2030, and Japan's carbon tax at JPY 289 (about USD 2) per ton. Our internal pricing of USD 50 per ton ensures compliance and positions us ahead of regulatory requirements.xOur carbon pricing methodology is applied globally to all projects and investments that produce GHG emissions or involve deforestation. Implemented in June 2020, this methodology ensures we prioritize projects that are competitive and compliant with carbon pricing regulations, aiming for a 33% reduction in scope 1 and 2 emissions by 2030, using 2017 as the baseline, in line with the Paris Agreement. Our goal is to achieve net zero emissions in scopes 1 and 2 by 2050 and reduce scope 3 emissions by 15% by 2035, encouraging our clients and suppliers to align with our commitment. As internal carbon pricing is a process that can mature over time depending on the capabilities presented within the company, in 2023, Vale started the implementation of carbon price curves from 2024 to 2053 related to the economic stage of the region's hotspots of the value chain, instead a fixed shadow price of USD 50/tCO2e. The curves were applied during the Strategic Planning cycle focusing on cost forecasting due to the increase of compliance markets implementation, coverage and pricing, and revenue related to the value in use of Vale's products. New developments are foreseen for 2024. Vale is committed to transparency about its decarbonization approach and, in 2023, published its first report on scopes 1,2 and 3 – Management of GHG emissions and decarbonization strategy. The report presents the emissions volumes for all scopes and informs about the plans and actions to reduce emissions. Talking about results, in Newfoundland & Labrador, our Long Harbor facility typically holds excess emissions allowance credits at year end, which we allocate to our Voisey's Bay operation to help reduce our total carbon tax payable. We are also able to purchase excess credits from neighboring industrial users (e.g. NL Hydro), which can yield partial reductions in carbon tax (typically 100k to 300k in annual savings). In recent last years, Vale Base Metals has decommissioned the superstack, resulting in up to 40% decrease in GHG emissions and has deployed. Another initiative was the Green Energy Vehicle program, that deployed close to four dozen battery-electric equipment in Canada to displace diesel demand.

(3.6) Foi identificada alguma oportunidade ambiental que tenha causado um efeito substancial sobre a organização no ano de reporte, ou que esteja prevista para causar um efeito substancial sobre a organização no futuro?

	Oportunidades ambientais identificadas
Mudanças climáticas	*Selecione de:* ☑ Sim, identificamos oportunidades, e algumas/todas estão sendo realizadas
Água	*Selecione de:* ☑ Sim, identificamos oportunidades, e algumas/todas estão sendo realizadas
Biodiversidade	*Selecione de:* ☑ Sim, identificamos oportunidades, e algumas/todas estão sendo realizadas

[Linha fixa]

(3.6.1) Dê detalhes sobre as oportunidades ambientais identificadas que tenham causado um efeito substancial sobre a organização no ano de reporte ou que estejam previstas para causar um efeito substancial sobre a organização no futuro.

Mudanças climáticas

(3.6.1.1) Identificador de oportunidades

Selecione de:

☑ Opp1

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Produtos e serviços

☑ Aumento das vendas de produtos e serviços existentes

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

☑ Canadá

☑ Indonésia

(3.6.1.8) Descrição específica da organização

The global demand for copper is expected to be driven by its use in electric passenger vehicles, solar energy systems, and wind turbines, while nickel is primarily used for electric vehicle batteries. To meet this global demand, Vale Base Metals has a robust pipeline of projects focused on nickel and copper production, with operations in the North Atlantic, South Atlantic, and Indonesia. Capital program will drive a significant potential increase in copper production from about 321kt in 2023 to 375-410kt/year in 2026, 500kt/year in 2028 and 900kt/year in 2030. Regarding nickel production, the potential increase is from roughly 165kt in 2023 to more than 190-210kt/year in 2026, 250kt/year in 2028 and more than 300kt/year in 2030. One of Vale's strategic pillars is to foster low-carbon solutions, which include: Focus on high quality products and resources; Iron solutions; Energy transition metals; and Circular mining. Our plan is to debottleneck the supply of sustainable energy transition metals through an agile project development and flexible approach to adapt to evolving technologies, including by: Expanding copper production being the preferred nickel supplier to the electric vehicle industry, with 30% to 40% of our Class I nickel; supplied to the electric vehicle market; accelerating growth through our energy transition operations by seeking partnerships; and pursuing selective inorganic growth.

(3.6.1.9) Principal efeito financeiro da oportunidade

Selecione de:

☑ Aumento de receita resultante de uma maior demanda por produtos e serviços

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Longo prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média-alta

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Vale Base Metals anticipate increased market demand for its Nickel and Copper products, based on the higher adoption of Ni- and Cu-intensive equipment, such as electric car, renewable electricity and electric cables.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Sim

(3.6.1.21) Valor previsto do efeito financeiro em longo prazo - mínimo (moeda)

6665332500

(3.6.1.22) Valor previsto do efeito financeiro no longo prazo - máximo (moeda)

8146517500

(3.6.1.23) Explicação dos valores do efeito financeiro

*The potential financial impact will come from the increase in Vale's revenue for nickel (Ni) and copper (Cu) estimated for 2030. Cost breakdown: (a x c) (b x d) potential revenue Parameter a: copper price ranging from US7,000-10,000/ton Parameter b: nickel price ranging from US18,000-24,000/ton Parameter c: copper volume: 430 ktpa Parameter d: nickel volume: 218 ktpa Note: We emphasize The potential financial impact will come from the increase in Vale's revenue for nickel (Ni) and copper (Cu) estimated in the long term. The increased additional yearly revenue is estimated by the increase production times the forecasted price of the product. Additional yearly revenue in 2030 (increase in copper production in 2030*copper price) (increase in nickel production in 2030*nickel price) Parameter a: Copper price of US9,188.5/ton; Parameter b: Nickel price of US19,126/ton. These price predictions are derived from the Australian Government's Office of the Chief Economist (OCE), where we calculated these values by averaging the expected price projections for the period. To estimate the minimum and maximum values, a*

10% decrease in both metals price was used for minimum and 10% increase for the maximum. Parameter c: Copper volume increase of 550 ktpa (considering the current value of 350ktpa and the expected value of 900ktpa in 2030); Parameter d: Nickel volume increase of 125 ktpa (considering the current value of 175ktpa and the expected value of 300ktpa in 2030). These production estimates are based on the Vale Base Metals Asset Review document. 1 – ((a-10%) x c) ((b-10%) x d) (8,206.65 x 550,000) (17,213.40 x 125,000) 6.665.332.500,00 2 - ((a10%) x c) ((b10%) x d) (10,030.35 x 550,000) (21,038.60 x 125,000) 8,146,517,500 Note: The calculations are the company's expectations and may not materialize, due to risks such as operational challenges, global economic conditions, capital markets, commodity prices, competition, and uncertainties related to mineral resource estimation and licensing.

(3.6.1.24) Custo para concretizar a oportunidade

25000000000

(3.6.1.25) Explicação do cálculo do custo

In July 2023, Vale signed a binding agreement with Manara Minerals, a joint venture between Ma'aden and Saudi Arabia's Public Investment Fund, under which Manara Minerals will invest in Vale Base Metals Limited (VBM), the holding entity for Vale's energy transition metals business. This strategic partnership will fast-track VBM's expected US 25-30 billion capital program over the next decade and help drive a significant potential increase in VBM's production from about 350kt/year to 900kt/year in copper and from roughly 175kt/year to more than 300kt/year in nickel. This program will generate jobs, economic growth, procurement and supplier opportunities as well as socioeconomic benefits in communities across the key critical mineral jurisdictions where VBM operates in Brazil, Canada and Indonesia.

(3.6.1.26) Estratégia para concretizar a oportunidade

The strategy is based on the increased sales of existing products, increasing our production through our capital allocation program. Over the last 18 months, Vale has taken a series of strategic actions to position its energy transition metals business as a critical mineral supplier of choice. This includes creation of Vale Base Metals (VBM) to drive operational efficiency and leverage a distinct future-facing commodities platform, supported by a new governance structure and dedicated board of directors with deep industry expertise. VBM is uniquely placed as North America's largest integrated nickel producer and among the largest copper businesses globally with the scale, resources and capital to deliver critical minerals essential for the global decarbonization and electrification megatrends. The company has secured agreements to supply low carbon and high purity nickel to major automakers and is strategically focused on expanding mine life and development of growth projects across the portfolio.

Água

(3.6.1.1) Identificador de oportunidades

Selecione de:

☑ Opp1

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Eficiência de recursos

☑ Recuperação da água com tratamento do esgoto

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.6) Bacia hidrográfica em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Outro, especifique **:**Santa Maria River Basin

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 8

(3.6.1.8) Descrição específica da organização

Since 2023, the company started a project led by a multidisciplinary team (from Innovation to operations areas) with the aim of bringing sustainable water sources and water independence for Tubarao Unit. Tubarao unit operations consume around 240 thousand liters per month for industrial purposes. Currently, for this volume and purpose, the unit consumes new water (from the Santa Maria River Basin) supplied by the local sanitation company. After a deepen study of the quality requirements in the industrial processes, it was identified that this new water consumption can be replace with reuse water. The project will take place at Tubarão Unit in the city of Vitoria / ES. This unit is 14km² long and has operations of a Railway, Briquette Plant, 4 Pelletizing Plants and Port. And now the project is studying, together with the local sanitation company, the best operation and business model to implement reuse water from the city sewage treatment replacing the current new water in these Tubarao industrial operations.

(3.6.1.9) Principal efeito financeiro da oportunidade

Selecione de:

☑ Menores custos indiretos (operacionais)

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Alta

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

The project has a drive to not incur additional costs to the company with the solution. With the reuse water solution, it is expected to even reduce opex with water costs expenses and therefore improve financial performance.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Sim

(3.6.1.19) Valor previsto do efeito financeiro em médio prazo - mínimo (moeda)

1500000

(3.6.1.20) Valor previsto do efeito financeiro em médio prazo - máximo (moeda)

6000000

(3.6.1.23) Explicação dos valores do efeito financeiro

In an extreme scenario of water crisis in Espírito Santo, in which the supply of new water for industrial use from external conventional sources would cease (CESAN's new and potable water contract with collection from the Santa Maria River), the Tubarão Water Management Business Case presents renewed water (water recycled from third-party sanitary effluents - population) as an alternative, sustainable and constant source for industrial use, enabling operational continuity and representing the maintenance of the revenue of this unit, which in 2023 represented approximately US 3 billion dollars. The Tubarão Unit represents 54% of Vale's pelletizing production and revenue annually (source: 20-F of 2023). In addition, the risk of water crises in the region is increasing, and in 2023 and 2024, resolutions were published by the State Water Resources Agency (AGERH) declaring a State of Attention for the water situation in Espírito Santo. Even without considering a scenario of water crisis, the search for alternative sources and solutions indicated in the Tubarão Water Management Business Case, is estimated to provide a gain in sustainability by replacing conventional water sources for industrial use, improving the water management of the territory by using sanitary effluents generated by the population and reducing competition for drinking water provided by the CESAN concessionaire, in addition to bringing a financial gain for Vale in opex of up to US 30 million dollars in 20 years. Therefore, considering this value of 30 million divided into 20 years, it follows that in year 1, this value will be equivalent to 30 million divided by 20, obtaining 1,500,000 and, in the maximum value of 4 years of reporting, 6,000,000.

(3.6.1.24) Custo para concretizar a oportunidade

0

(3.6.1.25) Explicação do cálculo do custo

We currently do not have an estimate of the implementation costs in the model under negotiation, as the costs/investments are made by the partner/supplier and passed on via the reuse water tariff. Our internal adjustments are also already included in a project to increase the Unit's reservoir, so the current assumption is that there is no additional investment due to the implementation of renewed water in Tubarão.

(3.6.1.26) Estratégia para concretizar a oportunidade

Optimizing water management in Tubarao is a critical issue for the company and was therefore included as a strategic agenda for the board of directors, which monitors the progress of these actions on a monthly basis. A multidisciplinary working group was created, bringing together several specialists from the company to cooperate and work towards the same goal and seek a better solution together, bringing agility to governance, analysis and decision-making. Specialists from the following areas came together for this initiative: Innovation (to bring the vision of new solutions and global trends), Environmental Services (Operation responsible for water management at the unit), Regional and Corporate Environmental Services (with an eye on the Environment, standards, regulations, goals and guidelines), Legal, Supplies, Current and Capital Engineering, Maintenance. All areas that may be involved in the path of Tubarao's water and that can work on this shift from new water to reused water. The strategy to implement reuse water in Tubarao Unit for industrial purposes is partnering and negotiating with the local sanitation company to develop a suitable model business.

Biodiversidade

(3.6.1.1) Identificador de oportunidades

Selecione de:

☑ Opp1

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Capital reputacional

☑ Melhores relações com a comunidade

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(3.6.1.8) Descrição específica da organização

The Horizons Project, established by the partnership between Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) and Vale, combines conservation with generating income, preserving rivers, and mitigating greenhouse gas emissions through carbon capture. The Project has been working on five interconnected subprojects related to enhancing the management of environmental licensing knowledge; expansion of the region's economic matrix with a focus on agroforestry and agricultural and extractive activities; conservation of water resources; land regularization and biodiversity monitoring. The Cooperation Agreement between ICMBio and Vale was signed (Process SEI ICMBio No. 02122.001002 / 2019-83) on April 22, 2020.

(3.6.1.9) Principal efeito financeiro da oportunidade

Selecione de:

☑ Aumento de receita resultante de uma maior demanda por produtos e serviços

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Longo prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Mais provável que improvável (50–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Investing in this project can support the reduction of indirect costs in the future because the actions that will be implemented are associated with the resilience of nature and society around the operations, recovering and maintaining the forest and important ecosystem services for the surrounding communities and also for the company's operations.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Não

(3.6.1.24) Custo para concretizar a oportunidade

2000000

(3.6.1.25) Explicação do cálculo do custo

The partnership has an estimated value of two million dollars over a five-year period.

(3.6.1.26) Estratégia para concretizar a oportunidade

One of the areas of action within the Project is the creation of ecological corridors to connect the protected area mosaic to other forests, landscapes-especially in the northeast, the Rio Negro protected area, the Lindoeste area, and the southeast of the mosaic-while advancing the social and economic development of the region through the implementation of agroforestry systems. This project has as much of a positive impact on the biodiversity of Carajás as it does on Vale's reputation, adding more value to the company. The main key results achieved between November 2022 and January 2023 were: - III Lecture Cycle; - I Castanheira Seminar and Workshop; - Annual planning and action monitoring; - Field activities for scientific research; - Field activities and implementation of the pilot project in Conservation Agricultures; - implementation of technical support scholarships in various areas of NGI Carajás (Carajás Integrated Management Center); - Preparatory workshops for the elaboration of the Management Plan for Campos Ferruginosos National Park; - Completion of the Protocol for fauna sighting of the Monitora Program.

Mudanças climáticas

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Mercados

☑ Expansão para novos mercados

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Provável (66–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Vale is developing an asset-light model that prioritizes the creation of premium carbon offsets. This model incorporates a risk management approach and investment optimization to reduce acquisition costs, drive positive socio-environmental outcomes, and address future financial risks effectively. Aligned with market demands, the model seeks to fulfill Vale's offset needs at a competitive cost through: a) optimizing credit access costs by engaging in projects at various stages of development and through different access methods, b) considering risk and cost scenarios for different avenues of offset generation and entry times within a portfolio view, and c) focusing on carbon generation methods with superior technical integrity and reduced project performance risks.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Sim

(3.6.1.19) Valor previsto do efeito financeiro em médio prazo - mínimo (moeda)

361548000

(3.6.1.20) Valor previsto do efeito financeiro em médio prazo - máximo (moeda)

458160000

(3.6.1.23) Explicação dos valores do efeito financeiro

The company “Biomas,” formed by Vale and other partners (Vale's ownership in the company Biomas is 16.6%), aims to cover a total of 4 million hectares of native forests across various Brazilian biomes over a period of 20 years—2 million hectares dedicated to restoration and 2 million to conservation. This initiative has the potential to remove 600 million tCO2e and avoid the emissions of 300 million tCO2e. It is important to note that this opportunity applies to the entire group of companies, which is why the calculation was multiplied by Vale’s 16.6% stake in Biomas. Additionally, within the generated credits, Vale has a purchase preference

alongside with the other partners. To conduct this financial projection exercise, we used 2023 data and prices based on the MSCI carbon markets price projection analysis. To more accurately assess the business's potential, having some projects already in development is essential, with future carbon flows defined and transaction prices executed undersigned agreements.Breakdown:Parameter A: 900 million tCO2e captured (600 million from restoration and 300 million from conservation) over 4 million hectares (2 million hectares for restoration and 2 million for conservation) over approximately 20 years.Parameter B: Carbon prices ranging from USD 14.3/tCO2e (minimum) to USD 17/tCO2e (maximum) for removal, according to MSCI carbon markets price projection analyses, and from USD 7.7/tCO2e to USD 12/tCO2e for conservation, based on MSCI carbon markets price projection analyses.Parameter C: Vale's ownership in the company Biomas is 16.6%. Parameter D: Expected financial impact in the medium term, meaning in the next 4 years. Anticipated financial effect figure in the medium-term – minimum ((300 million tCO2e captured via conservation projects x USD 7.7/tCO2e/)20 years) ((600 million tCO2e via removal projects x USD 14.3/tCO2e)/20 years)) 10,890,000,000 x 0,166 x 4 years 361,548,000.Anticipated financial effect figure in the medium-term – maximum (currency): ((300 million tCO2e captured via conservation projects x USD 12/tCO2e/20 years) (600 million tCO2e via removal projects x USD 17/tCO2e)/20years) 13,800,000,000 x 0,166 x 4 years 458,160,000. The calculations are the company's expectations and may not materialize, due to risks such as operational challenges, global economic conditions, capital markets, commodity prices, competition, and uncertainties related to mineral resource estimation and licensing.

(3.6.1.24) Custo para concretizar a oportunidade

24000000

(3.6.1.25) Explicação do cálculo do custo

The announced total of USD 24 million (R120 million) is divided equally among the six companies participating in the initiative, with each contributing USD 4 million (R20 million) allocated to SG&A.

(3.6.1.26) Estratégia para concretizar a oportunidade

Case study - Situation: During the COP27, in Egypt, Vale, Itaú Unibanco, Marfrig, Rabobank, Santander and Suzano, announced the creation of a company dedicated to forest restoration, conservation, and preservation activities in Brazil: Biomas - which foresees the planting of approximately 2 billion native trees. Task: Vale is confident that the initiatives undertaken by Biomas will generate long-term value for our stakeholders and contribute towards a more sustainable future for everyone. Action: As part of these initiatives, the group expects to stimulate regional development and strengthen local communities. Biomas will have an initial contribution of US 1 from each partner in the first year. The objective is to promote a financially sustainable business model, making each restoration, conservation, and preservation project viable by selling carbon credits. Result: The Biomas project aims, over 20 years, to achieve a restored and protected area of 4 million hectares of native forests in different Brazilian biomes, such as the Amazon, Atlantic Forest, and Cerrado. The area is equivalent to the territory of Switzerland or the state of Rio de Janeiro. The plan is to restore 2 million hectares of degraded areas by planting approximately 2 billion native trees in a large-scale business model. The company will also conserve and preserve 2 million hectares and predict between removals and avoided emissions, reducing from the atmosphere approximately 900 million tons of carbon equivalent over a period of two decades. In addition, it is estimated that the new company will contribute to the protection of more than 4,000 species of animals and plants. Initial financial contribution (USD 24 MM) from partners to Biomas. It is assumed that through Biomas, the cost of carbon removal will be optimized and shared among the partners.

Mudanças climáticas

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Produtos e serviços

☑ Desenvolvimento de novos produtos ou serviços por meio de P&D e inovação

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

☑ China

☑ Malásia

☑ Omã

☑ Arábia Saudita

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Alta

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Vale believes that there will be a market gain with these new products with a lower carbon footprint, but it is still unable to identify the effects separately.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Sim

(3.6.1.19) Valor previsto do efeito financeiro em médio prazo - mínimo (moeda)

516279273

(3.6.1.20) Valor previsto do efeito financeiro em médio prazo - máximo (moeda)

631008000

(3.6.1.23) Explicação dos valores do efeito financeiro

The primary potential financial effect of this opportunity is the return on investment in low-emission technology, which can be related mainly to the avoided costs with iron pellet emissions. To calculate the return on investment, we estimated the iron pellet emissions-related avoided costs, considering minimum and maximum production projections for 2032 and for the period of 2032 to 2050. These were then applied to the weighted average cost of capital (WACC) and to the net present value (NVP). The iron pellet intensity in Ecoinvent 3.8 is calculated from cradle-to-gate, using a reference iron ore grade of 65%, which has an associated emission of 154.9 kg CO2e/t. To align with gate-to-gate assumptions for pellets referring to the iron grade of 65%, an 80%1 multiplication factor was applied, resulting in 123.9 kg CO2e/t. It was then applied for an iron grade of 66% (Vale's average), the embedded emissions amount to 187.8 kg CO2e/t. Therefore, the emissions calculation is: 187.8 kg CO2e/t pellet x 80%2 (reduced emissions) 150.4 kg CO2e/t briquette x 50 USD/tCO2e (shadow price) 7.51 USD/t briquette. Disclosed Volumes for 2032: 30,000,000 t/year. For the max. and min. values, we considered a 10% variation above and below the expected volume assumptions. Annual Absolute Cost Avoidance Calculations: • Min.: 27,000,000 t/year x 7.51 USD/t briquette 202,824,000 USD/year. • Max.: 33,000,000 t/year x 7.51 USD/t briquette 247,896,000 USD/year. Absolute Cost Avoidance from 2032 to 2050: • Min.: 202,824,000 USD x 28 years 5,679,072,000 USD. • Max.: 247,896,000 USD x 28 6,941,088,000 USD. Average Mining WACC: 10% (Expert Group, 2019) Net Present Value (NPV): • Min. NPV: 516,279,273 USD. • Max. NPV: 631,008,000 USD. 1 Ecoinvent provides reference values on a cradle-to-gate basis. Since gate-to-gate data is required for the calculation, a correction factor of 80% has been applied 2Product emits about 80% less CO2 in its manufacture in relation to pellets, contributing to reduce emissions of scopes 1 and 2 of the company.These calculations are based on the company's expectations and may not materialize due to risks such as operational challenges, global economic conditions, capital market volatility, commodity price fluctuations, competition, and uncertainties related to mineral resource estimation and permitting.

(3.6.1.24) Custo para concretizar a oportunidade

240000000

(3.6.1.25) Explicação do cálculo do custo

Cost Breakdown (USD 240 million): As part of its strategy to leverage opportunities in the demand for iron ore solutions, Vale has been investing in two briquette plants at the Tubarão complex in Brazil, with a total capacity of 6 million tons per year. The ramp-up began in 2024. Commissioning tests started in August 2023 and showed promising results.

(3.6.1.26) Estratégia para concretizar a oportunidade

Case - Situation: The Scope 3 reduction target is part of Vale's strategy to zero net direct and indirect carbon emissions (scopes 1 and 2) by 2050. As part of these initiatives, the company will invest between US 4 and 6 billion towards reducing scopes 1 and 2 emissions by 33% by 2030. Also, Vale presented at 2020 the goal of reducing net scope 3 emissions by 15%, related to its supply chain and customers, by 2035. The percentage decrease considers 2018 as the base year, when 586 million tons of CO2 equivalent (MTCO2eq) from its value chain were accounted for. This is similarly a science-based target that aligns with the 2C global warming scenario. Since Vale announced its Scope 3 targets, the company has been creating a roadmap with steelmaking clients in order to discuss partnerships for decarbonization projects. Task: As part of its plan to reach Scope 3 targets, Vale is investing in sustainable solutions for steel production inputs for both electric furnaces and conventional blast furnaces used in steelmaking. As well as invests in research and innovation to revolutionize the steel production process and reduce CO2 emissions. Action: In September 2021, Vale introduced the briquette, a new product developed by the company over almost 20 years; it may reduce by up to 10% the emission of greenhouse gases (GHG) in steel production by its steelmaking customers. The product also reduces the emission of particulates and gases such as sulfur dioxide (SOX) and nitrogen oxide (NOX) and eliminates water use in its production. Additionally, Vale is promoting the development of Mega-Hubs for a more efficient steel production using the direct reduction route, a production route that emits 60% less GHG than the integrated steelmaking route. We are advancing on our agreements to create mega hubs in the Middle East and are also exploring opportunities in Brazil and the United States. By investing in innovation and creating solutions for our clients, we are also fostering low-carbon solutions. Result: The production of briquette will initially be carried out at pellet plants 1 and 2, at the Tubarão Unit, in Vitória, Brazil, which are being converted for this purpose. The estimate is that, in the long term, the company will enable the feed for more than 50 million tons per year of briquette, which would lead to a potential emission reduction of more than 6 million tons of carbon equivalent per year (MtCo2e/year) with the use of the technology.

Biodiversidade

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Resiliência

☑ Contribuição para o conhecimento sobre a biodiversidade

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média-alta

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Generating knowledge about biodiversity, especially in areas of high conservation value, supports decisions and the planning of more sustainable projects. It supports the establishment of more effective impact mitigation and conservation strategies.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Não

(3.6.1.24) Custo para concretizar a oportunidade

170000000

(3.6.1.25) Explicação do cálculo do custo

Amount invested in ITV projects over the last 10 years, in US dollars.

(3.6.1.26) Estratégia para concretizar a oportunidade

Since ITV was created they invest more them 170 milions of dolars in research focused in Amazon. ITV act at the interface between conservation and the use of natural resources adopting innovative and multidisciplinary approaches to support environmentally responsible actions in natural and impacted areas. They pursue the scientific knowledge of biological diversity, aiming at conservation and sustainable management and the health of ecosystems and associated ecosystem services. They also study the value of ecosystem services and the use of natural resources for income generation. For example, in the Jaborandi Bioeconomy survey, ITV-DS sought to identify and understand the jaborandi species with the highest content of pilocarpine, a substance used in the treatment of glaucoma and in the fight against dry mouth. By mapping the genome and selecting matrices for reproduction, they gather the information that guides the best way to extract the leaves. They also seek to map new areas of natural occurrence that can be managed orderly and investigate environmental conditions that favour their growth. Jaborandi, primarily found in Pará, Maranhão, and Piauí, is facing threats from deforestation and unsustainable harvesting practices. This plant species is a crucial source of income for the local population. Studies with Jaborandi help to value non-timber forest products, keeping the forest standing and promoting the bioeconomy of the Amazon. This project was developed in partnership with other research institutions and the Carajás Extractivist Cooperative.

Biodiversidade

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Resiliência

☑ Contribuição para o conhecimento sobre a biodiversidade

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Generating knowledge about biodiversity, especially in areas of high conservation value, supports decisions and the planning of more sustainable projects. It supports the establishment of more effective impact mitigation and conservation strategies.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Não

(3.6.1.24) Custo para concretizar a oportunidade

0

(3.6.1.25) Explicação do cálculo do custo

It was not possible to measure the costs associated with this opportunity. Vale intends to carry out this analysis in the future.

(3.6.1.26) Estratégia para concretizar a oportunidade

Planting seedlings plays a fundamental role, as it contributes to the conservation of plant species, especially those threatened with extinction, improves air quality, protects springs, streams, and rivers, promotes soil protection, and facilitates agroecological balance. The production of seedlings of native species has mainly been achieved by the method of sexual propagation, that is, through seeds. Currently, all the seeds in the nursery come from the Flora Rescue Projects or are bought from the Flona de Carajás Extractive Cooperative to generate income and develop for members and their families. This initiative, which is currently being implemented, brought social and environmental benefits and significantly improved the company's relationship with the local community. Thus, this opportunity had a considerable positive social impact. The improvement in the relationship with the communities and benefiting the local economy where there is a Vale project, also enables a positive reputation for several stakeholders.

Biodiversidade

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Resiliência

☑ Contribuição para o conhecimento sobre a biodiversidade

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Muito provável (90–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Generating knowledge about biodiversity, especially in areas of high conservation value, supports decisions and the planning of more sustainable projects. It supports the establishment of more effective impact mitigation and conservation strategies.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Não

(3.6.1.24) Custo para concretizar a oportunidade

0

(3.6.1.25) Explicação do cálculo do custo

It was not possible to measure the costs associated with this opportunity. Vale intends to carry out this analysis in the future.

(3.6.1.26) Estratégia para concretizar a oportunidade

Researchers must identify and map the potential parent plants to obtain species propagules for conservation purposes. Expanded knowledge about the ecology of this group of unique plants supports future research on their reproduction and reintroduction in different substrates. In addition, information on species distribution and survival on different types of substrates can be useful in developing protocols for the reproduction and rehabilitation of degraded areas. This opportunity was a significant action to increase biodiversity knowledge, encourage scientific research, and update data. And in this way, as a result, it provides a positive image of Vale's reputation.

Biodiversidade

(3.6.1.3) Tipo de oportunidade e fator primário da oportunidade ambiental

Resiliência

☑ Contribuição para o conhecimento sobre a biodiversidade

(3.6.1.4) Estágio da cadeia de valor em que a oportunidade ocorre

Selecione de:

☑ Operações diretas

(3.6.1.5) País/área em que a oportunidade ocorre

Selecione todos os aplicáveis

☑ Brasil

(3.6.1.7) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(3.6.1.10) O horizonte de tempo para o qual está previsto o efeito substancial da oportunidade sobre a organização

Selecione todos os aplicáveis

☑ Médio prazo

(3.6.1.11) Probabilidade da oportunidade provocar um efeito dentro do horizonte de tempo previsto

Selecione de:

☑ Provável (66–100%)

(3.6.1.12) Magnitude

Selecione de:

☑ Média

(3.6.1.14) O efeito previsto da oportunidade na posição financeira, no desempenho financeiro e nos fluxos de caixa da organização nos horizontes de tempo futuro selecionados

Generating knowledge about biodiversity, especially in areas of high conservation value, supports decisions and the planning of more sustainable projects. It supports the establishment of more effective impact mitigation and conservation strategies.

(3.6.1.15) É possível quantificar os efeitos financeiros da oportunidade?

Selecione de:

☑ Não

(3.6.1.24) Custo para concretizar a oportunidade

0

(3.6.1.25) Explicação do cálculo do custo

It was not possible to measure the costs associated with this opportunity. Vale intends to carry out this analysis in the future.

(3.6.1.26) Estratégia para concretizar a oportunidade

Under the ideal conditions created in the lab, a single seed pod can turn into hundreds or even thousands of individuals. These are then grown in greenhouses and, after acclimatization under conditions approximating their natural habitat, are reintroduced in the wild. The species produced are used in rehabilitating mine sites or restoring habitats and are monitored to ensure the different species, individuals, and populations have been successfully established. The technology applied here allows the production of many seedlings of species with low germination capacity, allowing their reintroduction and dissemination back into the wild. The partnership with research institutions and universities allows us to increasingly improve the techniques and develop specific indicators for monitoring the restoration of areas and tracking the development of these species. This seed-growing opportunity not only allows a contribution to biodiversity but, consequently, positively impacts Vale's reputation. In 2023, using the technological processes developed at the Biofactory, 25,993 seedlings of 18 key species for restoration were produced and 760 seedlings were planted in the field. By the traditional method, not using the Biofactory's technology, 28,433 seedlings of 37 key species for restoration were produced and 12,347 seedlings were planted in the field.
[Adicionar linha]

(3.6.2) Informe o montante e a proporção das suas métricas financeiras no ano de reporte alinhadas aos efeitos substanciais das oportunidades ambientais.

Mudanças climáticas

(3.6.2.1) Métrica financeira

Selecione de:
☑ O CAPEX

(3.6.2.2) Montante da métrica financeira alinhada a oportunidades para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

767000000

(3.6.2.3) Percentual da métrica financeira total alinhada a oportunidades para esse problema ambiental

Selecione de:

☑ 1-10%

(3.6.2.4) Explicação dos valores financeiros

Vale has identified a series of strategic projects that reflect its commitment to energy transition and sustainability. These include the Capex for the Briquettes project in Tubarão, amounting to USD 240 million, the Capex for Sudbury, which encompasses the Copper Cliff project and other initiatives related to energy transition minerals, with a value of USD 526 million, and the Capex allocated to the Biomes project, valued at USD 1 million. As of December 31, 2023, the total value of Vale's Capex (intangibles fixed assets) amounted to USD 60.027 billion. The combined investments in the aforementioned projects account for approximately for 1.27% of Vale's total Capex, representing the percentage of expenditures aligned with the environmental opportunities the company is pursuing.

Água

(3.6.2.1) Métrica financeira

Selecione de:

☑ O CAPEX

(3.6.2.2) Montante da métrica financeira alinhada a oportunidades para esse problema ambiental (unidade monetária conforme selecionada em 1.2)

25750000

(3.6.2.3) Percentual da métrica financeira total alinhada a oportunidades para esse problema ambiental

Selecione de:

☑ Menos de 1%

(3.6.2.4) Explicação dos valores financeiros

Vale has identified a series of strategic projects that reflect its commitment to improving its water management, focusing on achieving its water targets. There is a planned Capex for this project until 2030. In 2023, the Capex allocated to these projects was approximately 25 million USD, representing 0.4% of Vale's total Capex in 2023. If we include intangibles and fixed assets in the total Capex value, it changes to USD 60.027 billion, and the value of the strategic projects related to water management represents 0.04%.
[Adicionar linha]

C4. Governança

(4.1) A organização tem um conselho de diretores ou um órgão de governança equivalente?

(4.1.1) Conselho de diretores ou órgão de governança equivalente

Selecione de:

☑ Sim

(4.1.2) Frequência de reuniões do conselho

Selecione de:

☑ Frequência maior que trimestral

(4.1.3) Tipos de diretores que compõem o conselho

Selecione todos os aplicáveis

☑ Diretores não executivos ou equivalente

☑ Diretores não executivos independentes ou equivalente

(4.1.4) Política de diversidade e inclusão do conselho

Selecione de:

☑ Sim, e está disponível publicamente

(4.1.5) Descreva brevemente o que a política abrange

The Diversity and Inclusion Policy of Vale outlines the company's commitment to fostering an inclusive environment free from discrimination and prejudice. This policy applies to all employees, directors, and members of Vale's governance bodies, as well as to customers, service providers, and suppliers. The primary aim is to ensure equitable access to opportunities for all individuals associated with the company. The policy establishes guidelines for promoting respect and valuing the uniqueness of all individuals (institutional commitment). It encourages decision-making that is free from bias, promotes active listening, and supports the development of diverse teams (inclusive leadership). Vale implements practices and policies designed to attract, hire, and retain diverse talent (affirmative process), ensuring a work environment that does not tolerate prejudice or discrimination. All internal processes are designed to be merit-based and free from discrimination. Vale

maintains a zero-tolerance policy for prejudice, discrimination, and harassment, in alignment with its Code of Conduct. To reinforce these values, the policy promotes awareness and education on diversity, equity, and inclusion through various campaigns and training programs for employees and stakeholders. The policy is subject to periodic reviews at least every three years and requires approval by the Board of Directors to ensure it remains relevant and effective.

(4.1.6) Anexe a política (opcional)

POL-0036-Rev00_ENG.pdf
[Linha fixa]

(4.1.1) Existe supervisão dos problemas ambientais por parte do conselho na organização?

	Supervisão do conselho para este problema ambiental
Mudanças climáticas	*Selecione de:* ☑ Sim
Água	*Selecione de:* ☑ Sim
Biodiversidade	*Selecione de:* ☑ Sim

[Linha fixa]

(4.1.2) Identifique os cargos (não inclua nomes) das pessoas ou os comitês do conselho que respondem por problemas ambientais e dê detalhes sobre a supervisão do conselho para problemas ambientais.

Mudanças climáticas

(4.1.2.1) Cargos de pessoas ou comitês que respondem por este problema ambiental

Selecione todos os aplicáveis

☑ Diretor Executivo (CEO)
☑ Diretor de Sustentabilidade (CSO)
☑ Comitê do conselho

(4.1.2.2) A responsabilidade do cargo por esse problema ambiental está descrita nas políticas aplicáveis ao conselho

Selecione de:
☑ Sim

(4.1.2.3) Políticas que descrevem a responsabilidade do cargo por esse problema ambiental

Selecione todos os aplicáveis
☑ Descrições das funções individuais
☑ Outra política aplicável ao conselho, especifique **:**Sustainability Committee internal rules

(4.1.2.4) Frequência com que esse problema ambiental é incluído na pauta programada

Selecione de:
☑ Item da pauta programada em algumas reuniões do conselho – no mínimo anualmente

(4.1.2.5) Mecanismos de governança nos quais este problema ambiental está integrado

Selecione todos os aplicáveis
☑ Análise e orientação de orçamentos anuais
☑ Supervisão da definição de metas corporativas
☑ Supervisão e orientação de análise de cenários
☑ Monitoramento do progresso das metas corporativas
☑ Supervisão e orientação de grandes gastos de capital
☑ Aprovação de políticas e/ou compromissos corporativos
☑ Análise e orientação das prioridades de inovação / P&D
☑ Supervisão de processos de reporte, auditoria e verificação
☑ Supervisão e orientação das aquisições, fusões e alienações
☑ Aprovação e/ou supervisão de incentivos para os funcionários
☑ Supervisão e orientação do desenvolvimento de uma estratégia de negócios
☑ Supervisão e orientação do desenvolvimento de um plano de transição climática
☑ Análise e orientação de processo de avaliação para dependências, impactos, riscos e oportunidades

(4.1.2.7) Explique

The governance of climate issues at Vale is managed by the Sustainability Vice-President (CSO), with the CEO's and the Sustainability Committee participation, integrating scenario analysis, risk assessment, audits, corporate policies, goals and climate transition plans. They also lead the Low Carbon Forum (LCF), in which meets are quarterly scheduled to discuss climate risks and opportunities. The results are presented to the Board by the CSO. The assessment of dependencies and impacts of climate change is conducted by the CSO and reviewed by the Sustainability Committee, which makes recommendations to the Board, enabling informed decisions on investments and strategies. The Sustainability Committee oversees the preparation of reports, such as the Sustainability Report and the GHG inventory, ensuring data accuracy through regular audits. The Board, with recommendations from the Committee, approves climate policies, including emission reduction targets and internal carbon pricing. In 2020, the Board approved net zero emission targets for scopes 1 and 2 by 2050 and a 15% reduction for scope 3 by 2035, aligning with the global climate goals and ensuring the integration of sustainable practices across the company's operations. The CEO supervises progress towards targets, with more frequently than quaterly reviews at the LCF and quarterly reports to the Board. Performance indicators related to GHG emissions, forest recovery, and renewable energy use are linked to executive compensation, incentivizing leadership to prioritize climate initiatives. The development of the climate transition plan is led by the CSO, with implementation monitored by the Low Carbon Forum and reviewed quarterly by the Board. The CEO submits annual and multi-annual budgets to the Board, including sustainability initiatives, reviewed by the Sustainability Committee to ensure alignment with the company's climate commitments. Specific examples include approvals for renewable energy projects, energy efficiency technologies, and carbon capture initiatives, ensuring sufficient resources are allocated to achieve climate-related goals and that financial planning supports the company's sustainability strategy. The Board reviews innovation and R&D priorities related to climate change, such as the development of low-carbon technologies and sustainable products, evaluating potential impacts and benefits of these innovations. Additionally, the Sustainability Committee assesses the feasibility and long-term impact of new technologies, encouraging the development of solutions that can reduce the company's carbon footprint and support long-term sustainability goals. Board decisions, such as the approval of net-zero emission targets and internal carbon pricing of USD 50/tCO2e, reflect its commitment to the climate strategy. The Board evaluates trade-offs between initial costs of new technologies and long-term benefits, balancing short-term financial impacts with sustainability.

Água

(4.1.2.1) Cargos de pessoas ou comitês que respondem por este problema ambiental

Selecione todos os aplicáveis

☑ Diretor Executivo (CEO)

☑ Diretor de Sustentabilidade (CSO)

☑ Outro Diretor do C-suite

☑ Comitê do conselho

(4.1.2.2) A responsabilidade do cargo por esse problema ambiental está descrita nas políticas aplicáveis ao conselho

Selecione de:

☑ Sim

(4.1.2.3) Políticas que descrevem a responsabilidade do cargo por esse problema ambiental

Selecione todos os aplicáveis

☑ Termos de referência do conselho

☑ Descrições das funções individuais

☑ Outra política aplicável ao conselho, especifique **:**Sustainability policies and strategic guidelines

(4.1.2.4) Frequência com que esse problema ambiental é incluído na pauta programada

Selecione de:

☑ Item da pauta programada em algumas reuniões do conselho – no mínimo anualmente

(4.1.2.5) Mecanismos de governança nos quais este problema ambiental está integrado

Selecione todos os aplicáveis

☑ Análise e orientação de orçamentos anuais

☑ Supervisão da definição de metas corporativas

☑ Supervisão e orientação de análise de cenários

☑ Monitoramento do progresso das metas corporativas

☑ Aprovação de políticas e/ou compromissos corporativos

☑ Monitoramento da implementação da estratégia de negócios

☑ Supervisão e orientação do engajamento com políticas públicas

☑ Supervisão e orientação do desenvolvimento de uma estratégia de negócios

☑ Monitoramento da conformidade com políticas e/ou compromissos corporativos

☑ Análise e orientação de processo de avaliação para dependências, impactos, riscos e oportunidades

(4.1.2.7) Explique

Vale's CEO, appointed by the Board of Directors, plays a crucial role in shaping the company's strategy and operations. He submits candidates for Executive Vice Presidents for Board approval, prepares and submits the annual mission, strategic guidelines, and strategic plan, which include socio-environmental issues. The CEO also executes the approved strategic plan, prepares and submits the annual and multi-annual budgets, directs the company's operations, and reports economic-financial performance and sustainability initiatives to the Board. Additionally, he introduced new strategic pillars: New Pact with Society and Safety and Operational Excellence, which include biodiversity, climate change, and water management targets. The Chief Sustainability Officer (CSO), or Executive Vice President of Sustainability (EVPS), implements the Board's general policies and guidelines. This role involves monitoring and implementing strategies and policies, and acting as an internal and external engagement agent. The EVPS manages sustainability issues, including water resources. In 2020, he coordinated the approval of the Water and Water Resources Policy and created the Water Resources and Effluents Forum, which brings together operational teams for technical discussions on

standardized water resources and effluents management. Bi-monthly meetings are held with water resources coordinators and other professionals. Relevant issues are presented to Vale's senior leadership, and progress is reported annually to the Sustainability Committee. In 2021, the forum became international. In 2023, Vale transferred some water resource responsibilities from the CSO to the Chief Technical Officer (CTO), aligned with Vale's efforts to improve dam management and safety and prevent recurrence of previous incidents. This position oversees all mining, geotechnical, mine planning, technology, innovation, and mineral exploration activities, Geotechnics, Health, Safety and Environment and Operational Excellence. Therefore, the CTO has the responsibility to oversee, guide and approve strategies and targets related to water resources. The Board of Directors' Technical Committees monitor Vale's activities and oversee risk management. In 2022, the advisory committees were reduced from seven to five, composed only of Board members. The Sustainability Committee (SC) evaluates Vale's sustainability and innovation strategies, ensuring they are considered in the company's global strategy. The SC recommends sustainability issues in strategic planning, evaluates and proposes changes in socio-environmental strategies, and monitors their implementation, analyzing issues such as climate change, biodiversity, and water resource management. In 2023, the Committee approved the new water target and now is responsible for monitoring the progress towards it.

Biodiversidade

(4.1.2.1) Cargos de pessoas ou comitês que respondem por este problema ambiental

Selecione todos os aplicáveis

☑ Diretor Executivo (CEO)

☑ Diretor de Sustentabilidade (CSO)

☑ Comitê do conselho

(4.1.2.2) A responsabilidade do cargo por esse problema ambiental está descrita nas políticas aplicáveis ao conselho

Selecione de:

☑ Sim

(4.1.2.3) Políticas que descrevem a responsabilidade do cargo por esse problema ambiental

Selecione todos os aplicáveis

☑ Mandato do conselho

☑ Descrições das funções individuais

(4.1.2.4) Frequência com que esse problema ambiental é incluído na pauta programada

Selecione de:

☑ Item da pauta programada em algumas reuniões do conselho – no mínimo anualmente

(4.1.2.5) Mecanismos de governança nos quais este problema ambiental está integrado

Selecione todos os aplicáveis

☑ Análise e orientação de orçamentos anuais

☑ Supervisão da definição de metas corporativas

☑ Monitoramento do progresso das metas corporativas

☑ Aprovação de políticas e/ou compromissos corporativos

☑ Monitoramento da implementação da estratégia de negócios

☑ Supervisão de processos de reporte, auditoria e verificação

☑ Supervisão e orientação do desenvolvimento de uma estratégia de negócios

☑ Monitoramento da conformidade com políticas e/ou compromissos corporativos

☑ Análise e orientação de processo de avaliação para dependências, impactos, riscos e oportunidades

(4.1.2.7) Explique

The CEO has the authority to nominate candidates for the Executive Committee, emphasizing those with expertise in relevant areas. The CEO also has the power to propose removals to the Board. The Executive Board, led by the CEO, meets bi-weekly and as needed. Key responsibilities include developing and submitting strategic plans, annual and multi-annual budgets, and reporting on the company's performance, including sustainability initiatives, to the Board. The CEO introduced two strategic pillars: the New Pact with Society, focusing on sustainability and operational excellence, and Safety. These pillars incorporate biodiversity, climate change, and water management targets. For instance, Vale achieved significant progress in its forestry target, protecting 165,092 hectares and recovering 7,392 hectares. In 2021, the Board established an exclusive executive board for Sustainability, led by the Executive Vice President of Sustainability (EVPS), equivalent to the CSO. The EVPS, subordinate to the CEO, oversees the implementation of sustainability policies and strategies, addressing critical issues that impact business and sustainability goals, including biodiversity. This role involves monitoring policies, strategies, and sustainability investments. Board Committees, including the Sustainability Committee, advise the Board and propose improvements. These committees ensure compliance with laws, ethics, and internal controls while monitoring Vale's economic, financial, and sustainability performance. The Sustainability Committee evaluates the company's sustainability strategy across social, environmental, climate, and economic dimensions, ensuring alignment with Vale's overall strategy. Activities include recommending sustainability topics for strategic planning, proposing changes to socio-environmental strategies, and monitoring their implementation. They assess environmental and social sustainability issues, including climate change, biodiversity, water management, and human rights. The committee also monitors performance indicators like the Dow Jones Sustainability Index and advises on policies, communicating Vale's strategy and reputation in areas such as safety, human rights, environment, and community relations. Also, they guide reparation actions for the Mariana and Brumadinho dam failures Vale's Board of Directors aims to protect company assets and maximize shareholder returns, acting ethically to ensure sustainability. The Board relies on the Sustainability Committee to operationalize the Sustainability Strategy, enhancing discussions and decision-making efficiency. The Executive Committee, supported by Executive Risk Committees and multidisciplinary forums, assists in defining and monitoring the Sustainability Strategy. In 2022, the Board met 16 times, monitoring economic, financial, and strategic performance. The Sustainability Committee held eight meetings, regularly discussing biodiversity issues like forest targets and performance.
[Linha fixa]

(4.2) O conselho da organização está capacitado para lidar com problemas ambientais?

Mudanças climáticas

(4.2.1) Capacitação do conselho para este problema ambiental

Selecione de:

☑ Sim

(4.2.2) Mecanismos para manter um conselho competente em termos ambientais

Selecione todos os aplicáveis

☑ Consultoria regular com um grupo de trabalho interno, permanente, especialista no assunto

☑ Engajamento regular com partes interessadas externas e especialistas em problemas ambientais

☑ Integração dos conhecimentos de problemas ambientais ao processo de nomeação do conselho

☑ Formação regular para os diretores quanto a problemas ambientais, normas e melhores práticas do setor (p. ex., TCFD, SBTi)

☑ Inclusão de no mínimo um membro do conselho que seja especialista nesse problema ambiental

(4.2.3) Conhecimento ambiental especializado do membro do conselho

Experiência

☑ Experiência de nível executivo em uma função focada em problemas ambientais

☑ Experiência de nível de gestão em uma função focada em problemas ambientais

☑ Experiência em uma organização exposta ao escrutínio ambiental e que está em fase de transição para a sustentabilidade

Água

(4.2.1) Capacitação do conselho para este problema ambiental

Selecione de:

☑ Sim

(4.2.2) Mecanismos para manter um conselho competente em termos ambientais

Selecione todos os aplicáveis

☑ Consultoria regular com um grupo de trabalho interno, permanente, especialista no assunto

☑ Integração dos conhecimentos de problemas ambientais ao processo de nomeação do conselho

☑ Inclusão de no mínimo um membro do conselho que seja especialista nesse problema ambiental

(4.2.3) Conhecimento ambiental especializado do membro do conselho

Experiência

☑ Experiência de nível executivo em uma função focada em problemas ambientais

☑ Experiência em uma organização exposta ao escrutínio ambiental e que está em fase de transição para a sustentabilidade

[Linha fixa]

(4.3) Há alguma responsabilidade em nível de gestão para os problemas ambientais da organização?

	Responsabilidade por este problema ambiental em nível de gestão
Mudanças climáticas	*Selecione de:* ☑ Sim
Água	*Selecione de:* ☑ Sim
Biodiversidade	*Selecione de:* ☑ Sim

[Linha fixa]

(4.3.1) Informe os cargos seniores de gestão ou comitês de nível mais alto com responsabilidade por problemas ambientais (não inclua os nomes das pessoas).

Mudanças climáticas

(4.3.1.1) Cargo do indivíduo ou comitê com responsabilidade

Nível executivo

☑ Diretor Executivo (CEO)

(4.3.1.2) Responsabilidades ambientais deste cargo

Dependências, impactos, riscos e oportunidades

☑ Avaliação de dependências, impactos, riscos e oportunidades ambientais

☑ Gestão de dependências, impactos, riscos e oportunidades ambientais

Engajamento

☑ Gestão do engajamento em paisagens e/ou jurisdições

☑ Gestão do engajamento de políticas públicas relacionadas a problemas ambientais

☑ Gestão da conformidade do fornecedor com os requisitos ambientais

☑ Gestão do engajamento da cadeia de valor relacionada a problemas ambientais

Políticas, compromissos e metas

☑ Monitoramento da conformidade com políticas e/ou compromissos ambientais corporativos

☑ Mensuração do progresso quanto a metas ambientais corporativas

☑ Mensuração do progresso quanto a metas ambientais de base científica

☑ Definição de políticas e/ou compromissos ambientais corporativos

☑ Definição de metas ambientais corporativas

Estratégia e planejamento financeiro

☑ Condução de análise de cenários ambientais

☑ Gestão de orçamentos anuais relacionados a problemas ambientais

☑ Gestão de processos de reporte, auditoria e verificação ambiental
☑ Implantação da estratégia de negócios relacionada a problemas ambientais
☑ Gestão de aquisições, fusões e alienações relacionadas a problemas ambientais
☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais
☑ Gestão de grandes despesas de capital e/ou despesas operacionais relacionadas a problemas ambientais
☑ Gestão das prioridades relacionadas a inovação/produtos ou serviços de baixo impacto ambiental (incluindo Pesquisa e Desenvolvimento)

Outros
☑ Oferta de incentivos para os funcionários relacionados ao desempenho ambiental

(4.3.1.4) Linha de reporte

Selecione de:
☑ Responde diretamente ao conselho

(4.3.1.5) Frequência de reporte para o conselho dos problemas ambientais

Selecione de:
☑ Frequência maior que trimestral

(4.3.1.6) Explique

Vale's CEO, a position appointed by Vale's Board of Directors, has several duties, such as preparing and submitting to the Board of Directors, the Company's purpose, strategic guidelines, and strategic plan. The company's strategic guidelines and plan consider socioenvironmental issues and, therefore, the CEO is the highest level in a management position responsible for climate change, which includes both assessing and managing climate-related risks and opportunities. Besides, the CEO also exercises executive direction of the Company, coordinating and supervising the activities of the other Executive Officers and ensuring compliance with the decisions and guidelines of the Board of Directors and the General Assembly. In addition, he also integrates Vale's Low Carbon Forum, led by the Sustainability Vice-President (CSO). Therefore, the CEO is informed about and monitors climate-related issues through various processes. At the Low Carbon Forum, for example, he is informed about and monitors climate-related issues through more frequently than quaterly meetings with the participation of the leadership and technical teams that deal with the topic on daily basis. This provides an opportunity for the CEO to receive updates on Vale's progress towards meeting its climate-related targets, as well as to discuss emerging issues and opportunities related to climate change.

Água

(4.3.1.1) Cargo do indivíduo ou comitê com responsabilidade

Nível executivo

☑ Diretor Executivo (CEO)

(4.3.1.2) Responsabilidades ambientais deste cargo

Dependências, impactos, riscos e oportunidades

☑ Avaliação de dependências, impactos, riscos e oportunidades ambientais

☑ Avaliação de tendências futuras em dependências, impactos, riscos e oportunidades ambientais

☑ Gestão de dependências, impactos, riscos e oportunidades ambientais

Engajamento

☑ Gestão do engajamento de políticas públicas relacionadas a problemas ambientais

Políticas, compromissos e metas

☑ Monitoramento da conformidade com políticas e/ou compromissos ambientais corporativos

☑ Mensuração do progresso quanto a metas ambientais corporativas

☑ Definição de políticas e/ou compromissos ambientais corporativos

☑ Definição de metas ambientais corporativas

Estratégia e planejamento financeiro

☑ Condução de análise de cenários ambientais

☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais

☑ Implantação da estratégia de negócios relacionada a problemas ambientais

☑ Gestão de orçamentos anuais relacionados a problemas ambientais

Outros

☑ Oferta de incentivos para os funcionários relacionados ao desempenho ambiental

(4.3.1.4) Linha de reporte

Selecione de:

☑ Responde diretamente ao conselho

(4.3.1.5) Frequência de reporte para o conselho dos problemas ambientais

Selecione de:

☑ Frequência maior que trimestral

(4.3.1.6) Explique

The CEO of Vale is the main responsible for managing water-related issues, reporting to the Board of Directors (BoD). He acts as an interface between the BoD and executives such as the Executive Vice President of Sustainability (EVPS, equivalent to the CSO) and the CRO. The CEO implements the strategy defined by the BoD, drafts plans and projects, and manages Vale's operational and financial performance, including managing water-related risks and opportunities (R&O). He participates in monthly meetings with the Executive Committee, Directors, and Managers, discussing sustainability and monitoring water KPIs. Water-related topics reported to the BoD include new targets, stakeholder engagement, KPI monitoring, risk mitigation, and water governance. The executive directors legally represent the company and are responsible for operations and policy implementation set by the BoD. In 2020, the EVPS approved Vale's Water and Water Resources Policy, managing sustainability issues, including water resources. That year, Vale created the Water Resources Forum for standardized technical discussions on water and effluent management, which became international in 2021, with bi-monthly meetings. Water KPIs are monitored monthly in these meetings, with the participation of the CEO, Executive Committee, Directors, and Managers

Biodiversidade

(4.3.1.1) Cargo do indivíduo ou comitê com responsabilidade

Nível executivo

☑ Diretor de Sustentabilidade (CSO)

(4.3.1.2) Responsabilidades ambientais deste cargo

Dependências, impactos, riscos e oportunidades

☑ Avaliação de dependências, impactos, riscos e oportunidades ambientais

☑ Avaliação de tendências futuras em dependências, impactos, riscos e oportunidades ambientais

☑ Gestão de dependências, impactos, riscos e oportunidades ambientais

Engajamento

☑ Gestão do engajamento em paisagens e/ou jurisdições

☑ Gestão do engajamento de políticas públicas relacionadas a problemas ambientais

☑ Gestão da conformidade do fornecedor com os requisitos ambientais

☑ Gestão do engajamento da cadeia de valor relacionada a problemas ambientais

Políticas, compromissos e metas

☑ Monitoramento da conformidade com políticas e/ou compromissos ambientais corporativos

☑ Mensuração do progresso quanto a metas ambientais corporativas

☑ Mensuração do progresso quanto a metas ambientais de base científica

☑ Definição de políticas e/ou compromissos ambientais corporativos

☑ Definição de metas ambientais corporativas

Estratégia e planejamento financeiro

☑ Condução de análise de cenários ambientais

☑ Gestão de orçamentos anuais relacionados a problemas ambientais

☑ Gestão de processos de reporte, auditoria e verificação ambiental

☑ Implantação da estratégia de negócios relacionada a problemas ambientais

☑ Gestão de aquisições, fusões e alienações relacionadas a problemas ambientais

☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais

☑ Gestão de grandes despesas de capital e/ou despesas operacionais relacionadas a problemas ambientais

☑ Gestão das prioridades relacionadas a inovação/produtos ou serviços de baixo impacto ambiental (incluindo Pesquisa e Desenvolvimento)

Outros

☑ Outro, especifique **:**Providing emplyee incentives related to environmental performance

(4.3.1.4) Linha de reporte

Selecione de:

☑ Responde ao Diretor Executivo (CEO)

(4.3.1.5) Frequência de reporte para o conselho dos problemas ambientais

Selecione de:

☑ Frequência maior que trimestral

(4.3.1.6) Explique

The Chief Sustainability Officer (CSO), is the highest management position responsible for sustainability issues, such as biodiversity and forests, below the CEO. The CSO is the legal representative for sustainability issues, proposing biodiversity policies, plans, projects, and targets for Executive Board approval and implementing policies set by the Board of Directors. The CSO evaluates, monitors, and reports on Vale's performance, risks, and opportunities regarding environmental issues to the Board of Directors. Vale's purpose to improve lives and transform the future is shared by all business areas. The company promotes management based on voluntary business actions and partnerships with governments, public institutions, other companies, and civil society. The CSO monitors progress in strategies and policies, acts as an agent of engagement with stakeholders, and strengthens ties between Vale and society, facilitating the implementation of the new pact with society, a strategic pillar of Vale.

Mudanças climáticas

(4.3.1.2) Responsabilidades ambientais deste cargo

Dependências, impactos, riscos e oportunidades

☑ Avaliação de dependências, impactos, riscos e oportunidades ambientais

☑ Avaliação de tendências futuras em dependências, impactos, riscos e oportunidades ambientais

☑ Gestão de dependências, impactos, riscos e oportunidades ambientais

Engajamento

☑ Gestão do engajamento em paisagens e/ou jurisdições

☑ Gestão do engajamento de políticas públicas relacionadas a problemas ambientais

☑ Gestão da conformidade do fornecedor com os requisitos ambientais

☑ Gestão do engajamento da cadeia de valor relacionada a problemas ambientais

Políticas, compromissos e metas

☑ Monitoramento da conformidade com políticas e/ou compromissos ambientais corporativos

☑ Mensuração do progresso quanto a metas ambientais corporativas

☑ Mensuração do progresso quanto a metas ambientais de base científica

☑ Definição de políticas e/ou compromissos ambientais corporativos

☑ Definição de metas ambientais corporativas

Estratégia e planejamento financeiro

☑ Condução de análise de cenários ambientais

☑ Gestão de orçamentos anuais relacionados a problemas ambientais

☑ Gestão de processos de reporte, auditoria e verificação ambiental

☑ Implantação da estratégia de negócios relacionada a problemas ambientais

☑ Gestão de aquisições, fusões e alienações relacionadas a problemas ambientais

☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais

☑ Gestão de grandes despesas de capital e/ou despesas operacionais relacionadas a problemas ambientais

☑ Gestão das prioridades relacionadas a inovação/produtos ou serviços de baixo impacto ambiental (incluindo Pesquisa e Desenvolvimento)

Outros

☑ Oferta de incentivos para os funcionários relacionados ao desempenho ambiental

(4.3.1.4) Linha de reporte

Selecione de:

☑ Responde ao Diretor Executivo (CEO)

(4.3.1.6) Explique

At Vale, the CSO position is handled by the Executive Vice President of Sustainability, which is a member of the Executive Committee. This position is responsible for preparing the company's strategic sustainability. The CSO is also responsible for preparing and proposing the sustainability policy to the Executive Committee. It is the responsibility of the CSO to promote the dissemination and deployment of all actions related to the sustainability policy. The CSO is accountable for ensuring compliance with the general guidelines of the company's business established by the Board of Directors in the management of the sustainability area. Consequently, the CSO is responsible for proposing climate change policies, plans, projects, and targets and, it's also responsible for evaluating, monitoring, and reporting Vale's performance, risks and opportunities regarding climate-related issues to the Executive Committee and Board of Directors. To make the Sustainability Strategy viable, the Board of Directors counts on a Sustainability Committee for advice.eTo this end, the company promotes management based on voluntary business actions and partnerships with different levels of government, other companies and civil society. In this process, the CSO has the function of monitoring progress in the execution of strategies, in addition to being an agent of engagement, through actions and dialogue with stakeholders, as well as strengthening ties between Vale and society. Vale's sustainability team tracks and monitors the performance of KPIs related to climate change through data available in the Credit360 system – a tool in which it is possible to find information such as the action plan to reduce emissions of greenhouse gases, the area responsible, calculation form and performance per period – and the annual budget dedicated to climate change is discussed and approved by the CSO in accordance with the Annual Strategic Planning and Budget Cycle.

Água

(4.3.1.2) Responsabilidades ambientais deste cargo

Dependências, impactos, riscos e oportunidades

☑ Avaliação de dependências, impactos, riscos e oportunidades ambientais

☑ Avaliação de tendências futuras em dependências, impactos, riscos e oportunidades ambientais

☑ Gestão de dependências, impactos, riscos e oportunidades ambientais

Engajamento

☑ Gestão do engajamento de políticas públicas relacionadas a problemas ambientais

☑ Gestão do engajamento da cadeia de valor relacionada a problemas ambientais

Políticas, compromissos e metas

☑ Monitoramento da conformidade com políticas e/ou compromissos ambientais corporativos

☑ Mensuração do progresso quanto a metas ambientais corporativas

☑ Definição de políticas e/ou compromissos ambientais corporativos

☑ Definição de metas ambientais corporativas

Estratégia e planejamento financeiro

☑ Condução de análise de cenários ambientais

☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais

☑ Implantação da estratégia de negócios relacionada a problemas ambientais

☑ Gestão de orçamentos anuais relacionados a problemas ambientais

Outros

☑ Oferta de incentivos para os funcionários relacionados ao desempenho ambiental

(4.3.1.4) Linha de reporte

Selecione de:

☑ Responde ao Diretor Executivo (CEO)

(4.3.1.6) Explique

In 2023, Vale created the Technical Executive Vice Presidency, that is responsible for overseeing all mining, geotechnical, mine planning, technology, innovation, and mineral exploration activities, Geotechnics, Health, Safety and Environment and Operational Excellence. This governance structure reflects Vale's emphasis on sustainability, especially water resource management and indicates an evolution in water resource management, potentially integrating technological and operational aspects more robustly. The Technical Executive Vice President oversees the water resources strategy, targets and budget related to water resources management.

Mudanças climáticas

(4.3.1.2) Responsabilidades ambientais deste cargo

Estratégia e planejamento financeiro

☑ Desenvolvimento de uma estratégia de negócios que leva em consideração problemas ambientais

☑ Desenvolvimento de um plano de transição climática

Outros

☑ Outro, especifique **:**Evaluating and approving corporate policies and reports

(4.3.1.4) Linha de reporte

Selecione de:

☑ Responde diretamente ao conselho

(4.3.1.6) Explique

The mission of the Committee is to assist Vale's Board of Directors, including by proposing improvements relating to its area of performance, so as to provide improved efficacy and quality to the decisions made by this body, and ensure that the Company's activities are performed in accordance with the laws, ethics, and internal controls. The Committee is responsible for guiding and monitoring the sustainability strategy; for evaluating and approving Company's corporate sustainability policies; the direction of the Company's strategic sustainability indicators and the communication and disclosure thereof, also through Integrated Reporting; the direction of the Company's sustainability projects portfolio; the guidelines for long-term social and environmental commitments that are under the competence of the Board of Directors, according to the Company's internal policies and standards.
[Adicionar linha]

(4.5) Há incentivos monetários para a gestão de problemas ambientais, incluindo o cumprimento de metas?

Mudanças climáticas

(4.5.1) Provisão de incentivos monetários relacionados a este problema ambiental

Selecione de:

☑ Sim

(4.5.2) Percentual dos incentivos monetários totais do C-suite e no nível do conselho vinculados à gestão desse problema ambiental

10

(4.5.3) Explique

In 2020, Vale integrated metrics focused on environmental, social, and governance (ESG) issues into officers' short- and long-term variable compensation to enhance strategic pillars such as Safety & Operational Excellence and the New Pact with Society.This alignment aimed at making Vale a leader in low-carbon mining through organizational restructuring. Vale's share plan is a long-term share-based variable compensation plan. It works in three-year cycles, with payment in the year following the end of the cycle and it is applicable to the Executive Committee, and non-statutory directors and until the level of general manager. In 2022 the metric was increased to 25% compared to 2020, reinforcing Vale's commitment to ESG best practices. In 2023, Vale further integrated climate targets into executive compensation, showing continued dedication to sustainability and low-carbon mining, with commitments to reduce Scope 1 and 2 emissions by 33% by 2030 and achieve net-zero emissions by 2050.

Água

(4.5.1) Provisão de incentivos monetários relacionados a este problema ambiental

Selecione de:

☑ Sim

(4.5.2) Percentual dos incentivos monetários totais do C-suite e no nível do conselho vinculados à gestão desse problema ambiental

7.5

(4.5.3) Explique

In 2023, Vale had a goal related to the management of environmental requirements, considering various environmental topics, including water resources. The target was linked to the remuneration of all HSE directors, safety and environmental managers, employees in the safety and environmental area, who were linked to the VP Operations, South Corridor, North Corridor, Southeast Corridor and Pelletization (São Luis) areas, Minas Gerais and Tubarão.

Biodiversidade

(4.5.1) Provisão de incentivos monetários relacionados a este problema ambiental

Selecione de:

☑ Sim

(4.5.2) Percentual dos incentivos monetários totais do C-suite e no nível do conselho vinculados à gestão desse problema ambiental

7.5

(4.5.3) Explique

In 2020, Vale integrated metrics focused on environmental, social, and governance (ESG) issues into officers' short- and long-term variable compensation to enhance strategic pillars such as Safety & Operational Excellence and the New Pact with Society. This alignment aimed at making Vale a leader in sustainable mining through organizational restructuring. Regarding biodiversity, Vale has a target to Restore and protect 500,000 ha of forests outside company bouderies by 2030. In 2023, this target was linked to the short-term variable compensation of the the Director of Climate, Nature and Culture of Vale.
[Linha fixa]

(4.5.1) Informe mais detalhes sobre os incentivos monetários oferecidos pela gestão dos problemas ambientais (não inclua os nomes dos indivíduos).

Mudanças climáticas

(4.5.1.1) Cargo com direito a incentivo monetário

Nível executivo ou nível de conselho

☑ Diretor Executivo (CEO)

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Ações

(4.5.1.3) Métricas de desempenho

Redução de emissões

☑ Redução nas emissões absolutas

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo de longo prazo, ou equivalente, somente (p. ex., bônus multianual contratual)

(4.5.1.5) Outros detalhes dos incentivos

In 2020, Vale integrated metrics focused on environmental, social, and governance (ESG) issues into officers' short- and long-term variable compensation to enhance strategic pillars such as Safety & Operational Excellence and the New Pact with Society. This alignment aimed at making Vale a leader in low-carbon mining through organizational restructuring. Vale's share plan is a long-term share-based variable compensation plan. It works in three-year cycles, with payment in the year following the end of the cycle and it is applicable to the Executive Committee and non-statutory directors. Starting in 2022, the weight of the long-term ESG metric was increased from 20% to 25%, reinforcing Vale's commitment to ESG best practices.15% of the ESG metric is related to Sustainability, being divided into 10% Climate and 5% Dow Jones. In 2023, Vale further integrated climate targets into executive compensation, showing continued dedication to sustainability and low-carbon mining, with commitments to reduce Scope 1 and 2 emissions by 33% by 2030 and achieve net-zero emissions by 2050.

(4.5.1.6) Como os incentivos do cargo contribuem para o cumprimento dos seus compromissos ambientais e/ou plano de transição climática

The CEO supervises progress towards targets, with monthly reviews at the Low Carbon Forum and quarterly reports to the Board. Performance indicators related to GHG emissions, forest recovery, and renewable energy use are linked to executive compensation, incentivizing leadership to prioritize climate initiatives. The CEO submits annual and multi-annual budgets to the Board, including sustainability initiatives, reviewed by the Sustainability Committee to ensure alignment with the company's climate commitments. Specific examples include approvals for renewable energy projects, energy efficiency technologies, and carbon capture initiatives, ensuring sufficient resources are allocated to achieve climate-related goals and that financial planning supports the company's sustainability strategy. Therefore, the CEO plays an essential role to contribute with the approval of several projects and initiatives that contribute to Vale's emissions reductions.

Água

(4.5.1.1) Cargo com direito a incentivo monetário

Nível executivo ou nível de conselho

☑ Outro Diretor do C-suite, especifique **:**Health, Safety, Environment Director

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Participação nos lucros

(4.5.1.3) Métricas de desempenho

Políticas e compromissos

☑ Outras métricas relacionadas a políticas e compromissos, especifique **:**Compliance with environmental requirements

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo de curto prazo, ou equivalente, somente (p. ex., bônus anual contratual)

(4.5.1.5) Outros detalhes dos incentivos

In 2023, Vale had a goal related to the management of environmental requirements, considering various environmental topics, including water resources. The target was linked to the remuneration of all HSE directors, safety and environmental managers, employees in the safety and environmental area, who were linked to the VP Operations, South Corridor, North Corridor, Southeast Corridor and Pelletization (São Luis) areas, Minas Gerais and Tubarão.

(4.5.1.6) Como os incentivos do cargo contribuem para o cumprimento dos seus compromissos ambientais e/ou plano de transição climática

The Director is responsible for monitoring the indicators related to the goal. Furthermore, he is responsible for supervising the technical teams that record, demonstrate and manage environmental requirements. These technical teams are also responsible for managing the process, identifying and treating deviations, within the business, when applicable.

Biodiversidade

(4.5.1.1) Cargo com direito a incentivo monetário

Nível executivo ou nível de conselho

☑ Equipe executiva corporativa

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Participação nos lucros

(4.5.1.3) Métricas de desempenho

Metas

☑ Cumprimento de metas ambientais

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo de curto prazo, ou equivalente, somente (p. ex., bônus anual contratual)

(4.5.1.5) Outros detalhes dos incentivos

In 2019, Vale integrated metrics focused on environmental, social, and governance (ESG) issues into officers' short- and long-term variable compensation to enhance strategic pillars such as Safety & Operational Excellence and the New Pact with Society. This alignment aimed at making Vale a leader in sustainable mining through organizational restructuring. Regarding biodiversity, Vale has a target to Restore and protect 500,000 ha of forests beyond its borders by 2030. In 2023, this target was linked to the short-term variable compensation of the Director of Climate, Nature and Culture of Vale.

(4.5.1.6) Como os incentivos do cargo contribuem para o cumprimento dos seus compromissos ambientais e/ou plano de transição climática

Vale's Climate, Nature and Culture Director is responsible for supervising and approving actions relating to Vale's forest strategy, which encompasses the goal of forest restoration and protection.

Mudanças climáticas

(4.5.1.1) Cargo com direito a incentivo monetário

Nível executivo ou nível de conselho

☑ Diretor de Sustentabilidade (CSO)

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Ações

☑ Participação nos lucros

(4.5.1.3) Métricas de desempenho

Redução de emissões

☑ Redução nas emissões absolutas

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo tanto de curto quanto de longo prazo, ou equivalente

(4.5.1.5) Outros detalhes dos incentivos

The Short-Term Target Dashboard is approved by the Board of Directors in December and focus on progressing towards the Company's long-term ambitions and goals, with the creation and sharing of sustainable value in each financial year. The dashboards drive to build the Vale of the Future, a leading company in

sustainable mining, efficient and innovative. The goals of the collective block remained focused on EBITDA, Safety, Process Events and DEI. Additionally, each member of the executive committee has specific goals, according to their focus. In this sense, the CSO had in 2023 a specific short-term goal related to reduction in absolute emissions. Additionally, the CSO had a long-term incentive plan. Vale's share plan is a long-term share-based variable compensation plan. It works in three-year cycles, with payment in the year following the end of the cycle and it is applicable to the Executive Committee and non-statutory directors. Starting in 2020, the weight of the long-term ESG metric was increased from 20% to 25%, reinforcing Vale's commitment to ESG best practices.15% of the ESG metric is related to Sustainability, being divided into 10% Climate and 5% Dow Jones. In 2023, Vale further integrated climate targets into executive compensation, showing continued dedication to sustainability and low-carbon mining, with commitments to reduce Scope 1 and 2 emissions by 33% by 2030 and achieve net-zero emissions by 2050.

Mudanças climáticas

(4.5.1.1) Cargo com direito a incentivo monetário

Nível executivo ou nível de conselho

☑ Diretor de Compras (CPO)

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Ações

(4.5.1.3) Métricas de desempenho

Redução de emissões

☑ Redução nas emissões absolutas

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo de longo prazo, ou equivalente, somente (p. ex., bônus multianual contratual)

(4.5.1.5) Outros detalhes dos incentivos

Our long-term variable remuneration programs include our Matching program (a restricted share program) and the Vale Stock Program (PAV, a performance share program), available only to executive leadership levels. The ESG performance factor indicator, with a 25% weight, includes: Health and Safety (weight of 10%):

measures exposure to incidents that may cause serious injuries and fatalities. The program starting in 2024 factors into the performance assessment the records of N1 incidents (fatalities or life changed) in addition to the existing N2 incidents (serious injuries). Sustainability (weight of 15%): composed of two metrics, the first related to the reduction of greenhouse gas emissions (weight of 10%) and the second linked to Vale's performance in the Corporate Sustainability Assessment - CSA, used to select companies for Dow Jones Sustainability Index - DJSI (weight of 5%).

Mudanças climáticas

(4.5.1.1) Cargo com direito a incentivo monetário

Gerente mid

☑ Grupo de gestão

(4.5.1.2) Incentivos

Selecione todos os aplicáveis

☑ Participação nos lucros

(4.5.1.3) Métricas de desempenho

Redução de emissões

☑ Redução nas emissões absolutas

(4.5.1.4) Plano de incentivo ao qual os incentivos estão vinculados

Selecione de:

☑ Plano de incentivo de curto prazo, ou equivalente, somente (p. ex., bônus anual contratual)

(4.5.1.5) Outros detalhes dos incentivos

Vale has short-term variable remuneration plans (current year) for all its employees. There are collective and individual goals, depending on each technical area and its contribution to the Company's objectives. In 2023, the management level of different areas had short-term goals related to reducing emissions.
[Adicionar linha]

(4.6) A organização tem uma política ambiental que aborda problemas ambientais?

	A organização tem alguma política ambiental?
	Selecione de: ☑ Sim

[Linha fixa]

(4.6.1) Dê detalhes sobre suas políticas ambientais.

Row 1

(4.6.1.1) Problemas ambientais abrangidos

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.6.1.2) Nível de cobertura

Selecione de:

☑ Na organização como um todo

(4.6.1.3) Etapas da cadeia de valor abrangidas

Selecione todos os aplicáveis

☑ Operações diretas

☑ Cadeia de valor upstream

☑ Cadeia de valor downstream

(4.6.1.4) Explique a cobertura

The Climate Change Policy applies to Vale, its wholly owned (100%) subsidiaries and shall be reproduced to its direct and indirect subsidiaries. Its adoption is encouraged in other entities in which Vale has a participation interest. The company's main commitment is to become net zero GHG emissions in its own operations by 2050. The policy defines strategic guidelines for GHG emissions reduction, protection and reforestation, renewable energy, energy efficiency and portfolio. It establishes principles by which the company operates: map opportunities and risks related to climate change, implement initiatives that contribute to Vale's internal efforts to reduce and neutralize emissions, engage and establish partnerships in the search of transformative solutions for a carbon-neutral economy, and monitor, evaluate and disseminate the climate change strategy's performance in Vale's Reports and communication channels. The policy covers direct operations and defines a commitment to promote absolute emission reduction (scope 12) aligned with the Paris Agreement. It also includes the upstream and downstream value chain as it establishes the strategic guideline to actively contribute to reduce value-chain emissions, by engaging with customers and suppliers in order to further reduce emissions along the production value chain. The policy is revised every 4 years and is under revision in 2024. It will be published at the website for stakeholder consultation before its final approval.

(4.6.1.5) Conteúdo da política ambiental

Compromissos ambientais

☑ Compromisso de manter a conformidade com regulamentações e normas obrigatórias

☑ Compromisso com o engajamento de partes interessadas e desenvolvimento de capacidades quanto a problemas ambientais

Compromissos climáticos específicos

☑ Compromisso com 100% de energia renovável

☑ Compromisso com emissões zero líquido

(4.6.1.6) Indique se a sua política ambiental está alinhada aos tratados ambientais ou aos objetivos de políticas globais

Selecione todos os aplicáveis

☑ Sim, alinhada com o Acordo de Paris

(4.6.1.7) Disponibilidade pública

Selecione de:

☑ Publicamente disponível

(4.6.1.8) Anexe a política

POL0012-G_climate change Policy_Rev2_E.pdf

Row 2

(4.6.1.1) Problemas ambientais abrangidos

Selecione todos os aplicáveis

☑ Água

(4.6.1.2) Nível de cobertura

Selecione de:

☑ Na organização como um todo

(4.6.1.3) Etapas da cadeia de valor abrangidas

Selecione todos os aplicáveis

☑ Operações diretas

☑ Cadeia de valor downstream

(4.6.1.4) Explique a cobertura

The Water and Water Resources Policy applies to Vale, its wholly owned subsidiaries and is reproduced to its direct and indirect subsidiaries in Brazil and other countries.As a guideline for its actions, Vale has set the 2030 Water Target which aims to reduce the freshwater withdrawal to processes per ton produced, which means less freshwater withdrawal for the same production. This target is part of the Structural Plan for Water Resources 2030, initiated in 2018, which is part of the socio-environmental goals voluntarily assumed.The policy states 3 main principles that are followed by a series of commitments: actively participate, directly or through representative entities, in the different forums related to the management of water resources of the catchment where Vale operates, and more specifically in Vale's area of influence, to discuss water security strategies, contribute to surface water and groundwater quantity and quality preservation in the catchment and marine areas, where Vale operates, contribute to water stewardship continuous improvement. The policy covers its direct operations, focusing on the reduction of freshwater withdrawal and establishing related goals.It also covers the downstream value chain, since it establishes a commitment to ensure that shipowners comply with the procedures associated with ballast water, to prevent potential impacts on marine biodiversity, following the guidelines recommended by IMO, International Maritime Organization.

(4.6.1.5) Conteúdo da política ambiental

Compromissos hídricos específicos

☑ Compromisso de reduzir/eliminar a poluição da água locais

☑ Compromisso com WASH gerenciados com segurança nas comunidades

☑ Compromisso de reduzir os volumes do consumo de água
☑ Compromisso de reduzir os volumes de captação de água
☑ Compromisso de reduzir ou eliminar substâncias de risco
☑ Compromisso com a governança da água e/ou a ação coletiva

(4.6.1.6) Indique se a sua política ambiental está alinhada aos tratados ambientais ou aos objetivos de políticas globais

Selecione todos os aplicáveis
☑ Sim, alinhada com o Objetivo de Desenvolvimento Sustentável 6 sobre Água Potável e Saneamento

(4.6.1.7) Disponibilidade pública

Selecione de:
☑ Publicamente disponível

(4.6.1.8) Anexe a política

POL-0032-G_Water-and-water_resources_Policy-1.pdf
[Adicionar linha]

(4.10) A instituição é membro signatário de qualquer estrutura ou iniciativa colaborativa ambiental?

(4.10.1) A instituição é membro signatário de qualquer estrutura ou iniciativa colaborativa ambiental?

Selecione de:
☑ Sim

(4.10.2) Estrutura ou iniciativa colaborativa

Selecione todos os aplicáveis
☑ Climate Action 100+
☑ Task Force on Nature-related Financial Disclosures (TNFD)
☑ Outro, especifique **:ICMM, SASB, WEF, EITI, GISTM and CEBDS, Nature Action 100+**

☑ Task Force on Climate-related Financial Disclosures (TCFD)

☑ Membro da Comunidade da Global Reporting Initiative (GRI)

☑ World Business Council for Sustainable Development (WBCSD)

(4.10.3) Descreva o papel da organização dentro de cada quadro, iniciativa e/ou compromisso

Vale aims to proactively participate in public policy formulation and understand our points of view for establishing or maintaining a favorable environment for the mining industry. The company partners with international and regional organizations, participating in discussions on environmental, commercial, energy, and sustainable development policies. Vale participates in entities such as the World Business Council for Sustainable Development (WBCSD), Task Force on Climate-related Financial Disclosures (TCFD), Task Force on Nature-related Financial Disclosures (TNFD), Global Reporting Initiative (GRI), and International Council on Mining and Metals (ICMM). Vale reports on its adoption of ICMM's Mining Principles and Performance Expectations, supporting initiatives like the Extractive Industries Transparency Initiative (EITI) for mineral revenue transparency. Vale is committed to implementing the Global Industry Standard on Tailings Management (GISTM) for safety in tailings storage facilities. Vale's reports include indicators from the Sustainability Accounting Standards Board (SASB), the Task Force on Climate-related Financial Disclosures (TCFD), the World Economic Forum (WEF) key metrics, and the UN Sustainable Development Goals (SDGs). Vale is committed to the UN Global Compact and has implemented its Ten Principles. Despite withdrawing in 2019 due to the Brumadinho tragedy, Vale's CEO emphasizes that adhering to these principles strengthens the company's sustainability performance. Vale's ESG commitments align with the UN's 2030 Agenda and are reported on its ESG Portal. In 2017, Vale signed a letter from the Brazilian business sector supporting global carbon pricing (CEBDS) and endorsed the TCFD framework. The company adopted TCFD guidelines to manage the impacts of transitioning to a low-carbon economy and the physical impacts of climate change, maintaining a risk and opportunity management program. Vale incorporated TCFD climate risk assessments into its corporate risk management, adhering to TCFD guidelines. The company's climate strategy and decarbonization roadmap are updated annually and published on its ESG Portal and Climate Change Report. In 2023 Vale was started to be assessed by Nature Action 100. and continued to be assessed by Climate Action 100, reinforcing its commitment to climate sustainability. As a GRI member, Vale maintained support for GRI's mission, influencing transparency debates. Vale's Integrated Reports follow GRI Standards, and the company played a significant role in updating these standards. Also, Vale's annual performance is assessed by institutions like Climate Action 100. As a GRI Community Member, Vale supports GRI's mission and influences global corporate transparency debates. Vale's Integrated Reports follow GRI Standards. In 2023, Vale engaged in TNFD public consultations, piloting its guidelines and aligning activities through the CEBDS consultative group, achieving partial compliance and working towards full adherence. In 2023 we completed the pilot implementation of this approach, focusing on our currently active operations in Brazil, published in 2024. Within the WBCSD, Vale actively participated in activities influencing global sustainability standards and policies. The company developed and implemented sustainability initiatives aligned with international frameworks and local regulations.
[Linha fixa]

(4.11) No ano de reporte, a organização se envolveu com atividades que podem direta ou indiretamente influenciar uma política, uma lei ou uma regulamentação que possa (positiva ou negativamente) exercer impactos sobre o ambiente?

(4.11.1) Atividades de engajamento externas que possam direta ou indiretamente influenciar uma política, uma lei ou um regulamento que pode exercer impactos sobre o clima

Selecione todos os aplicáveis

☑ Sim, nós nos engajamos diretamente com os formuladores de políticas públicas

☑ Sim, nós nos engajamos indiretamente através e/ou apoiamos financeira ou materialmente uma associação comercial ou outra organização intermediária ou indivíduo cujas atividades poderiam influenciar, políticas, legislação ou regulamento

(4.11.2) Indique se a organização tem um compromisso público ou uma declaração de posicionamento que oriente suas atividades de engajamento de forma alinhadas com os tratados ou objetivos de políticas ambientais globais

Selecione de:

☑ Sim, temos um compromisso público ou uma declaração de posição em alinhamento com os objetivos de tratados ou políticas ambientais globais

(4.11.3) Tratados ambientais globais ou objetivos de políticas em alinhamento com o compromisso público ou a declaração de posição

Selecione todos os aplicáveis

☑ Acordo de Paris

☑ Quadro da Biodiversidade Global Kunming-Montreal

☑ Objetivo de Desenvolvimento Sustentável 6 sobre Água limpa e saneamento

(4.11.4) Anexe a(s) declaração(ões) de posição ou compromisso

Vale_Global_Sustainability_Policy.pdf

(4.11.5) Indique se a organização está registrada num cadastro de transparência

Selecione de:

☑ Sim

(4.11.6) Tipos de registros de transparência em que a organização está registrada

Selecione todos os aplicáveis

☑ Um cadastro governamental obrigatório

☑ Um cadastro não-governamental

(4.11.7) Divulgue os cadastros de transparência nos quais a organização está inscrita e os respectivos números de identificação

Officer of the Comissioner of Lobbying of Canada - Registry of Lobbyists - ID: 957939-224822

(4.11.8) Descreva o(s) processo(s) que a organização adota para assegurar que o engajamento em atividades externas seja consistente com seus compromissos ambientais e/ou com seu plano de transição

To achieve our climate commitments, we have established robust climate governance. Our Executive Board provides full support and strategic oversight for the implementation of our Net Zero Strategy. This is further supported by a Sustainability Committee comprised of Board members and an external independent advisor who advises the Board on sustainability-related issues. Vale tracks trends and studies related to climate change in global forums, aiming to inform the development of regulatory and economic strategies for mitigation and adaptation globally. Vale has participated in several discussions, collaborating on the development of policies and strategies aimed at transitioning to a resilient and low-carbon economy. In this sense, Vale participates in national and international meetings, including technical reviews on economic instruments to encourage the global reduction of GHG emissions, and relevant initiatives on climate change, such as the Brazilian Business Council for Sustainable Development, the Carbon Pricing Leadership Coalition, the International Council of Mining and Metals, the Task Force on Climate-Related Financial Disclosures, CDP Worldwide, and the World Business Council for Sustainable Development Vale is dedicated to integrating sustainability into its business. This dedication is demonstrated by increased engagement with socially responsible investors and key ESG stakeholders through webinars, roadshows, and global events such as COP, New York Climate Week, and London Metals Exchange Week, among others. The sustainability areas are responsible for defining which organizations Vale will engage with, considering its sustainability strategy and the relevance of participation. Once participation in a given organization is decided, the area appoints an employee from the most appropriate technical area to conduct this participation, evaluating the hierarchical level that should be involved. It is considered that all employees are aware of the company's strategy through internal communication initiatives and meetings promoted by the sustainability board. All Vale representatives in external forums participate periodically in internal meetings to exchange information and discuss any specific topic. These meetings allow for a systemic and strategic assessment of Vale's external engagement, ensuring alignment between the company's strategy and external positioning.
[Linha fixa]

(4.11.1) Sobre quais políticas, legislações ou regulamentações que poderiam impactar (positiva ou negativamente) o ambiente a organização esteve diretamente engajada com formuladores de políticas públicas no ano de reporte?

Row 1

(4.11.1.1) Especifique a política, a lei ou a regulamentação sobre a qual a organização se engaja com formuladores de políticas públicas

Brazilian Regulated Carbon Market

(4.11.1.2) Questões ambientais a que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.1.3) Área de foco das políticas, leis ou regulamentações que podem ter impacto sobre o clima

Mecanismos financeiros (p. ex., impostos, subsídios etc.)

☑ Taxação do carbono

☑ Esquemas de comércio de emissões

(4.11.1.4) Abrangência geográfica da política, lei ou regulamentação

Selecione de:

☑ Nacional

(4.11.1.5) País/área/região a que a política, lei ou regulamentação se aplica

Selecione todos os aplicáveis

☑ Brasil

(4.11.1.6) A posição da organização com relação à política, lei ou regulamentação

Selecione de:

☑ Apoio sem exceções

(4.11.1.8) Tipo de engajamento direto com formuladores de políticas públicas sobre essa política, lei ou regulamentação

Selecione todos os aplicáveis

☑ Reuniões regulares

☑ Participação em grupos de trabalho organizados pelos formuladores de políticas públicas

☑ Respondendo às consultas

☑ Envio de propostas/questionamentos por escrito

(4.11.1.9) Valor do financiamento que a organização forneceu a formuladores de políticas públicas no ano de reporte relativo a esta política, lei e regulamentação (moeda)

0

(4.11.1.10) Explique a relevância desta política, lei ou regulamentação para a consecução dos seus compromissos ambientais e/ou plano de transição, como isso informou seu engajamento, e como mensurar o sucesso do seu engajamento

In 2023, the Ministry of Development, Industry, Commerce, and Services partnered with CEBDS (Brazilian Business Council for Sustainable Development), to develop a technical proposition on carbon market regulation mechanisms. Vale sponsors projects and works with CEBDS, the government, other business organizations, and civil society to develop this regulation. The company also analyzes the different law propositions and decrees about establishing a regulated carbon market with some confederations. One important is the CNI - National Confederation of Industry, which maintains direct contact with the Ministry of Finance and the Ministry of Environment. Vale also contributed to the public consultation of documents released by the government regarding the implementation of the Brazilian NDC in 2020. Vale supports the country in establishing a regulated carbon market through the cap-and-trade system coordinated by the federal government to develop targets and trading rules. This system, already consolidated in other jurisdictions, is in line with international experience and provides even more credibility, enabling compliance with future regulations related to the subject.

(4.11.1.11) Indique se a organização avaliou se seu engajamento com esta política, lei ou regulamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.1.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com esta política, lei ou regulamento

Selecione todos os aplicáveis

☑ Acordo de Paris

Row 2

(4.11.1.1) Especifique a política, a lei ou a regulamentação sobre a qual a organização se engaja com formuladores de políticas públicas

IMO ambition

(4.11.1.2) Questões ambientais a que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.1.3) Área de foco das políticas, leis ou regulamentações que podem ter impacto sobre o clima

Impactos e Pressões Ambientais

☑ Emissões – CO2

(4.11.1.4) Abrangência geográfica da política, lei ou regulamentação

Selecione de:

☑ Global

(4.11.1.6) A posição da organização com relação à política, lei ou regulamentação

Selecione de:

☑ Apoio sem exceções

(4.11.1.8) Tipo de engajamento direto com formuladores de políticas públicas sobre essa política, lei ou regulamentação

Selecione todos os aplicáveis

☑ Reuniões regulares

☑ Participação em grupos de trabalho organizados pelos formuladores de políticas públicas

☑ Respondendo às consultas

☑ Envio de propostas/questionamentos por escrito

(4.11.1.9) Valor do financiamento que a organização forneceu a formuladores de políticas públicas no ano de reporte relativo a esta política, lei e regulamentação (moeda)

0

(4.11.1.10) Explique a relevância desta política, lei ou regulamentação para a consecução dos seus compromissos ambientais e/ou plano de transição, como isso informou seu engajamento, e como mensurar o sucesso do seu engajamento

Vale has been supporting the Brazilian Government/Navy with an analysis of the IMO's MEPC (Marine Environment Protection Committee) technical proposals related to GHG emissions of international shipping, which could turn to decisions and/or regulations. Vale supports proposals focused on energy efficiency and climate goals to achieve the IMO GHG emissions reduction targets and positions itself accordingly during the public consultation fora organized by the Navy prior to the IMO MEPC meetings to discuss these proposals.

(4.11.1.11) Indique se a organização avaliou se seu engajamento com esta política, lei ou regulamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.1.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com esta política, lei ou regulamento

Selecione todos os aplicáveis

☑ Acordo de Paris

[Adicionar linha]

(4.11.2) Dê detalhes do engajamento direto da organização em política, lei ou regulamentação que possa ter impactos positivos ou negativos, através de associações comerciais ou outras organizações ou intermediários no ano de reporte do relatório.

Row 1

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

América do Sul

☑ Outras associações comerciais na América do Sul, especifique **:**IBRAM

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

☑ Água

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Consistente

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

IBRAM analyses the impacts of national and international regulation on the extractive sector. Vale supports some technical studies developed by IBRAM and shares technical information about GHG emissions and water use in the mining industry. Vale contributes with discussions about GHG emissions management and abatement opportunities. Vale also participates in several initiatives and Special Programs promoted by the IBRAM and other partners, aiming to promote sustainable development through studies, manuals, guides, research, innovation, and the use of the most modern technologies available.

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.2.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com uma política, lei ou regulamento

Selecione todos os aplicáveis

☑ Acordo de Paris

Row 2

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

América do Sul

☑ Outras associações comerciais na América do Sul, especifique :CNI

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Consistente

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

CNI has been following up on the Brazilian Nationally Determined Contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) and interacting with the government both regarding the international commitment and how it will be implemented domestically, particularly on aspects concerning the industry sector. Vale is an active participant of CNI's working group (Rede Clima) and as such take part in discussions and can provide inputs to the position papers and discussions.

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.2.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com uma política, lei ou regulamento

Selecione todos os aplicáveis

☑ Acordo de Paris

Row 3

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

América do Norte

☑ Outras associações comerciais na América do Norte, especifique :MAC

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 4

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

América do Norte

☑ Outras associações comerciais na América do Norte, especifique :OMA

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 5

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

América do Norte

☑ Outras associações comerciais na América do Norte, especifique :CME

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 6

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global

☑ Outras associações comerciais globais, especifique **:**AMPCO

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 7

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global

☑ Outras associações comerciais globais, especifique **:**IGUA

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 8

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global

☑ Outras associações comerciais globais, especifique **:**Intercargo

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Consistente

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

INTERCARGO is involved in IMO discussions concerning the IMO strategy for reducing greenhouse gas emissions from international shipping. INTERCARGO is working to avoid measures that may increase the owner's costs. INTERCARGO is also involved in IMO discussions regarding the establishment of an MRV (Monitoring, Reporting and Verify) for emissions reductions from ships. INTERCARGO is fully concerned with the confidentiality of the data to be informed/ monitored and the accuracy of the methodology to be used for monitoring the fuel consumption/emissions. Vale is participating of the INTERCARGO fora to discuss the matter and follow up on the impacts on its maritime transport.

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 9

(4.11.2.1) Tipo de engajamento indireto

Selecione de:
☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global
☑ Outras associações comerciais globais, especifique **:**NFA

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis
☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:
☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:
☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:
☑ Não, não avaliamos

Row 10

(4.11.2.1) Tipo de engajamento indireto

Selecione de:
☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global
☑ Outras associações comerciais globais, especifique :CBI

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis
☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:
☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:
☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:
☑ Não, não avaliamos

Row 11

(4.11.2.1) Tipo de engajamento indireto

Selecione de:
☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global
☑ Outras associações comerciais globais, especifique **:**Eurometaux

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis
☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:
☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:
☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:
☑ Não, não avaliamos

Row 12

(4.11.2.1) Tipo de engajamento indireto

Selecione de:
☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global
☑ Conselho Internacional de Mineração e Metais (ICMM)

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis
☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:
☑ Consistente

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:
☑ Não, não tentamos influenciar a posição da associação

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

As a member of the ICMM, Vale is expected to implement the ICMM's Mining Principles and Performance Expectations as a condition of membership. The company support and endorse these, and the ICMM's efforts at the international level to enhance the transparency of mineral revenues, including through the Extractive Industries Transparency Initiative (EITI), and engaging constructively in appropriate forums to improve the transparency of mineral revenues and operations. In the climate change area through ICMM, the company is committed to achieve the goal of net zero greenhouse gas (GHG) emissions from Scope 1 and 2 by 2050 or earlier, aligned with the ambitions of the Paris Agreement. The goal of becoming Net Zero by 2050 is already part of Vale's agenda, which has as its strategic priority to combat the impacts of climate change. To reduce emissions from Scope 1 and 2 by 33%, the company will make investments, prioritizing innovative technologies and world-class, high-quality iron ore, nickel, and copper portfolios critical to the low-carbon transition. Vale's CEO Eduardo Bartolomeo is active member of the ICMM Climate Change Advisory Group demonstrating engagement and commitment to the cause of climate change for a sustainable mining industry on a global scale.

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 13

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global

☑ Outras associações comerciais globais, especifique **:**The Nickel Institute

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Desconhecido

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Não, não avaliamos

Row 14

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento indireto através de outra organização ou indivíduo intermediário

(4.11.2.2) Tipo de organização ou indivíduo

Selecione de:

☑ Organização Não Governamental (ONG) ou organização beneficente

(4.11.2.3) Indique a organização ou posição do indivíduo

To act at the forefront of sustainable development together with business leaders, creating an environment in which sustainable companies are more successful and inspire and drive the transition to a more prosperous country.

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Mudanças climáticas

☑ Água

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Consistente

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Não, não tentamos influenciar a posição da associação

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

Vale joined the unprecedented CEBDS (Brazilian Business Council for Sustainable Development) program that supports the inclusion of climate actions in companies, reinforcing its commitment to sustainability. The Net Zero Platform, which has a partnership with the WBCSD (World Business Council for Sustainable Development), aims to transform business goals of climate neutrality into reality, through practical support for the implementation of decarbonization processes. The annual amount paid to CEBDS for Vale to sponsor projects including the Net Zero Platform is BRL 200,000 (USD 40,000). The Net Zero platform will help accelerate climate action across all spheres that influence companies' ability to reduce greenhouse gas (GHG) emissions – within companies themselves, across value chains, national public policies and net zero standards international. One of the program's next actions will be to bring to Brazil a decarbonization guide tool called Climate Drive, which brings together all the guidelines necessary for companies to implement the best solutions available globally to reduce their own emissions. Thus, the platform becomes an important part of the private sector's strategy to combat global warming. CEBDS also created the Water Thematic Chamber in 2007 with the aim of deepening understanding of the subject, as well as investigating the impact and opportunities arising from investment in basic sanitation and the actions of the business sector in the dynamics of water resources. This path is fundamental to improving the allocation of this resource, increasing resilience and reducing risks and scarcity, increasingly reinforcing the relevance of water in the daily lives of companies and the population. By raising awareness, engaging, articulating, sharing experiences and exchanging knowledge, CEBDS, together with Vale and other member companies, contributes to broaden the debate on the subject and make an effective contribution to developing responses to such an urgent issue.

(4.11.2.9) Valor do financiamento que a organização forneceu a esta organização ou indivíduo no ano de reporte (moeda)

40000

(4.11.2.10) Descreva o objetivo deste financiamento e como ele pode influenciar uma política, uma lei ou uma regulamentação que possa exercer impacto sobre o ambiente

Membership payment

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.2.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com uma política, lei ou regulamento

Selecione todos os aplicáveis

☑ Acordo de Paris

☑ Objetivo de Desenvolvimento Sustentável 6 sobre Água limpa e saneamento

Row 16

(4.11.2.1) Tipo de engajamento indireto

Selecione de:

☑ Engajamento direto através de uma associação comercial

(4.11.2.4) Associação comercial

Global

☑ Conselho Internacional de Mineração e Metais (ICMM)

(4.11.2.5) Questões ambientais relevantes às políticas, leis, regulamentações sobre as quais a organização ou indivíduo se posicionou

Selecione todos os aplicáveis

☑ Água

(4.11.2.6) Indique caso a posição da organização é consistente com a organização ou indivíduo com quem se engaja

Selecione de:

☑ Mista

(4.11.2.7) Indique se a organização tentou influenciar a posição da organização ou indivíduo no ano de reporte

Selecione de:

☑ Sim, tentamos influenciá-la, mas a associação não mudou de posição

(4.11.2.8) Descreva como a posição da organização é consistente ou difere da posição da organização ou intermediários, e eventuais medidas tomadas para influenciar suas posições

The International Council of Mining and Metals (ICMM) demonstrates alignment with Brazilian legislation, which can be highlighted by the recent incorporation of the requirements of the GISTM (Global Industry Standard on Tailings Management), prepared jointly by ICMM, UNEP and PRI, in ANM Resolution No. 95/2022 of the National Mining Agency. Vale bases its action on the principles and ICMM guidelines. In addition, the company is a member of the Technical Resource Group ICMM, where it contributes to the definition of guidelines aimed at responsible resource management water and effluent in the sector. In 2023, as a member of ICMM, Vale took part in the development of the new Declaration of Positioning in Nature of the body, which defined the approach to be adopted for the protection of biodiversity, including freshwater and oceans, in synergy with the goals of the Global Framework of Kunming-Montreal Biodiversity (GBF) 2030. In the reporting period, there was a divergence between Vale and ICMM regarding the definition of the metrics of the ICMM's Good Practice Guide for Water Reporting (GPG). The issue was addressed through an email sent by Vale. ICMM was willing to talk better about the subject. However, the issue has not yet had an impact on a change of opinion on the part of the ICMM.

(4.11.2.11) Indique se a organização avaliou se seu engajamento está alinhada com tratados globais ou com os objetivos das políticas ambientais

Selecione de:

☑ Sim, avaliamos, e está em alinhamento

(4.11.2.12) Objetivos de tratados ou políticas ambientais globais alinhados com o engajamento da organização com uma política, lei ou regulamento

Selecione todos os aplicáveis
☑ Quadro da Biodiversidade Global Kunming-Montreal
[Adicionar linha]

(4.12) A organização publicou alguma informação sobre sua resposta a questões ambientais para este ano de reporte em outros lugares além das respostas à CDP?

Selecione de:
☑ Sim

(4.12.1) Forneça detalhes das informações sobre a resposta da organização a questões ambientais para este ano de reporte em outros lugares além das respostas à CDP. Anexe a publicação.

Row 1

(4.12.1.1) Publicação

Selecione de:
☑ Nos relatórios tradicionais, alinhados com as normas ou quadros de divulgação ambiental

(4.12.1.2) Norma ou quadro com o qual o relatório se alinha

Selecione todos os aplicáveis
☑ Norma do GRI
☑ TCFD

(4.12.1.3) Questões ambientais abrangidas na publicação

Selecione todos os aplicáveis
☑ Mudanças climáticas

☑ Florestas
☑ Água
☑ Biodiversidade

(4.12.1.4) Status da publicação

Selecione de:
☑ Completo

(4.12.1.5) Elementos do conteúdo

Selecione todos os aplicáveis
☑ Governança
☑ Estratégia
☑ Metas de emissões
☑ Valores de emissões
☑ Riscos e oportunidades
☑ Dependências e impactos
☑ Indicadores de biodiversidade
☑ Engajamento da cadeia de valor
☑ Conteúdo de políticas ambientais
☑ Número da contabilidade hídrica

(4.12.1.6) Referência de página/seção

Performance metrics and targets Innovation; Responsible sourcing; Tailings, dam management and safety; Nature; Low-carbon solutions; Corporate governance; Risk management.

(4.12.1.7) Anexe a publicação relevante

VALERelatoIntegrado2023-EN-120424-Final.pdf

(4.12.1.8) Explique

N/A
[Adicionar linha]

C5. Estratégia de negócios

(5.1) A organização usa a análise de cenários para identificar resultados ambientais?

Mudanças climáticas

(5.1.1) Uso da análise de cenários

Selecione de:
☑ Sim

(5.1.2) Frequência da análise

Selecione de:
☑ Anualmente

Água

(5.1.1) Uso da análise de cenários

Selecione de:
☑ Sim

(5.1.2) Frequência da análise

Selecione de:
☑ Anualmente
[Linha fixa]

(5.1.1) Dê detalhes dos cenários usados na análise de cenários da sua organização.

Mudanças climáticas

(5.1.1.1) Cenário usado

Cenários de climas de transição

☑ IEA APS

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Na organização como um todo

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Mercado

☑ Tecnológico

(5.1.1.6) Alinhamento de temperatura do cenário

Selecione de:

☑ 2.0ºC - 2.4ºC

(5.1.1.7) Ano de reporte

2023

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2040

☑ 2050

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

Regime de reguladores, legalidade e políticas

☑ Regulação global

☑ Nível de ação (de local a global)

☑ Metas globais

Macro e microeconomia

☑ Crescimento doméstico

(5.1.1.10) Presunções, incertezas e limitações no cenário

In 2023, aiming to start incorporating climate change scenarios into the annual Strategic Planning cycle, Vale has adopted two scenarios focusing on carbon pricing with the lens of market basis analysis. The Announced Pledges Scenario (APS) assumes that all aspirational targets announced by governments are met on time and in full, including their long-term net zero and energy access goals. IEA points out on its 2022 World Energy Outlook, the following assumptions and uncertainties. Energy and climate policies, technologies costs and prices vary across the scenarios analyzed, while the rising demand for energy services to 2040 is underpinned by economic growth, which is lower to 2030 which averages 2.8% per year through to 2050 and the world population are kept constant across the scenarios. The world population rises from 7.8 billion people in 2021 to 9.7 billion in 2050, and increase of almost one-quarter. According to IEA, the main energy-related uncertainties for the economic outlook relate to the impact of higher energy prices and input costs on energy investment, the degree to which higher prices set back progress towards achieving affordable access to energy, and the extent of productivity gains associated with the deployment of new energy technologies. There are also uncertainties about the physical response of the climate to GHG emissions, and such the projections of future levels of warming are probabilistic in nature. For example, temperature rise would pose a severe threat to the wellbeing of humans and global ecosystems, with some of the starkest consequences manifesting themselves in the least wealthy parts of the world.

(5.1.1.11) Lógica para a escolha do cenário

Vale has proceeded with desk research on the published market analysis and research by research firms and Institutions, such as the International Energy Agency (IEA), World Bank, Principles for Responsible Investment (IPR), among others. Despite of a lack of standardized forecasting model, Vale understands that scenarios enable the comparison of different possible versions of the future, and levers and actions that produce them. The Global Energy and Climate (GEC) Model from IEA

is one of the most complete models, with a set of scenarios, of which Vale has selected two to be applied during the 2023 Strategic Planning Cycle.The Net Zero Emissions by 2050, a normative scenario designed to achieve an emissions trajectory consistent with keeping the temperature rise in 2100 below 1.5 Degrees with limited overshoot and the Announced Pledges Scenario (APS), a exploratory scenario defined by starting conditions, such as pledges, policies and targets. The different behaviors of supply and demand under IEA's scenarios result in changing competitive dynamics that impact the long-term price of our key commodities and our strategy by extension. Thus, the choice for IEA's scenarios was since our key commodities are raw material for the energy and steel sectors. And, considering the current and future decarbonization demands, it is necessary to understand and to assess how this scenario will impact in our products demand and price. As stated by IEA, the scenarios highlight the importance of government policies in determining the future of the global energy system. Vale strongly believes that policy is a main differentiating factor and drives action across the different sectors that build in the mining and metals value chain.

Água

(5.1.1.1) Cenário usado

Cenários de climas de transição

☑ IEA SDS

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Na organização como um todo

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Mercado

☑ Tecnológico

(5.1.1.6) Alinhamento de temperatura do cenário

Selecione de:

☑ 1.6ºC - 1.9ºC

(5.1.1.7) Ano de reporte

2020

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis
☑ 2030

(5.1.1.9) Forças operando no cenário

Demandas das partes interessadas e clientes
☑ Atenção do consumidor ao impacto

Regime de reguladores, legalidade e políticas
☑ Metas globais

(5.1.1.10) Presunções, incertezas e limitações no cenário

In line with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), Vale conducted an analysis of the resilience of its strategy through the scenario tool to assess the impacts of public policies, market dynamics, technological development and other risks related to the transition to a low-carbon economy on our portfolio. The Sustainable Development Scenario (SDS) is based on a narrative that adheres do the ambitions of the Paris Agreement and addresses the battle for clean air and universal access to energy. There are two fundamental premises of the SDS: the shift to a more renewable energy mix, and transportation electrification. Regarding Energy Usage Mix, the major assumption is a scenario without an increase in primary energy demand, given the significant development in energy efficiency and the expansion of the concept of circular economy, and with a significant increase in demand for non-fossil energy, when compared to that of fossil fuels. In relation to the scenario's driving forces, Consumer attention to impact and Global targets are significantly intensified. Global targets, here, consist in UN Sustainable Development Goals related to energy i.e., (i) ensure universal access to electricity, (ii) reduce severe health impacts caused by air pollution, and (iii) address climate change. These targets heavily impact on consumer attention, for instance, as on the demand for high-quality steel.

(5.1.1.11) Lógica para a escolha do cenário

The analysis of climate-related scenarios allows Vale to identify indicators to monitor the external environment and more quickly recognize changes in scenarios, allowing an agile adaptation to current needs. As the TCFD itself suggests, we chose to use the scenarios of the International Energy Agency (IEA), which are

recognized by the industry and have international support. In relation to long-term risks, and in parallel with the work carried out by ITV on climate projections and the work carried out by operational areas to adapt The Sustainable Development Scenario (SDS) Identifies and considers the policies and assumptions needed to achieve the UN Sustainable Development Goals. In this sense, the company has planned to significantly reduce the use of ams and will invest in solutions to replace wet processing with more sustainable and safer processes.

Mudanças climáticas

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Na organização como um todo

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Política

☑ Mercado

☑ Tecnológico

(5.1.1.7) Ano de reporte

2023

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2040

☑ 2050

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

Regime de reguladores, legalidade e políticas

☑ Regulação global

☑ Nível de ação (de local a global)

☑ Metas globais

Macro e microeconomia

☑ Crescimento doméstico

(5.1.1.11) Lógica para a escolha do cenário

Vale has proceeded with desk research on the published market analysis and research by research firms and Institutions, such as the International Energy Agency (IEA), World Bank, Principles for Responsible Investment (IPR), among others. Despite of a lack of standardized forecasting model, Vale understands that scenarios enable the comparison of different possible versions of the future, and levers and actions that produce them. The Global Energy and Climate (GEC) Model from IEA is one of the most complete models, with a set of scenarios, of which Vale has selected two to be applied during the 2023 Strategic Planning Cycle.The Net Zero Emissions by 2050, a normative scenario designed to achieve an emissions trajectory consistent with keeping the temperature rise in 2100 below 1.5 Degrees with limited overshoot and the Announced Pledges Scenario (APS), a exploratory scenario defined by starting conditions, such as pledges, policies and targets. The different behaviors of supply and demand under IEA's scenarios result in changing competitive dynamics that impact the long-term price of our key commodities and our strategy by extension. Thus, the choice for IEA's scenarios was since our key commodities are raw material for the energy and steel sectors. And, considering the current and future decarbonization demands, it is necessary to understand and to assess how this scenario will impact in our products demand and price. As stated by IEA, the scenarios highlight the importance of government policies in determining the future of the global energy system. Vale strongly believes that policy is a main differentiating factor and drives action across the different sectors that build in the mining and metals value chain.

Mudanças climáticas

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Instalação

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Parâmetro físico agudo

☑ Físico crônico

(5.1.1.7) Ano de reporte

2023

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2050

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Velocidade da mudança (do estado da natureza e/ou serviços ecossistêmicos)

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

Regime de reguladores, legalidade e políticas

☑ Outras forças operando de regimes de regulação, legalidade e políticas, especifique **:**The terminology SSP refers to the Shared Socio-economic Pathway or 'SSP' describing the socio-economic trends underlying the scenario

(5.1.1.11) Lógica para a escolha do cenário

The analysis of short-term climate risks enables the inclusion of climate variables in the decision-making processes of Vale's operations systematically. It generates a higher control against the impacts of climate change impacts which are already being witnessed in/around Vale's operations. For the long-term analysis, performed for the base metals operations in Canada and all operations in Pará and Maranhão, the results indicate that sites located in Canada like Long Harbour, for example,

may deal with precipitation increase and flooding in access roads, in the next decades, as well as increase in average temperature. These impacts can cause equipment damages and operational disruptions. The IPCC-RCP 4.5 was chosen as an optimistic scenario to be, mainly, an instrument for comparison with the most pessimistic scenario (8.5). Due to the results found in the GMP analyses, there is no action to be taken in the 2023 strategic plan. Methodological refinements are being planned for 2025.

Mudanças climáticas

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Instalação

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Parâmetro físico agudo

☑ Físico crônico

(5.1.1.7) Ano de reporte

2023

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2050

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Velocidade da mudança (do estado da natureza e/ou serviços ecossistêmicos)

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

Regime de reguladores, legalidade e políticas

☑ Outras forças operando de regimes de regulação, legalidade e políticas, especifique **:**The terminology SSP refers to the Shared Socio-economic Pathway or 'SSP' describing the socio-economic trends underlying the scenario

(5.1.1.11) Lógica para a escolha do cenário

The analysis of short-term climate risks enables the inclusion of climate variables in the decision-making processes of Vale's operations systematically. It generates a higher control against the impacts of climate change impacts which are already being witnessed in/around Vale's operations. For the long-term analysis, performed for the base metals operations in Canada and all operations in Pará and Maranhão, the results indicate that sites located in Canada like Long Harbour, for example, may deal with precipitation increase and flooding in access roads, in the next decades, as well as increase in average temperature. These impacts can cause equipment damages and operational disruptions.

Mudanças climáticas

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Instalação

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Parâmetro físico agudo

☑ Físico crônico

(5.1.1.7) Ano de reporte

2023

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2050

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Velocidade da mudança (do estado da natureza e/ou serviços ecossistêmicos)

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

Regime de reguladores, legalidade e políticas

☑ Outras forças operando de regimes de regulação, legalidade e políticas, especifique **:**The terminology SSP refers to the Shared Socio-economic Pathway or 'SSP' describing the socio-economic trends underlying the scenario

(5.1.1.11) Lógica para a escolha do cenário

The scenarios based on RCP allow an assessment of the physical risks to which the company's operations and facilities are exposed. By understanding the risks related to a specific location, such as Porto Ponto da Madeira in Maranhão, Brazil, it is also possible to evaluate its vulnerability to these risks, and thus take action to enhance the company's resilience to these risks.

Água

(5.1.1.3) Abordagem do cenário

Selecione de:

☑ Qualitativa e quantitativa

(5.1.1.4) Abrangência do cenário

Selecione de:

☑ Na organização como um todo

(5.1.1.5) Tipos de risco considerados no cenário

Selecione todos os aplicáveis

☑ Parâmetro físico agudo

☑ Físico crônico

(5.1.1.7) Ano de reporte

2020

(5.1.1.8) Quadros abrangidos

Selecione todos os aplicáveis

☑ 2030

☑ 2050

☑ Outro, especifique **:**2023 (short-term)

(5.1.1.9) Forças operando no cenário

Interações de ativos do ecossistema local, dependências e impactos

☑ Mudanças climáticas (um dos cinco impulsionadores de mudanças na natureza)

(5.1.1.11) Lógica para a escolha do cenário

The analysis of short-term climate risks enables the inclusion of climate variables in the decision-making processes of Vale's operations systematically. It generates a higher control against the impacts of climate change impacts which are already being witnessed in/around Vale's operations. For the long-term analysis, performed for the base metals operations in Canada and all operations in Pará and Maranhão, the results indicate that sites located in Canada like Long Harbour, for example, may deal with precipitation increase and flooding in access roads, in the next decades, as well as increase in average temperature. These impacts can cause equipment damages and operational disruptions.
[Adicionar linha]

(5.1.2) Dê detalhes dos resultados usados na análise de cenários da sua organização.

Mudanças climáticas

(5.1.2.1) Processos de negócios influenciados pela sua análise dos cenários relatados

Selecione todos os aplicáveis

☑ Identificação, avaliação e gestão de riscos e oportunidades

☑ Estratégia e planejamento financeiro

☑ Resiliência do modelo de negócios e estratégia

☑ Qualificação

☑ Definição de metas e planejamento de transição

(5.1.2.2) Abrangência da análise

Selecione de:

☑ Na organização como um todo

(5.1.2.3) Resuma os resultados da análise de cenários e quaisquer implicações para outras questões ambientais

Since 2020, Vale has been performing scenario analysis considering different behaviors of supply and demand under IEA's scenarios, which resulted in changing competitive dynamics that impact the long-term price of our key commodities and our strategy by extension. All IEA scenarios analyzed showed that the steel industry decarbonization will put a high value on high-quality and lower-emission products: the scenarios consider an increase in demand for energy and, at the same time, the requirement for quality raw materials for the energy sector, in a context of an effort to decarbonize the sector. Vale's current strategy already considers a portfolio with a 90% share of these products by 2024. To reinforce our position and offer additional solutions to the steel industry, we are focused on increasing the supply of our high-q material, leading the world production of pellets and other direct-charge products and, finally, promoting Metallics, which through partnerships and in an asset light platform provides low-carbon solutions. The analysis enabled identifying Vale's high degree of resilience of segments of ferrous minerals and basemetals. To prioritize the most cost-competitive initiatives to achieve its 2030 target, Vale has drawn up a marginal abatement cost curve (MAC curve), which analyses more than 40 projects, and it is constantly evolving. These planning and initiatives also integrate with our transition planning, of which one of the main pillars is the 15% Scope 3 reduction. Our strategy to achieve our Scope 3 target consists of two core approaches: providing our customers with a portfolio of low- or zero-carbon iron ore agglomerates and building structural partnerships with our value chain. The first core approach concerns the decarbonization of, among others, the energy and electric utility sectors, a strong trend demand according to IEA scenario projections. Considering scenario analyses – mainly IEA ones –, in 2023 Vale's strategic plan remained focused on the mega hubs strategy, to enhance our capacity building for production and commercialization of high-quality steel products. In 2023, we signed a MoU with GravitHy, to explore solutions for low carbon steel using Vales iron ore briquettes in a Direct Reduction Iron (DRI) plant. The plant is designed to produce DRI using hydrogen as reductant fuel, reducing substantially carbon emissions in the steelmaking chain Additionally, in 2023, the scenario analysis was focused on the establishment of carbon price curves and to start embedding climate scenarios into the Strategic Planning cycle. It is expected that the process will

mature overtime and a complete and annual analysis will be performed from 2024 onwards. In 2023, Vale has adopted carbon price curves during its Strategic Planning Cycle with the lens of market analysis. During the cycle, based on the two scenarios and the respective carbon price curves, Vale tested how market-based mechanisms can affect the companies' businesses on the revenue side, as well as on the cost side. On the revenue side, the analysis was focused on products possibles premiums and demerits and, on the cost side, a qualitative analysis was performed to understand how market-based mechanisms could present risks and/or opportunities. Further developments and the integration are foreseen to happen in 2024. In the Port of Ponta da Madeira, the site for the pilot implementation of the Vale Climate Forecast, an application with daily rain forecasts was developed making it feasible to disseminate the data to all operators at the Port. This helps decision-making in the operations of shipments and distribution of iron ore and other products. With these forecasts in hand, the operators optimize the product shipment plans and minimize the risk of non-shipment due to excessive humidity content in the ore. Vale considers an average operational loss of 0.5% in production due to abnormal precipitation conditions in Ponta da Madeira Port. Considering 2023's iron ore net operating revenues of USD 34 billion, it would have accrued a loss of about USD 170 million per year. Vale Climate Forecast also enables long-term physical risks identification, such as future exposure to flood, heat, wind, and precipitation. We have run a pilot for Vale's Canadian operations, including Long Harbour, Voisey's Bay, Sudbury, Port Colborne, and Thompson. To identify potential physical impacts, we used the climate scenario SSP5-8 and the thirty-year timeframe. We have found that Long Harbour, for example, may deal with precipitation increase and flooding in access roads, in the next decades, as well as an increase in average temperature. These impacts can cause equipment damage and operational disruptions. However, Vale can be resilient to extreme events in the next decades, because it already has action plans to deal with these possible impacts.

Água

(5.1.2.1) Processos de negócios influenciados pela sua análise dos cenários relatados

Selecione todos os aplicáveis

☑ Resiliência do modelo de negócios e estratégia

☑ Qualificação

(5.1.2.2) Abrangência da análise

Selecione de:

☑ Na organização como um todo

(5.1.2.3) Resuma os resultados da análise de cenários e quaisquer implicações para outras questões ambientais

In 2022 and 2023, the company continued to monitor actions to analyze the resilience of its portfolio in the face of climate change scenarios, based on the RCP scenarios, and, based on IEA scenarios, which are recognized by the industry and have international support. While the Current Policy Scenario (PSC) and the Declared Policy Scenario (STEPS) illustrate the consequences of ongoing policies and stated commitments, respectively, the Sustainable Development Scenario (SDS) identifies the policies and assumptions needed to achieve the UN Sustainable Development Goals. The scenario indicates a change on the consumer's mentality, and a demand for higher standards on the production and on the products itself, regarding its sustainability and resilience. In 2020, the Company approved the Mining and Metallurgical Waste Management Policy to encourage the transition of the waste management to a circular economy perspective. The company has

then planned to significantly reduce the use of dams and will invest in solutions to replace wet processing with more sustainable processes. In 2023, Vale achieved its goal of having at least 70% of the total production coming from dry processing by reaching 77.2% of its iron ore production by dry processing method.
[Linha fixa]

(5.2) A estratégia da organização inclui um plano de transição climática?

(5.2.1) Plano de transição

Selecione de:
☑ Não, mas estamos desenvolvendo um plano de transição com um alinhamento de temperatura diferente

(5.2.2) Alinhamento de temperatura do plano de transição

Selecione de:
☑ Alinhada com menos de 2 °C

(5.2.3) Plano de transição climática publicamente disponível

Selecione de:
☑ Sim

(5.2.4) O plano se compromete explicitamente a cessar todos os gastos e a geração de receitas provenientes de atividades que contribuem para a expansão dos combustíveis fósseis

Selecione de:
☑ Não, e não planejamos acrescentar um compromisso explícito nos próximos dois anos

(5.2.6) Explique por que sua organização não se compromete explicitamente a cessar todos os gastos e a geração de receitas provenientes de atividades que contribuam para a expansão dos combustíveis fósseis

Vale is at the beginning of its value chain and, as a mining company and a hard-to-abate sector, a significant portion of its revenue comes from activities that contribute to the expansion of fossil fuels – whether directly or indirectly. This type of commitment would therefore be inconsistent with the company's core business.

However, even though we do not have an explicit commitment to cease revenues from customers whose activities contribute to the expansion of fossil fuels, Vale has been working to achieve its Scope 3 targets to support its value chain in reducing its emissions – especially its customers. Concurrently, we are collaborating with our suppliers and customers to reduce our Scope 3 emissions. In 2020, we became the first mining company to undertake a quantitative target to reduce emissions within this scope. Vale will review its Scope 3 target in 2025 and every five years thereafter, given existing uncertainties regarding low-carbon technologies and climate policies. Regarding scope 3 emissions, our strategy to achieve our target consists of two core approaches: providing our customers with a portfolio of low- or zero-carbon iron ore agglomerates and building structural partnerships with our value chain (through Memorandum of Understandings). Scope 3 emissions — those associated with Vale's value chain — account for 97.9% of total emissions. We have established a target to achieve a 15% reduction in our value-chain initiatives by 2035, from a 2018 baseline. Our target was defined according to science-based methodology, following the absolute contraction approach and aligned with the 2C temperature increase scenario. Our decarbonization roadmap includes projects to expand the use of alternative energy sources and reduce reliance on fossil fuels in our operations (Scopes 1 and 2).

(5.2.7) Mecanismo pelo qual o feedback dos acionistas sobre o plano de transição climática é coletado

Selecione de:

☑ Temos um mecanismo de feedback diferente implantado

(5.2.8) Descrição do mecanismo de feedback

Vale has the practice of opening a public consultation when reviewing its climate change policy, as a way of listening to society. Furthermore, the policy is approved by the Board (including independent members). Finally, Vale has an open channel on the website to receive demands from society.

(5.2.9) Frequência de coleta do feedback

Selecione de:

☑ Frequência menor que anual

(5.2.10) Descrição das principais suposições e dependências nas quais o plano de transição se baseia

The main premises of Vale's Transition Plan in relation to our set of goals are the UN Emissions Gap Report, which states that global GHG emissions in 2030 need to be approximately 25% and 55% lower than in 2017 to put the world on a least-cost path to limit global warming to 2C and 1.5C, respectively; and opportunities identified upon analyses using IEA scenarios, which foresees an increase demand in high-quality energy transition metals. Our Plan also relies on transition risks identified such as regulatory changes to restrict emissions, including carbon pricing; climate litigation and reputational impacts; and changes in demand, with increased focus on lower carbon products. The Transition Plan also considers chronic and acute physical risks, such as average temperature increase, sea level rise and new rain patterns, and extreme weather and maritime conditions. To achieve our Scope 1 and 2 emission reduction commitment, we have announced in 2021 that we will invest USD 4-6 billion until 2030. Due to low-carbon technologies and climate policy uncertainties, we intend for our Plan's targets to be reviewed in 2025 and every five years.

(5.2.11) Descrição do progresso em relação ao plano de transição divulgado no período de reporte atual ou anterior

One of our main commitments was to consume 100% renewable energy in Brazil by 2025. This goal was reached in 2023after 3 years of investments in the Sol do Cerrado Solar Power Generation Project. In 2023 we also performed studies using IEA NZE scenario, a qualitative progress considering the need of aligning our strategy with a 1.5C world.

(5.2.12) Anexe eventuais documentos relevantes que deem detalhes sobre o plano de transição climática da organização (opcional)

POL0012-G_climate change Policy_Rev2_E.pdf,Relatório Mudança do Clima_2021.pdf

(5.2.13) Outras questões ambientais consideradas no seu plano de transição climática

Selecione todos os aplicáveis

☑ Florestas

(5.2.14) Explique como as questões ambientais são consideradas no seu plano de transição climática

One of our Scopes 1 and 2 reduction targets' main strategic pillars is the development of nature-based solutions with socioenvironmental co-benefits. To reach our net zero by 2050 target, our number one priority is to continuously reduce our operational emissions, through innovation and technology. Science recognizes that, as a hard-to-abate sector, we may also rely to a limited extent on carbon offsets and removals. We will leverage on our expertise and knowhow to address sound nature-based solutions. And we will also count on high-quality and credible carbon markets, aligned with international best practices. At Vale, we have a forest vocation. Globally, Vale supports the conservation of approximately 1 million hectares of forests, that currently store up to 600 million tons of CO_2e. We have been operating in the Amazon for more than 30 years helping to protect approximately 800 thousand hectares of rainforest. In 2019, Vale set a target of protecting and reforesting 500 thousand hectares of native forests up to 2030, beyond its borders.

(5.2.15) Principal razão para não ter um plano de transição alinhado a um mundo 1,5°C

Selecione de:

☑ Outro, especifique **:**Technological uncertainty

(5.2.16) Explique por que a estratégia da organização não inclui um plano de transição climática alinhado a um mundo 1,5 °C

As a mining industry, Vale has some challenges to reduce its emissions in line with the 1.5C world and therefore also to develop a climate transition plan in line with this 1.5C world. The high degree of technological uncertainty is one of those challenges. Thus, so far, Vale's interim targets are aligned with a well below 2C scenario

(-33% scopes 1 and 2 by 2030 versus 2017; and -15% net scope 3 emissions by 2035 versus 2018). Our goal of a 15% reduction in Scope 3 net emissions was set using the absolute shrinkage approach, a science-based methodology, and aligned with the 2ºC temperature increase scenario. In working to achieve our commitments, we intend to rely on three main pillars: a high-quality product portfolio, partnerships with customers and suppliers, and the limited use of high-integrity carbon credits, following principles such as additionality, permanence, transparency, and contribution to sustainable development. The use of carbon credits will be a maximum of 20% of the absolute reduction of Scope 3 emissions by 2035, equivalent to 17 $MtCO_2e$. Due to low-carbon technologies and climate policy uncertainties, we intend for our targets to be reviewed in 2025 and every five years. On the other hand, our target of a 33% reduction of Scopes 1 and 2 emissions by 2030 was also established according to a science-based methodology, and we aim not to use carbon credits to achieve this commitment. As part of its commitment to lead the transition towards low-carbon mining, Vale has set a target for net-zero scopes 1 and 2 emissions by 2050, aligned with a 1.5 C scenario. Also, through its annually updated marginal abatement cost curve (MACC), Vale has mapped a set of solutions with the potential to reduce the companies' scopes 1 and 2 emissions with a 1.5C trajectory by 2030, for example, new low-carbon products, such as the briquette and Tecnored. Additionally, the company is continuously monitoring technological development in order to better align its business and climate targets with a 1.5C scenario, and in 2023, Vale will update its scenario analysis, adding a scenario in which the global temperature increase is limited to 1.5 C.
[Linha fixa]

(5.3) Os riscos e oportunidades ambientais afetaram a estratégia e/ou planejamento financeiro da organização?

(5.3.1) Os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

Selecione de:
☑ Sim, estratégia e planejamento financeiro

(5.3.2) Áreas de negócios onde riscos e/ou oportunidades ambientais afetaram sua estratégia

Selecione todos os aplicáveis
☑ Produtos e serviços
☑ Upstream/downstream da cadeia de valor
☑ Investimento em P&D
☑ Operações
[Linha fixa]

(5.3.1) Descreva onde e como os riscos e as oportunidades ambientais influenciaram a estratégia da organização.

Produtos e serviços

(5.3.1.1) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.1.2) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram sua estratégia nesta área

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.1.3) Descreva como riscos e/ou oportunidades ambientais afetaram sua estratégia nesta área

Risk1: A significant market transition risk is the shift in customer mentality towards products with a lower carbon footprint, presenting an opportunity for Vale to transform its products and services positively. To align with this shift and strengthen its business strategy, Vale is enabling the substitution of existing products with lower-emission options in the short term and conducting long-term resilience tests against various climate change scenarios. Vale is focused on building a greener portfolio to attract customers and investors committed to a low-carbon economy. A prime example is the iron ore briquette, a low-energy, low-emission product developed over 20 years of research. The briquette, patented in over 47 countries, is a key part of Vale's initiatives to increase company's value sustainably. Three briquette plants are operational, with five more in planning, including conversions at the Tubarão complex and a new plant at Vargem Grande. The briquette can reduce greenhouse gas emissions in steel production by over 10%, thanks to its cold agglomeration technology, which emits 80% less CO2 compared to the pelletizing process. Opportunity1: The global demand for copper is set to soar due to its critical role in electric passenger vehicles, solar energy systems, and wind turbines, while nickel is indispensable for electric vehicle batteries. In response to this burgeoning demand, Vale has strategically positioned itself with a robust pipeline of projects aimed at nickel and copper production, spanning operations in the North Atlantic, South Atlantic, and Indonesia. These projects are projected to deliver a capacity of 20 to 40 kt of nickel equivalent and 50 to 100 kt of copper equivalent. Vale's business strategy is profoundly impacted by its commitment to low-carbon solutions, which forms one of the company's strategic pillars. This includes a focus on high-quality products and resources, iron solutions, energy transition metals, and circular mining. As part of this strategy, Vale is determined to streamline the supply of sustainable energy transition metals through agile project development and a flexible approach to adapt to evolving technologies. Key initiatives include: - Expanding copper production to approximately 900 kt annually by 2030. - Becoming the preferred nickel supplier for the electric vehicle industry, with 30% to 40% of our Class I nickel designated for the electric vehicle market. - Accelerating growth in our energy transition operations by seeking strategic partnerships. These actions underscore Vale's strategic focus on capitalizing on the shift towards sustainable and low-carbon technologies, ensuring the company remains at the forefront of the global energy transition.

Upstream/downstream da cadeia de valor

(5.3.1.1) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

(5.3.1.2) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram sua estratégia nesta área

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.1.3) Descreva como riscos e/ou oportunidades ambientais afetaram sua estratégia nesta área

Risk1: Vale is deeply committed to reducing emissions in the shipping industry, aligning with the International Maritime Organization's (IMO) goals towards net zero by 2050. Through strategic initiatives like the 2021 MoU to test ammonia in ships and the 2022 development of multi-fuel tanks under the Ecoshipping program, Vale aims to achieve significant emission reductions. These multi-fuel tanks can cut emissions by 40% to 80% when using methanol and ammonia, or by up to 23% with liquefied natural gas. Additionally, partnerships with Pan Ocean have led to pioneering projects such as the MV Sea Zhoushan and Sea Victoria, featuring advanced Rotor Sails and Air Lubrication Systems, further enhancing fuel efficiency and reducing emissions. Additionally, the Ecoshipping program, integral to Vale's strategy, saw significant progress in 2023, including industrial-scale trials of rotor sails to optimize propulsion. By chartering 30 Valemax2G and 47 Guaibamax ships, Vale has managed to reduce emissions by 41% and 38%, respectively. These efforts underscore Vale's dedication to environmental sustainability and innovation, supporting IMO's goals and leading the way in developing more sustainable maritime transport solutions. Vale also focuses on emissions management within its supply chain, inviting key suppliers to participate in the CDP Supply Chain program annually. In 2023, the highest response rate was achieved, with 164 out of 168 selected suppliers participating. Of the respondents, 132 have taken part in all four cycles of the CDP program, demonstrating our ongoing commitment to managing the issue.

Investimento em P&D

(5.3.1.1) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.1.2) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram sua estratégia nesta área

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.1.3) Descreva como riscos e/ou oportunidades ambientais afetaram sua estratégia nesta área

Through the adoption of existing technologies into new forms or developing new technologies and processes in R&D initiatives, Vale seeks to transform its businesses. At Vale, the use of technology seeks to redesign the way Vale works, helping to eliminate certain risk scenarios, positioning us as a leader in safety and risk management and promoting sustainability and adaptation to climate change. Vale enrolls in partnerships with academies and scientific institutions, and with local governments aiming at the development of Brazilian scientific capacity to study physical impacts and to propose adaptation measures. Investment in R&D represents a crucial risk mitigation strategy for a long-term horizon (10 years or more) and a substantial opportunity, generating the development of new technologies capable of increasing productivity and decreasing GHG emissions. Vale created the Center for Advanced Climate Studies in partnership with the Espírito Santo Government and the University of Espírito Santo, which has the objective of conducting climate-related research that will assist the state, the country, and Vale itself to better understand the climate change issues and how to deal with them. Another example is the Vale Technological Institute (ITV), founded in 2010, which is developing low-carbon and clean/renewable energy R&D and products. The institute has a dedicated research group focused on climate change that seeks to understand the science of climate change and to develop new technologies for Vale to better adapt to the new low-carbon economy. In 2023, Vale continued its studies on low-carbon R&D, also in alignment to the company's long-term strategies and the risks and opportunities associated, considering the increasing future demand for high-quality products and the need of decarbonization of the sector and its value chain. In 2023, we completed feasibility tests on using biocarbon to replace 100% of conventional fuel in the process of burning iron ore agglomerate for steel production. This advancement will significantly impact our pelletizing plants, which account for about 34% of our Scope 1 emissions, bringing us closer to our 2030 goal.

Operações

(5.3.1.1) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.1.2) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram sua estratégia nesta área

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.1.3) Descreva como riscos e/ou oportunidades ambientais afetaram sua estratégia nesta área

Risk1: In order to face the risk of a regulation on carbon intensive products, and to keep moving on its decarbonizing targets, In July and September 2023 Vale has signed partnerships with two companies to enable the development of alternative fuels studies. First one is a partnership with Webtac Corp., focused on the decarbonization of the company's railway operations through the use of alternative fuels such as ammonia, instead of diesel. The second partnership was stablished

with Petrobras. Is will last two years and foresees the evaluation of joint decarbonization opportunities, covering the development of sustainable fuels, such as hydrogen, green methanol, biobunker, green ammonia and renewable diesel, and C02 capture and storage technologies. Opportunitiy1: The global demand for copper is set to soar due to its critical role in electric passenger vehicles, solar energy systems, and wind turbines, while nickel is indispensable for electric vehicle batteries. In response to this burgeoning demand, Vale has strategically positioned itself with a robust pipeline of projects aimed at nickel and copper production, spanning operations in the North Atlantic, South Atlantic, and Indonesia. These projects are projected to deliver a capacity of 20 to 40 kt of nickel equivalent and 50 to 100 kt of copper equivalent. One of the three pillars of this strategy towards a greener portfolio is accelerating growth in our energy transition operations by seeking strategic partnerships. After the strategic decision in 2022 of creating mega hubs in the Middle East focused on low-carbon products like briquettes, in 2023, Vale moved forward on this project. In September 2023, the company signed an agreement with the Indian steel group Essar to establish a partnership to supply iron ore agglomerates for the Green Steel Arabia project in Saudi Arabia. On the same period in 2023, Vale and Porto do Açu signed a MoU to study the development of another Mega Hub in Rio de Janeiro state, in Brazil, directed to the production of hot briquetted iron (HBI). The industrial complex should initially receive pellets from Vale and may include an iron ore briquette plant, to feed the HBI plant, an essential raw material for the decarbonization process of the Brazilian and international steel chain. The initiative is pioneering on including a technical study coordinated by Porto do Açu and academics in the sector, which propose the use of HBI as a partial load in blast furnaces, which reduces the emission of greenhouse gases and increases the productivity of the steelmaking process. without the need to replace existing productive assets

Operações

(5.3.1.1) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

(5.3.1.2) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram sua estratégia nesta área

Selecione todos os aplicáveis

☑ Água

(5.3.1.3) Descreva como riscos e/ou oportunidades ambientais afetaram sua estratégia nesta área

As sustainability is one of Vale's strategic pillars, issues related to water are clearly integrated into the Company's strategy to achieve its medium and long-term objectives. The risk associated with water stress is crucial for Vale, as the availability of water is essential for the continuity of our business. This implies the development of actions related to the circularity of waste processes. In 2020, the Company approved the Mining and Metallurgical Waste Management Policy to encourage the transition of the waste management to a circular economy perspective. In 2023, Vale achieved its goal of having at least 70% of the total production coming from dry processing by reaching 77.2% of its iron ore production by natural moisture processing method. To sustain this threshold Mtpy), the Company is implementing several initiatives, such as its blending strategy, the expansion of Northern System to 240 Mtpy, the Capanema project implementation and the conversion of Plant 1 in Serra Norte to dry processing. Additionally, Vale updated the Water Target to a cumulative reduction in specific freshwater use of 27%

compared to 2017. As part of the strategy to achieve the goal, the operational units must create a plan to reduce water use. In this study, 5 units were classified as units in a critical or high-water stress (HE) area. For these units, a field diagnosis was carried out focusing on the operational processes that consume new water, as well as the maturity of water resources management (step by step methodology shown in the figure below). This Diagnosis identified a total of 157 opportunities to reduce water use, divided into 5 areas: management, operational control, processes, improvements and infrastructure. These units presented the first version of the reduction plan in June 2024, upond demands in 2023. The next steps involve: - Development of the water use reduction curve, seeking to reach the 2030 target. - Development of the first version of the reduction plan for units in areas of medium, low and zero water stress. These steps will be completed in June 2025, and the projects listed in the Reduction Plan will be aligned with the company's investment planning.
[Adicionar linha]

(5.3.2) Descreva onde e como os riscos e as oportunidades ambientais influenciaram o planejamento financeiro da organização.

Row 1

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis
☑ Receitas

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis
☑ Riscos
☑ Oportunidades

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis
☑ Mudanças climáticas

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

Natural disasters and transition risks may negatively impact Vale's sales. Emissions from thermal electricity and fossil fuels in countries like Canada, China, Japan, and the UK are subject to taxation, influencing demand for Vale's products. In 2020, Vale's climate change scenario analysis, based on IEA scenarios, highlighted the high value of high-quality, lower-emission products. By 2024, Vale aims for a portfolio with a 90% share of these products: long-term strategies include leveraging Class 1 nickel assets and following a net zero agenda in base metals transformation. Investment opportunities in Indonesia and production stabilization projects in the South Atlantic are expected to significantly increase EBITDA by 2040. As a decision guided by this expectation of revenue linked to a green portfolio, Vale has signed in September 2023 a letter of intent with Indian steel group Essar, establishing a partnership to supply iron ore agglomerates for the Green Steel Arabia project in Saudi Arabia. It is the first preliminary off take supply agreement signed by Vale with a client that will be installed in a Mega Hub, an industrial complex aimed at manufacturing low-carbon steel products. Under the agreement, Vale will supply 4 million tons per year of iron ore agglomerates (pellets or briquettes) for the direct reduction route. The briquettes will be produced by Vale at the Mega Hub in Saudi Arabia.

Row 2

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis

☑ Custos diretos

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

Higher energy costs as well as energy shortages may adversely affect Vale’s business. Costs of fuel oil, gas and electricity are a significant component of our cost of production, representing 10.0% of our total cost of goods sold in 2023. If Vale is unable to secure reliable access to electricity at acceptable prices, the Company may be forced to curtail production or may experience higher production costs, either of which would adversely affect our results of operations. We face the risk of energy

shortages in the countries where we have operations and projects, due to stress of infrastructure, high demand or weather conditions, such as floods or droughts. Future shortages, and government efforts to respond to or prevent shortages, may adversely impact the cost or supply of electricity for our operations. Energy management and efficient supply are priorities for Vale, given the uncertainties associated with changes in the regulatory environment and the risk of rising electricity prices. Therefore, Vale has developed its energy assets based on the current and projected energy needs of our operations, with the goal of reducing our energy costs, minimizing the risk of energy shortages and meeting our consumption needs through renewable sources. In 2023, Vale's installed capacity in Brazil was 2.6 GW. In Brazil, the Company has a direct stake at 3 hydroelectric power plants (Candonga, Machadinho, Estreito Energia). In addition, the Company (through its 55% participation in Aliança Geração de Energia S.A.) also has indirect stakes at 7 hydroelectric power plants as well as 3 wind complexes. Vale also has a joint venture with Cemig Geração e Transmissão S.A. in Aliança Norte Energia S.A., which has 9% stake in Norte Energia S.A. (a company established to develop and operate the Belo Monte hydroelectric plant in the Brazilian state of Pará).

Row 3

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis

☑ Gastos de capital

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis

☑ Mudanças climáticas

☑ Água

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

The risks associated with an increase in Vale's GHG emissions has also implications on Vale's energy management. The Sol do Cerrado Solar Project was announced in December 2020 and included the construction of a photovoltaic complex, with an installed capacity of 766 peak megawatts ("MWp") in the municipality

of Jaíba, in the state of Minas Gerais, Brazil. The solar generation, located in the Southeast region, also optimized the generation profile of the portfolio, which is based on hydroelectric generation. The project also included the implementation of a boosting substation, transmission line and connection bay at the Jaíba Substation, 230 kV, with contracts signed for connection to the Brazilian National Interconnected System. The complex produces approximately 193 average megawatts ("MWm") of energy for the Company's operations. In July 2023, the project reached its maximum generation capacity with the commercial operation of the last generating unit. The implementation of the project required investments of approximately US590 million, and the associated CAPEX in 2023 was US71 million. By 2030, Vale plans to spend a total of US57.4 million which US10.3 million on water management, water-related capital and operational investments of US35.6 million and US11.5 million related to water. Vale has been investing in the so-called "dry processing" integrating water usage and increasing safety in mining. Currently, approximately 70% of Vale's iron ore production is achieved through dry processing. Additionally, the company has announced an investment plan of 2.3 billion between 2020 and 2025 to increase the use of filtration and dry stacking methods to account for 16% of the total production. A magnetic concentration plant for lowgrade iron ore is currently under construction at the Vargem Grande mine in Itabirito, developed by Vale itself in partnership with "New Steel" technology. The plant, scheduled to start operations by the end of 2024, does not require water for its operations. In Vargem Grande, the tailings filtration process has been in operation since March 2023, allowing for the stacking of the majority of the material in solid state. Another solution is the use of the natural moisture processing, that reduces water consumption by 93% compared to a conventional iron ore production project.

Row 4

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis

☑ Alocação de capital

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

The Company has created a plan to meet the Scope 1 and 2 reduction target, and intends to invest from R20 billion (US4 billion) to R30 billion (US6 billion) by 2030 to develop low-carbon solutions, such as electrification, use of biofuels and use of renewable energy. The current portfolio of initiatives consolidates more than 40 projects, prioritizing the most competitive initiatives in terms of costs to reach the 2030 target. To increase renewable energy sources, in November 2022, the Company announced the entry into operation of the Sol do Cerrado solar project. In July 2023, the Company received authorization from the National Electric Energy Agency ("ANEEL") for commercial operation of the project's last photovoltaic plant. As of December 31, 2023, the carrying value of fixed assets related to Sol do Cerrado is R3,000. The Company also has a Power Purchase Agreement ("PPAs") with renewable energy suppliers, which makes it possible to account for the reduction of Scope 2 emissions. When developing the strategic plan, the Company qualitatively evaluates scenarios related to climate change and defines the base case to guide the positioning of its business, as well as testing resilience against other exploratory scenarios. The Company's approach to climate change is shaped by an analysis of global megatrends through a scenario-building tool. These scenarios not only offer insights into the future of mining, but also influence commodity price forecasts, capital allocation, portfolio decisions and business strategies, and can be linked to rising global temperatures. In this context, the Company observes the persistence of cycles characteristic of the mining industry over the coming decades, driven by an energy transition that occurs asynchronously and unevenly between different sectors and regions.

Row 5

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis

☑ Acesso ao capital

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

The risks and opportunities associated with the change in consumer's mentality and to the development of a greener portfolio, capable of contributing the steel sector decarbonization also influence on the company's strategy related to financing and access to capital. In 2023, Vale applied for a fund under the Bipartisan Infrastructure Law and Inflation Reduction Act, as part of the Industrial Demonstrations Program. Vale's project envisages the development of an innovative iron ore briquette industrial facility in the US, the first in the world applying the proprietary cold-agglomeration process for briquettes customized for the direct reduction route. In the first quarter of 2024 the US Government Department of Energy announced that Vale's project has been selected for award negotiations. This represents a critical path for the validation of Vale's proprietary cold-agglomeration technology, and its potential to deliver a transformative solution to decarbonize the steel sector, and highlights Vale's leadership in the development of decarbonization solutions for the global steel industry. Vale will negotiate an award for up to US 282.9 million for the U.S. project and looks to develop additional, customized facilities in Brazil and worldwide, to reach around 100 Mtpy of agglomerates production by 2030, including iron ore briquettes and pellets.

Row 6

(5.3.2.1) Elementos do planejamento financeiro que foram influenciados

Selecione todos os aplicáveis

☑ Custos diretos

(5.3.2.2) Tipo de efeito

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(5.3.2.3) Problemas ambientais relevantes para os riscos e/ou oportunidades ambientais que afetaram esses elementos do planejamento financeiro

Selecione todos os aplicáveis

☑ Água

(5.3.2.4) Descreva como os riscos e/ou oportunidades ambientais influenciaram a sua estratégia e/ou planejamento financeiro

By 2030, Vale plans to spend a total of US57.4 million which US10.3 million on water management, water-related capital and operational investments of US35.6 million and US11.5 million related to water. Vale has been investing in the so-called natural moisture processing method integrating water usage and increasing safety in mining. Currently, approximately 70% of Vale's iron ore production is achieved through natural moisture processing. Additionally, the company has

announced an investment plan of 2.3 billion between 2020 and 2025 to increase the use of filtration and dry stacking methods to account for 16% of the total production. A magnetic concentration plant for lowgrade iron ore is currently under construction at the Vargem Grande mine in Itabirito, developed by Vale itself in partnership with "New Steel" technology. In Vargem Grande, the tailings filtration process has been in operation since March 2023, allowing for the stacking of the majority of the material in solid state. Another solution is the use of the natural moisture processing, that reduces water consumption by 93% compared to a conventional iron ore production project.
[Adicionar linha]

(5.4) Na contabilidade financeira da organização, são identificados gastos/receitas alinhados com a transição climática da organização?

	Identificação dos gastos/receitas alinhados com a transição climática da organização
	Selecione de: ☑ Não, mas planejamos fazê-lo nos próximos dois anos

[Linha fixa]

(5.5) A sua organização investe em pesquisa e desenvolvimento (P&D) de bens ou serviços de baixo carbono relacionados às atividades do seu setor?

(5.5.1) Investimentos em P&D de baixo carbono

Selecione de:
☑ Sim

(5.5.2) Explique

Vale is consistently focused on improving its processes throughout research and development (R&D) projects. Vale Technological Institute (ITV), founded in 2010, is a non-profit institution, maintained by Vale that operates through ITV Sustainable Development (SD), located in Belém (PA), and ITV Mining (MI), located in Ouro

Preto and Santa Luzia (MG) and since 2022 in Pará, to develop low carbon and clean/renewable energy R&D and products. This institute has a dedicated research group focused on climate change that seeks to understand the science of climate change and to develop new technologies for Vale to better adapt to the new low-carbon economy. On this front, we highlight the research scholarship and project subsidies program for young residents in Pará whose dissertations are in line with one of the United Nations Sustainable Development Goals (SDGs).
[Linha fixa]

(5.5.4) Dê detalhes sobre os investimentos da organização em P&D sobre baixo carbono para atividades de produção de metais e mineração nos últimos três anos.

Row 1

(5.5.4.1) Área tecnológica

Selecione de:
☑ Outro, especifique :Energy Efficiency

(5.5.4.2) Estágio de desenvolvimento no ano de reporte

Selecione de:
☑ Pesquisa e desenvolvimento aplicados

(5.5.4.3) Porcentagem média dos investimentos totais em P&D nos últimos três anos

0.05

(5.5.4.4) Valor do investimento em P&D no ano de reporte (unidade monetária selecionada em 1.2) (opcional)

438930.34

(5.5.4.5) Porcentagem média dos investimentos totais em P&D planejados para os próximos cinco anos

0

(5.5.4.6) Explique como os investimentos em P&D da organização nesta área tecnológica estão alinhados com seus compromissos climáticos e/ou seu plano de transição climática

The emissions produced in shipping our products account for 0.5% of our Scope 3 emissions. So far, Vale's interim targets are aligned with a well below 2C scenario: -33% scopes 1 and 2 by 2030 versus 2017; and -15% net scope 3 emissions by 2035 versus 2018. This R&D project has 2 main research lines: 1) assessing the technical-economic viability of alternative fuels - biofuels, electrofuels and nuclear energy-, and evaluating the technical-economic feasibility of using Flettner rotors on ships, and 2) improving the energy efficiency of ships through hydrodynamic optimization and minimization of barnacle formation, by evaluating the efficiency of antifouling paints and the increase in resistance depending on the hull fouling index. The ITV (Vale Institute of Technology) Navigation projects focus on studying technologies and solutions that improve the energy efficiency of ships with the aim of reducing fuel consumption and greenhouse gas emissions, contributing to the achievement of the decarbonization goals imposed by the IMO. In addition, they also aim to study the impact of these goals and regulations on the international maritime transport of iron ore. This project is particularly relevant from the point of view of decarbonization as it enables the possibility of increasing the energy efficiency – through alternative fuels and/or hydrodynamic optimization – of ships and, thus, of reducing GHG emissions and contribute with Vale's scope 3 targets. Furthermore, Vale also intends to contribute to the IMO's goal of zero emissions by 2050. For the next 5 years, the investment plan for this project is about 0.0004 of the total R&D investment.

Row 2

(5.5.4.1) Área tecnológica

Selecione de:

☑ Combustíveis alternativos

(5.5.4.2) Estágio de desenvolvimento no ano de reporte

Selecione de:

☑ Implementação comercial em pequena escala

(5.5.4.3) Porcentagem média dos investimentos totais em P&D nos últimos três anos

0.02

(5.5.4.4) Valor do investimento em P&D no ano de reporte (unidade monetária selecionada em 1.2) (opcional)

1748396.28

(5.5.4.5) Porcentagem média dos investimentos totais em P&D planejados para os próximos cinco anos

0

(5.5.4.6) Explique como os investimentos em P&D da organização nesta área tecnológica estão alinhados com seus compromissos climáticos e/ou seu plano de transição climática

In 2023, Vale announced that it had produced, for the first time on an industrial scale, a commercially viable iron ore pellet without the use of anthracite coal. This test, conducted at the Vargem Grande pellet plant in Minas Gerais (MG), Brazil, successfully replaced 100% of the fossil fuel used in the pellet firing process with biocarbon. Biocarbon is a renewable product obtained through the carbonization of biomass, and it is considered carbon neutral. Anthracite coal accounts for about 50% of CO2 emissions in the pelletizing process, which is the most carbon-intensive stage in Vale's direct emissions. Currently, pelletizing contributes to 30% of the company's total Scope 1 emissions. The test began with a 50% substitution rate of coal with biocarbon, gradually increasing until it reached 100%. In total, approximately 50,000 tons of pellets were produced, including 15,000 tons made with 100% certified biocarbon. Vale's first pillar of climate action is related to minimizing our operational emissions. We have a target of reducing scope 1 and 2 emissions in 33% by 2030, aligned with the Paris Agreement goal of limiting global average temperature rise to well-below 2 degrees Celsius. For the next 5 years, the investment plan for this project is about 0.0013 of the total R&D investment.

Row 3

(5.5.4.1) Área tecnológica

Selecione de:

☑ Outro, especifique **:**Energy Efficiency

(5.5.4.2) Estágio de desenvolvimento no ano de reporte

Selecione de:

☑ Demonstração do piloto

(5.5.4.3) Porcentagem média dos investimentos totais em P&D nos últimos três anos

0

(5.5.4.4) Valor do investimento em P&D no ano de reporte (unidade monetária selecionada em 1.2) (opcional)

964829.57

(5.5.4.5) Porcentagem média dos investimentos totais em P&D planejados para os próximos cinco anos

0

(5.5.4.6) Explique como os investimentos em P&D da organização nesta área tecnológica estão alinhados com seus compromissos climáticos e/ou seu plano de transição climática

Since 2021, Vale's fleet has included the world's first large ore carrier equipped with rotor sails. This Very Large Ore Carrier (VLOC), known as a Guaibamax, has a capacity of 325,000 tons. The vessel is outfitted with five rotor sails, which can improve efficiency by up to 8%, leading to a potential reduction of up to 3,400 tons of CO2 equivalent per ship per year. If the pilot project proves successful, it's estimated that at least 40% of the fleet could adopt this technology, potentially lowering Vale's annual maritime iron ore transport emissions by nearly 1.5%. Rotor sails are cylindrical structures, each four meters in diameter and 24 meters tall—comparable to a seven-story building. These rotors spin at varying speeds, depending on environmental and operational conditions, generating a pressure difference that propels the ship forward through the Magnus effect. Vale spearheaded this initiative, with Finnish manufacturer Norsepower providing the technology. Korean shipowner Pan Ocean partnered in implementing the system on one of its VLOCs serving Vale. The Chinese design firm Shanghai Ship and Design Research Institute (SDARI) handled the vessel's design and integration with the rotor sails. The ship itself was constructed at the New Times Shipbuilding yard in China, already adapted to accommodate the sails, which were subsequently installed at PaxOcean Engineering Zhoushan, another Chinese shipyard. Our strategy to achieve our Scope 3 target consists of two core approaches: providing our customers with a portfolio of low- or zero-carbon iron ore agglomerates and building structural partnerships with our value chain. Improving the efficiency of the rotor sails can contribute to the reduction of our Scope 3 emissions associated with logistics categories. For the next 5 years, the investment plan for this project is about 0.0031 of the total R&D investment.

Row 4

(5.5.4.1) Área tecnológica

Selecione de:

☑ Combustíveis alternativos

(5.5.4.2) Estágio de desenvolvimento no ano de reporte

Selecione de:

☑ Demonstração do piloto

(5.5.4.3) Porcentagem média dos investimentos totais em P&D nos últimos três anos

0

(5.5.4.4) Valor do investimento em P&D no ano de reporte (unidade monetária selecionada em 1.2) (opcional)

1642238

(5.5.4.5) Porcentagem média dos investimentos totais em P&D planejados para os próximos cinco anos

0

(5.5.4.6) Explique como os investimentos em P&D da organização nesta área tecnológica estão alinhados com seus compromissos climáticos e/ou seu plano de transição climática

Replacing coal as the fuel in the dryer and heating processes, as well as a reductant, is paramount to the decarbonization of the Vale Base Metals business unit commitment in our Onça Puma (Brazil) operation. During 2023 we conducted a pilot demonstration of the handling systems and of a partial replacement of coal with a biomass-based product. For the next 5 years, the investment plan for this project is about 0.0017 of the total R&D investment.

Row 5

(5.5.4.1) Área tecnológica

Selecione de:

☑ Combustíveis alternativos

(5.5.4.2) Estágio de desenvolvimento no ano de reporte

Selecione de:

☑ Demonstração do piloto

(5.5.4.3) Porcentagem média dos investimentos totais em P&D nos últimos três anos

0

(5.5.4.4) Valor do investimento em P&D no ano de reporte (unidade monetária selecionada em 1.2) (opcional)

698510

(5.5.4.5) Porcentagem média dos investimentos totais em P&D planejados para os próximos cinco anos

0

(5.5.4.6) Explique como os investimentos em P&D da organização nesta área tecnológica estão alinhados com seus compromissos climáticos e/ou seu plano de transição climática

Replacing coal as a reductant, is paramount to the decarbonization of the Vale Base Metals business unit commitment in our Sorowako (Indonesia) operation – and, therefore, to our scopes 1 and 2 reduction commitments. During 2023 we conducted a pilot demonstration of the handling systems and a partial replace of coal with a biomass-based product.
[Adicionar linha]

(5.9) Qual é a tendência dos gastos de capital (CAPEX) e dos gastos operacionais (OPEX) relativos à água da organização para o ano de reporte e a tendência prevista para o próximo ano de reporte?

(5.9.1) CAPEX relativas à água (+/- % de variação)

13.93

(5.9.2) Tendência futura prevista para o CAPEX (+/- % de variação)

73

(5.9.3) OPEX relativas à água (+/- % de variação)

28.03

(5.9.4) Tendência futura prevista para o OPEX (+/- % de variação)

-27.6

(5.9.5) Explique

Vale's water-related investment in 2023 totaled USD 55.2 million, an increase of 13.97% compared to the USD 47.5 million of 2022, mainly driven by the acquisition of assets such as instruments and the implementation of treatment systems, as well as the development of IT tools. These investments reflect our commitment to ensure compliance with environmental standards and enhance technological capabilities. There was also an increase in water-related OPEX: in 2022, the amount was USD 26.3 million, while in 2023 these operational costs accounted for USD 36.5 million, mainly due to increase in assets maintenance costs, trainings, project

developments. The trend for 2024 is an increase in CAPEX and a decrease in OPEX for water-related investments and expenses. The former is related to investments in water treatment and efficiency technologies.
[Linha fixa]

(5.10) A organização usa um preço interno para externalidades ambientais?

	Uso da precificação interna das externalidades ambientais	Externalidade ambiental precificada
	Selecione de: ☑ Sim	*Selecione todos os aplicáveis* ☑ Carbono

[Linha fixa]

(5.10.1) Dê detalhes do preço interno de carbono da organização.

Row 1

(5.10.1.1) Tipo de esquema de precificação

Selecione de:
☑ Preço-sombra

(5.10.1.2) Objetivos para a implementação do preço interno

Selecione todos os aplicáveis
☑ Navegar pelas regulamentações
☑ Motivar a eficiência energética
☑ Conduzir análises de custo-benefício
☑ Identificar e aproveitar oportunidades de baixo carbono
☑ Influenciar a estratégia e/ou o planejamento financeiro
☑ Incentivar que as questões climáticas sejam levadas em conta na tomada de decisões

☑ Gerar investimentos de baixo carbono

☑ Outro, especifique **:Use an internal price for corporate engagement/stewardship purposes**

☑ Definir e/ou alcançar políticas e metas climáticos

(5.10.1.3) Fatores levados em conta ao se determinar o preço

Selecione todos os aplicáveis

☑ Análise de cenários

☑ Análise comparativa entre pares

☑ Legislação existente ou pendente

☑ Alinhamento com as normas internacionais

☑ Alinhamento com as orientações científicas

☑ Custo das medidas necessárias para se cumprirem as metas climáticas

(5.10.1.4) Metodologia de cálculo e suposições feitas ao se determinar o preço

In addition to a uniform and static carbon price of USD 50/ton CO2eq applied to risk and capital management, Vale adopted in 2023 carbon price curves aiming to mature market analysis. The shadow price of USD 50/tCO2e was established in 2020 in accordance to the Carbon Pricing Leadership Coalition (CLPC). To establish the carbon price curves, Vale has proceeded with desk review on published regulated carbon markets and research firms and Institutions, such as the International Energy Agency (IEA), World Bank, Principles for Responsible Investment (IPR), among others. A database was formed with the carbon price curves from different sources and two carbon price curves were adopted, one for Advanced Economies applied to developed countries e.g., OECD countries except Mexico, and other for Emerging and developing economies. Vale's Carbon pricing methodology is composed of three main steps beginning with the quantification of GHG emissions. With carbon accounting finished, carbon is monetized using the uniform and static shadow price, generating the emissions cost. Then, the NPV with the internal carbon price is included in the project's financial indicators and results to support decision making.

(5.10.1.5) Escopos abrangidos

Selecione todos os aplicáveis

☑ Escopo 1

☑ Escopo 2

(5.10.1.6) Abordagem de precificação utilizada – variação espacial

Selecione de:

☑ Diferenciada

(5.10.1.7) Indique como e por que o preço é diferenciado

Prices vary according to the burden allocated to economies of different sizes and the level of ambition for decarbonization. In the Strategic Planning cycle of 2023, two different carbon price curves were applied, one for Advanced Economies applied to developed countries e.g., OECD countries except Mexico, and other for Emerging and developing economies. Carbon price curves were applied only for market basis analysis, focused on revenue and cost sides, while a uniform price was applied for risk management purposes.

(5.10.1.8) Abordagem de precificação utilizada – variação temporal

Selecione de:

☑ Dinâmica

(5.10.1.9) Indique como a organização espera que o preço varie ao longo do tempo

Vale understands that carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions and ties them to their sources through a price. As stated by the World Bank, a price on carbon helps shift the burden for the damage from GHG emissions back to those responsible for it and who can avoid it. Instead of dictating who should reduce emissions where and how, a carbon price provides an economic signal to emitters, and allows them to decide to either transform their activities and lower their emissions or continue emitting and paying for their emissions. Placing an adequate price on GHG emissions is of fundamental relevance to internalize the external cost of climate change in the broadest possible range of economic decision making and in setting economic incentives for clean development. That said, Vale is maturing in the journey, and believes that internal carbon price shall change over time to reflect the last state and trends of carbon pricing instruments and market-based mechanisms. Vale is committed on revising the carbon price curves on a annual basis.

(5.10.1.10) Preço mínimo real utilizado (moeda por tonelada métrica de CO2e)

50

(5.10.1.11) Preço máximo real utilizado (moeda por tonelada métrica de CO2e)

180

(5.10.1.12) Processos de tomada de decisões de negócios a que o preço interno se aplica

Selecione todos os aplicáveis

☑ Gastos de capital

☑ Gestão do impacto

☑ Gestão de riscos

☑ Gestão de oportunidades

(5.10.1.13) O preço interno é obrigatório para processos de tomada de decisões comerciais

Selecione de:

☑ Sim, para todos os processos de tomada de decisões

(5.10.1.14) Porcentagem das emissões totais no ano de reporte nos escopos selecionados abrangidos por este preço interno

100

(5.10.1.15) A abordagem de precificação é monitorada e avaliada para alcançar objetivos

Selecione de:

☑ Sim

(5.10.1.16) Detalhes de como a abordagem de precificação é monitorada e avaliada para alcançar os objetivos da organização

• Vale developed a carbon pricing manual and training to support project leaders and developers to apply carbon pricing in project evaluation. Our pricing approach is evaluated annually by our Climate Change and Carbon team in accordance with the guidelines and methods described previously. • The association of GHG emissions cost in the investment feasibility analysis enables assessing the impact of emissions on the project valuation at the time of decision making - which may support the implementation of the mitigation projects from the Carbon Target portfolio. Thus, the internal carbon price is used as a tool to support Vale's efforts to reduce its corporate carbon emissions and is integrated into Vale's financial planning and investment analysis processes, as well as its project evaluation and capital allocation processes. The main method for the application of the carbon price in these routines is through the marginal discount curve, which enables us to prioritize the most cost-effective emission reduction initiatives, having the internal price as a reference. • Vale's internal carbon price has contributed to the implementation of its climate commitments and climate transition plan in several ways such as by incentivizing emissions reductions, guiding investment decisions, facilitating the integration of climate considerations into decision-making, and providing a transparent and consistent approach to emissions management. It is also applied to the processes of assessing low GHG emission scenarios for capital projects (versus a base case), evaluating less carbon intensive options. •Case: In 2023, carbon pricing was applied to compose the capital approval for an investment to exchange diesel for electrified trucks at Alemão Project. The project incorporated into the economic analysis the cost avoided from GHG emissions priced with the shadow price. • In 2023, Vale has adopted carbon price curves during its Strategic Planning Cycle with the lens of market analysis. During the cycle, based on the two scenarios aforementioned and the respective carbon price curves, Vale tested how market-based mechanisms can affect the companies' businesses on the revenue and cost sides. On the revenue side, the analysis was focused on products possibilities for premiums and demerits, and on the cost side a qualitative analysis was performed to understand risks and opportunities of market-based mechanisms. Further developments are planned to happen in 2024.

[Adicionar linha]

(5.11) A organização se engaja com sua cadeia de valor em relação às questões ambientais?

	Engajamo-nos com esta parte interessada com relação a questões ambientais	Problemas ambientais abrangidos
Fornecedores	*Selecione de:* ☑ Sim	*Selecione todos os aplicáveis* ☑ Mudanças climáticas ☑ Água
Clientes	*Selecione de:* ☑ Sim	*Selecione todos os aplicáveis* ☑ Mudanças climáticas
Investidores e acionistas	*Selecione de:* ☑ Sim	*Selecione todos os aplicáveis* ☑ Mudanças climáticas
Outras partes interessadas da cadeia de valor	*Selecione de:* ☑ Sim	*Selecione todos os aplicáveis* ☑ Água

[Linha fixa]

(5.11.1) A organização avalia e classifica os fornecedores de acordo com suas dependências e/ou impactos para o meio ambiente? [AINDA NÃO DISPONÍVEL]

Mudanças climáticas

(5.11.1.1) Avaliação das dependências e/ou impactos do fornecedor com relação ao meio ambiente

Selecione de:

☑ Sim, avaliamos as dependências e/ou impactos dos nossos fornecedores

(5.11.1.2) Critérios para avaliar as dependências e/ou impactos dos fornecedores com relação ao meio ambiente

Selecione todos os aplicáveis

☑ Outro, especifique **:**Classification as “High Risk” or “Very High Risk” in our ESG Criticaly Matrix

(5.11.1.3) Porcentagem de fornecedores de Nível 1 avaliados

Selecione de:

☑ 1-25%

(5.11.1.4) Defina um limite para classificar os fornecedores como tendo dependências e/ou impactos significativos para o meio ambiente

As per our Matrix a supplier is considered as having substantive impact on climate change considering mainly its sector, based on the SASB Materiality Map and the and the IFC Environmental, Health, and Safety Guidelines. High risk sectors for climate-related impacts are: rail and maritime transport services and metal and minerals and metallics.

(5.11.1.5) Porcentagem de fornecedores de Nível 1 que atendem aos limites de dependências e/ou impactos significativos para o meio ambiente

Selecione de:

☑ 76-99%

(5.11.1.6) Número de fornecedores de Nível 1 que atendem aos limites de dependências e/ou impactos significativos para o meio ambiente

163

Água

(5.11.1.1) Avaliação das dependências e/ou impactos do fornecedor com relação ao meio ambiente

Selecione de:

☑ Não, não avaliamos as dependências e/ou impactos dos nossos fornecedores e não temos planos de fazer isso nos próximos dois anos

[Linha fixa]

(5.11.2) A organização prioriza com quais fornecedores se engajar para as questões ambientais? [AINDA NÃO DISPONÍVEL]

Mudanças climáticas

(5.11.2.1) Priorização do engajamento com os fornecedores sobre esta questão ambiental

Selecione de:

☑ Sim, priorizamos com quais fornecedores nos engajar com relação a esta questão ambiental

(5.11.2.2) Critérios que informam quais fornecedores são priorizados para o engajamento com relação a esta questão ambiental

Selecione todos os aplicáveis

☑ Em alinhamento com os critérios utilizados para classificar os fornecedores como tendo dependências e/ou impactos significativos com relação às mudanças climáticas

☑ Gastos com aquisições

(5.11.2.4) Explique

The main form of supplier engagement is currently the CDP Supply Chain. Vale uses 3 criteria for selecting which suppliers to invite to report to CDP Supply Chain: its classification in our Climate Change Risk Matrix; procurement spend and active contract. The Climate Change Risk Matrix classifies supply categories according to their impact of CO2 emissions. To answer the CDP Climate Change Questionnaire, suppliers are selected with categories classified as "Very High Risk" and "High Risk", according to the Matrix. Suppliers are classified as Very High Risk and High Risk on the environmental assessment according to their GHG emissions and energy consumption (considering categories related to climate). In addition, we use the purchasing spending criteria, where we select for engagement all the suppliers that after the classification on our Climate Change Risk Matrix, together, correspond to 80% of the previous year's critical spending.

Água

(5.11.2.1) Priorização do engajamento com os fornecedores sobre esta questão ambiental

Selecione de:

☑ Não, não priorizamos com quais fornecedores nos engajar com relação a esta questão ambiental

(5.11.2.3) Razão principal para não haver priorização de fornecedores sobre esta questão ambiental

Selecione de:

☑ Não é uma prioridade estratégica imediata

(5.11.2.4) Explique

In 2022 and 2023, we have established a partnership with a specialized consultancy to identify our suppliers and classify them into categories based on the United Nations Standard Products and Services Code. Subsequently, we created a criticality matrix that encompasses potential ESG impacts, such as those related to water and effluent. This matrix systematically organizes the identified risks, considering their probability and potential impact level. Therefore, we have gained a comprehensive understanding of the socio-environmental implications of our supply chain, highlighting the potential risks of legal and reputational coresponsibility and defining the criticality level for each supplier. Currently, Vale is developing specific and appropriate management initiatives that align with the criticality classification of each supplier. Vale has an engagement strategy with suppliers that prioritizes aspects related to other environmental issues. Since 2023, we have been planning to develop a sustainable procurement program that would address supplier-related impacts to aspects such as water security. However, it was deprioritized in 2024 and is expected to take place in 2026.
[Linha fixa]

(5.11.5) Os fornecedores da organização devem atender a exigências ambientais como parte do processo de aquisição da organização?

	Os fornecedores devem atender a requisitos ambientais específicos relacionados a esta questão ambiental como parte do processo de aquisição	Política em vigor para a abordagem da não-conformidade dos fornecedores	Explique
Mudanças climáticas	*Selecione de:* ☑ Sim, os requisitos ambientais relacionados a esta questão ambiental estão incluídos nos contratos com nossos fornecedores	*Selecione de:* ☑ Sim, temos uma política em vigor para abordar a não-conformidade	*N/A*
Água	*Selecione de:*	*Selecione de:*	*N/A*

	Os fornecedores devem atender a requisitos ambientais específicos relacionados a esta questão ambiental como parte do processo de aquisição	Política em vigor para a abordagem da não-conformidade dos fornecedores	Explique
	☑ Sim, os requisitos ambientais relacionados a esta questão ambiental estão incluídos nos contratos com nossos fornecedores	☑ Sim, temos uma política em vigor para abordar a não-conformidade	

[Linha fixa]

(5.11.6) Dê detalhes dos requisitos ambientais que os fornecedores devem atender como parte do processo de compra da organização e as medidas de conformidade em vigor.

Mudanças climáticas

(5.11.6.1) Requisito ambiental

Selecione de:

☑ Conformidade com uma certificação ambiental, especifique **:**Environmental license; certificate of compliance with Federal Technical Registry of Ibama (Brazilian Institue of Environment), and Chemical Product Safety Information Sheet in accordance with NBR 14725.

(5.11.6.2) Mecanismos para o monitoramento da conformidade com este requisito ambiental

Selecione todos os aplicáveis

☑ Certificação

(5.11.6.3) Porcentagem de fornecedores de nível 1 por gastos com aquisições que devem atender a este requisito ambiental

Selecione de:

☑ Menos de 1%

(5.11.6.4) Porcentagem de fornecedores de nível 1 por gastos com aquisições em conformidade com este requisito ambiental

Selecione de:
☑ Menos de 1%

(5.11.6.7) Porcentagem das emissões de Escopo 3 relacionada aos fornecedores de nível 1 atribuível aos fornecedores que devem atender a este requisito ambiental

Selecione de:
☑ Menos de 1%

(5.11.6.8) Porcentagem das emissões de Escopo 3 relacionada aos fornecedores de nível 1 atribuível aos fornecedores em conformidade com este requisito ambiental

Selecione de:
☑ Menos de 1%

(5.11.6.9) Resposta à não-conformidade do fornecedor com este requisito ambiental

Selecione de:
☑ Excluir

(5.11.6.12) Explique

Not applicable.

Água

(5.11.6.1) Requisito ambiental

Selecione de:
☑ Conformidade com uma certificação ambiental, especifique

(5.11.6.2) Mecanismos para o monitoramento da conformidade com este requisito ambiental

Selecione todos os aplicáveis

☑ Quadro de resultados ou classificação dos fornecedores

(5.11.6.3) Porcentagem de fornecedores de nível 1 por gastos com aquisições que devem atender a este requisito ambiental

Selecione de:

☑ Menos de 1%

(5.11.6.4) Porcentagem de fornecedores de nível 1 por gastos com aquisições em conformidade com este requisito ambiental

Selecione de:

☑ Menos de 1%

(5.11.6.9) Resposta à não-conformidade do fornecedor com este requisito ambiental

Selecione de:

☑ Excluir

(5.11.6.12) Explique

The evaluation of our suppliers is an essential part of our engagement strategy. We conduct comprehensive assessments, considering all contract items and agreed-upon requirements. This evaluation allows us to ensure the quality of services provided and compliance with established standards. In cases of low scores or identified non-conformities, we take appropriate measures, which may include warnings and the implementation of an action plan to address the issues. In more serious situations, if necessary, we may terminate the contract with the supplier in question. Our approach to suppliers reflects our commitment to operational excellence and adherence to high ethical and quality standards. We believe that careful selection and ongoing evaluation of our suppliers are crucial to ensuring strong and sustainable business relationships, promoting service quality, and mitigating risks in our value chain.
[Adicionar linha]

(5.11.7) Dê mais detalhes do engajamento da organização com o fornecedor com relação às questões ambientais.

Mudanças climáticas

(5.11.7.2) Ação impulsionada pelo engajamento do fornecedor

Selecione de:

☑ Redução de emissões

(5.11.7.3) Tipo e detalhes do engajamento

Qualificação

☑ Oferecer treinamento, suporte e boas práticas sobre como medir as emissões de GEEs

☑ Dar treinamento, suporte e boas práticas sobre como reduzir o impacto ambiental

Coleta de informações

☑ Coletar dados de emissões de GEEs pelo menos anualmente junto dos fornecedores

☑ Coletar informações sobre as metas pelo menos anualmente junto dos fornecedores

(5.11.7.4) Abrangência da cadeia de valor upstream

Selecione todos os aplicáveis

☑ Fornecedores da Camada 1

(5.11.7.5) Porcentagem de fornecedores de nível 1 por gastos com aquisição abrangidos pelo engajamento

Selecione de:

☑ 26-50%

(5.11.7.6) % das emissões de escopo 3 relacionadas a fornecedores de nível 1 abrangidas pelo engajamento

Selecione de:

☑ Desconhecido

(5.11.7.9) Descreva o engajamento da organização e explique o efeito desse engajamento na ação ambiental selecionada

With our broader value chain accounting for 97.9% of our global emissions, mitigating these emissions is crucial to our overall decarbonization strategy. Therefore, we have established a target to achieve a 15% reduction in our value-chain initiatives by 2035, from a 2018 baseline. Vale then requests that a portion of its suppliers report to CDP Supply Chain, to obtain information about their management in relation to the issue of climate change and to engage them and share good practices in this regard. The criteria for selecting these suppliers is their classification as "Very High Risk" and "High Risk" in our Climate Change Risk matrix. Our metric on this activity is the number of suppliers reporting to CDP Supply Chain upon Vale's request. Our success measure is that at least 95% of the invited suppliers answer CDP Supply Chain. In 2023, the percentage of submissions/invited suppliers was 98%, and the activity can be considered successful for the reporting year. The main impacts of this engagement action are the improvement of our scope 3 calculations and accuracy, and the dissemination of information on good practices in managing climate change throughout our value chain. Additionally, our team has sought to engage with suppliers in the post-CDP cycle by sharing information to help them improve next year's responses; and through in-person workshops to exchange good practices with suppliers in certain categories. Furthermore, over the last four years, 566 Vale suppliers voluntarily joined the initiative. Together, these suppliers reported a reduction in emissions of 350 million tons of CO2eq per year since 2020.

(5.11.7.10) O engajamento ajuda seus fornecedores de nível 1 a cumprir um requisito ambiental relacionado a essa questão ambiental

Selecione de:

☑ Não, este engajamento não está relacionado ao cumprimento de um requisito ambiental

(5.11.7.11) O engajamento está ajudando os fornecedores de nível 1 a se envolverem com seus fornecedores com relação à ação selecionada

Selecione de:

☑ Sim

Água

(5.11.7.2) Ação impulsionada pelo engajamento do fornecedor

Selecione de:

☑ Transparência na cadeia de valor upstream e dos direitos humanos

(5.11.7.3) Tipo e detalhes do engajamento

Qualificação

☑ Outra atividade de capacitação, especifique **:**Provide training, support and best practices on how to mitigate human rights impact

(5.11.7.4) Abrangência da cadeia de valor upstream

Selecione todos os aplicáveis

☑ Fornecedores da Camada 1

(5.11.7.5) Porcentagem de fornecedores de nível 1 por gastos com aquisição abrangidos pelo engajamento

Selecione de:

☑ 1-25%

(5.11.7.7) % de fornecedores de nível 1 com impactos significativos e/ou dependências relacionadas a essa questão ambiental coberta pelo engajamento

Selecione de:

☑ Desconhecido

(5.11.7.9) Descreva o engajamento da organização e explique o efeito desse engajamento na ação ambiental selecionada

Vale recognizes and understands the numerous challenges that exist in its activities regarding human rights, due to the inherent characteristics of the extractive sector and the locations where it operates. Our commitment to human rights accompanies all phases of the life cycle of the projects – from mineral exploration to mine closure and in all business lines. In this sense, engagement with stakeholders on critical human rights issues is necessary to achieve better proposals and solutions and contribute to the advancement of Vale's agenda across the board. Depending on the characteristics of each audience and the most sensitive issues, Vale works with a thematic matrix that guides the focus of its actions, and suppliers are an important audience in this regard. In contracts with Vale, suppliers commit to clauses related to respect for Human Rights and, in addition to Human Rights Due Diligence, which reaches its first-tier suppliers, assessing risks and impacts, Vale also promotes training and qualifications aimed at this audience. In 2023, 412 suppliers received training from Vale on the topic of Human Rights, and 199 were trained on our Sharing track, focused on social action. In addition, all suppliers have access to our Human Rights Guide, with information on identifying and mitigating risks related to this topic, and with a section focused on the value chain. Our document Principles of Conduct for Third Parties, prepared for suppliers, also publicly available, provides guidance also related to the topic of human rights.

(5.11.7.10) O engajamento ajuda seus fornecedores de nível 1 a cumprir um requisito ambiental relacionado a essa questão ambiental

Selecione de:

☑ Não, este engajamento não está relacionado ao cumprimento de um requisito ambiental

(5.11.7.11) O engajamento está ajudando os fornecedores de nível 1 a se envolverem com seus fornecedores com relação à ação selecionada

Selecione de:
☑ Sim
[Adicionar linha]

(5.11.9) Dê detalhes de eventuais atividades de engajamento ambiental com outras partes interessadas na cadeia de valor. [AINDA NÃO DISPONÍVEL]

Mudanças climáticas

(5.11.9.1) Tipo de parte interessada

Selecione de:
☑ Clientes

(5.11.9.2) Tipo e detalhes do engajamento

Inovação e colaboração
☑ Colaborar com as partes interessadas em inovações para reduzir os impactos ambientais nos produtos e serviços

(5.11.9.3) Porcentagem do tipo de parte interessada engajada

Selecione de:
☑ 1-25%

(5.11.9.4) Porcentagem das emissões de Escopo 3 associadas às partes interessadas

Selecione de:
☑ 51-75%

(5.11.9.5) Justificativa para engajar essas partes interessadas e escopo do engajamento

To provide low carbon solutions to the steel industry, we have signed MoUs with over 40 companies since 2021, representing around 56% of customer-related scope 3 emissions (as reported in C6.5), i.e., in which the companies agreed to pursue opportunities to develop steelmaking solutions focused on reducing CO2 emissions. Vale has chosen strategic customers to be engaged based on their representativeness of Vale's scope 3 emission, and appetite to implement new technologies and the customer's need to implement decarbonization initiatives. Our own initiatives may respond to 15-25% of the emission reduction by 2035, related to our scope 3 target. For the remaining 85-75% of scope 3 emissions reductions, we will lead through partnership. In 2023, we signed MOU with GravitHy to explore solutions for low carbon steel using Vales iron ore briquettes in a DRI plant. Through this agreement, Vale and GravitHy will jointly study the feasibility of developing a co-located plant in For Sur Mer (France) to produce direct reduction briquettes to feed GravitHy DRI plant. With H2 Green Steel Vale signed an agreement to jointly study the development of industrial hubs in Brasil and North America considering the great potential of renewable energy availability. In such centers, H2 Green Steel aims to produce low carbon products such as green hydrogen and hot briquetted iron (HBI), using Vales iron ore agglomerates as input material and renewable energy as source for hydrogen production. Vale has also advanced on Mega Hubs project by signing off take agreement with Essar Group to supply iron ore agglomerates. Vale and the Indian steel group Essar have signed a letter of intent establishing a partnership to supply iron ore agglomerates for the Green Steel Arabia (GSA) project in Saudi Arabia. It is the first preliminary off take supply agreement signed by Vale with a client that will be installed in a Mega Hub, an industrial complex aimed at manufacturing low-carbon steel products. Under the agreement, Vale will supply 4 million tons per year of iron ore agglomerates (pellets or briquettes) for the direct reduction route. The briquettes will be produced by Vale at the Mega Hub in Saudi Arabia.

(5.11.9.6) Impacto do engajamento e medições de sucesso

The main metric of this activity is the number of clients with signed climate-related MoUs/NDAs and the representativeness of their emissions when compared to our total scope 3 client-related emissions. Vale considers as a measure of success reaching or exceeding the representativeness of 30% of 'customer-related scope 3 emissions when considering the sum of the emissions of our MoUs/NDAs' clients. So far, Vale signed MoU/NDA with over 40 clients, which represents 56% of our scope 3 emissions. This engagement effort can then be considered successful. The main impact of this engagement is the provision of opportunities to develop steel solutions focused on reducing CO2 emissions. Additionally, this action also aims to have an impact on reducing scope 3 emissions at Vale and the Mining Sector in general. Vale's scope 3 emissions, indirect GHG emissions calculated along the value chain, include upstream and downstream emissions. In 2023, scope 3 emissions decreased 1.4% compared to 2022, and 14.8% compared to the 2018 base year.

Água

(5.11.9.1) Tipo de parte interessada

Selecione de:

☑ Outras partes interessadas da cadeia de valor, especifique **:**Local Community

(5.11.9.2) Tipo e detalhes do engajamento

Compartilhamento de aprendizado/informações

☑ Instruir e trabalhar com as partes interessadas na compreensão e na medição da exposição aos riscos ambientais

(5.11.9.3) Porcentagem do tipo de parte interessada engajada

Selecione de:

☑ 76-99%

(5.11.9.5) Justificativa para engajar essas partes interessadas e escopo do engajamento

Vale participates in the Watershed Committees of all the 7 watersheds we operate in. Watersheds are a shared resource and, to inform our water-related initiatives, it is vital that we gain insight into watershed stakeholders and their expectations. Vale actively participates in the committees (CBH) of the Doce, Velhas, Paraopeba, Piranga, Piracicaba, Santo Antônio, and Santa Maria da Vitória watershed, which support transparent communication and greater accountability at the local and regional level. Watershed committees are regional forums in which local communities and public authorities and civil society representatives discuss and deliberate on water resources management. The meetings take place periodically and following a pre-established agenda, which are prioritized based on the interests of the members. Vale's participation on committees (in 2023, in 87% of the stakeholder type) of all the watersheds it has operations in is relevant because it allows the Company to be aware of the interests of important components of its value chain – such as the local community. It also allows Vale to provide information in a transparent manner about its activities and possible local impacts to the target audience.

(5.11.9.6) Impacto do engajamento e medições de sucesso

Our metric for this activitiy is the % of participation in watersheds committees in relation to the total of committees that cover our activities. So far, we participate in 13 of the 15 committees (87%), and our target is to participate as a member in 100% of them – this is part of our water targets involving engagement with the local communities. In 2023, then, it cannot be considered completely successful, even though we had participation on committees in all the watersheds Vale has operations in. Among the main positive impacts of this action are transparent communication and, consequently, stakeholders (communities and local authorities) informed about Vale and the actions that can impact them. This also allows the company to get closer to these important stakeholders and exchange relevant information regarding the management and preservation of water resources.
[Adicionar linha]

(5.12) Indique eventuais iniciativas ambientais mutuamente benéficas na qual a organização pode colaborar com membros específicos do programa Supply Chain do CDP.

Row 1

(5.12.1) Membro solicitante

Selecione de:

(5.12.2) Questões ambientais com que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.12.4) Categoria e tipo de iniciativa

Inovação

☑ Novo produto ou serviço com um menor impacto de emissões upstream

(5.12.5) Detalhes da iniciativa

At Vale Base Metals, we are moving fast and with purpose to leverage our unique scale and world-class resources to safely deliver low-carbon metals essential for energy transition technologies. ESG is not just an initiative or project, it is a part of who we are and what we do. We have made significant commitments to improve ourselves with respect to the greenhouse gases (GHGs) that we emit or that we are indirectly associated with through our value chain. Vale Base Metals is very much interested in any mutual initiative that would result in lower its direct GHG emissions, or its indirect (Scope 3) emissions. We are open to all conversation about how we can collaborate to drive changes that will reduce emissions. This includes the decarbonization of Vale Base Metals assets, its value chain (suppliers and customers) and improved data sharing and transparency measures.

(5.12.6) Benefícios esperados

Selecione todos os aplicáveis

☑ Maior transparência da cadeia de valor upstream/downstream

☑ Redução das emissões operacionais próprias (Escopos 1 e 2 próprios)

☑ Redução nas emissões da cadeia de valor downstream (Escopo 3 próprio)

(5.12.7) Prazo estimado para a realização dos benefícios

Selecione de:

☑ 1-3 anos

(5.12.8) É possível estimar as economias de CO2e e/ou de água desta iniciativa no seu tempo de duração?

Selecione de:

☑ Não

(5.12.11) Explique

N/A

Row 2

(5.12.1) Membro solicitante

Selecione de:

(5.12.2) Questões ambientais com que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.12.4) Categoria e tipo de iniciativa

Inovação

☑ Novo produto ou serviço com um menor impacto de emissões upstream

(5.12.5) Detalhes da iniciativa

Vale S.A and Vale Base Metals have made significant commitments to improve ourselves with respect to the greenhouse gases (GHGs) that we emit or that we are indirectly associated with through our value chain. Vale has its own portfolio of top-quality products that will set the stage for a reduction of steel- manufacture emissions, including innovative technologies and processes. At Vale Base Metals, we are moving fast and with purpose to leverage our unique scale and world-class resources to safely deliver low-carbon metals essential for energy transition technologies. ESG is not just an initiative or project, it is a part of who we are and what we do. Vale S.A and Vale Base Metals is very much interested in any mutual initiative that would result in lower its direct GHG emissions, or its indirect (Scope 3) emissions. We are open to all conversation about how we can collaborate to drive changes that will reduce emissions. This includes the decarbonization of Vale S.A and Vale Base Metals assets, its value chain (suppliers and customers) and improved data sharing and transparency measures.

(5.12.6) Benefícios esperados

Selecione todos os aplicáveis

☑ Maior transparência da cadeia de valor upstream/downstream

☑ Redução das emissões operacionais próprias (Escopos 1 e 2 próprios)

☑ Redução nas emissões da cadeia de valor downstream (Escopo 3 próprio)

(5.12.7) Prazo estimado para a realização dos benefícios

Selecione de:

☑ Outro, especifique **:**Vale strives to reduce its carbon emissions as soon as possible. The faster any potential collaborative emissions reductions can take place, the better

(5.12.8) É possível estimar as economias de CO2e e/ou de água desta iniciativa no seu tempo de duração?

Selecione de:

☑ Não

(5.12.11) Explique

N/A

Row 3

(5.12.1) Membro solicitante

Selecione de:

(5.12.2) Questões ambientais com que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.12.4) Categoria e tipo de iniciativa

Inovação

☑ Novo produto ou serviço com um menor impacto de emissões upstream

(5.12.5) Detalhes da iniciativa

At Vale Base Metals, we are moving fast and with purpose to leverage our unique scale and world-class resources to safely deliver low-carbon metals essential for energy transition technologies. ESG is not just an initiative or project, it is a part of who we are and what we do. We have made significant commitments to improve ourselves with respect to the greenhouse gases (GHGs) that we emit or that we are indirectly associated with through our value chain. Vale Base Metals is very much interested in any mutual initiative that would result in lower its direct GHG emissions, or its indirect (Scope 3) emissions. We are open to all conversation about how we can collaborate to drive changes that will reduce emissions. This includes the decarbonization of Vale Base Metals assets, its value chain (suppliers and customers) and improved data sharing and transparency measures.

(5.12.6) Benefícios esperados

Selecione todos os aplicáveis

☑ Maior transparência da cadeia de valor upstream/downstream

☑ Redução das emissões operacionais próprias (Escopos 1 e 2 próprios)

☑ Redução nas emissões da cadeia de valor downstream (Escopo 3 próprio)

(5.12.11) Explique

N/A

Row 4

(5.12.1) Membro solicitante

Selecione de:

(5.12.2) Questões ambientais com que a iniciativa se relaciona

Selecione todos os aplicáveis

☑ Mudanças climáticas

(5.12.4) Categoria e tipo de iniciativa

Inovação

☑ Novo produto ou serviço com um menor impacto de emissões upstream

(5.12.5) Detalhes da iniciativa

At Vale Base Metals, we are moving fast and with purpose to leverage our unique scale and world-class resources to safely deliver low-carbon metals essential for energy transition technologies. ESG is not just an initiative or project, it is a part of who we are and what we do. We have made significant commitments to improve ourselves with respect to the greenhouse gases (GHGs) that we emit or that we are indirectly associated with through our value chain. Vale Base Metals is very much interested in any mutual initiative that would result in lower its direct GHG emissions, or its indirect (Scope 3) emissions. We are open to all conversation about how we can collaborate to drive changes that will reduce emissions. This includes the decarbonization of Vale Base Metals assets, its value chain (suppliers and customers) and improved data sharing and transparency measures.

(5.12.6) Benefícios esperados

Selecione todos os aplicáveis

☑ Maior transparência da cadeia de valor upstream/downstream

☑ Redução das emissões operacionais próprias (Escopos 1 e 2 próprios)

☑ Redução nas emissões da cadeia de valor downstream (Escopo 3 próprio)

(5.12.11) Explique

N/A
[Adicionar linha]

(5.13) A organização já implementou alguma iniciativa ambiental mutuamente benéfica devido ao engajamento com um membro do programa Supply Chain do CDP?

(5.13.1) Iniciativas ambientais implementadas devido ao engajamento com um membro do programa Supply Chain do CDP

Selecione de:

☑ Não, e não planejamos fazê-lo nos próximos dois anos

(5.13.2) Razão principal para não se implementarem iniciativas ambientais

Selecione de:

☑ Outro, especifique **:**Limited engagement has taken place with CDP Supply Chain members beyond surveys.

(5.13.3) Explique por que a organização não implementou nenhuma iniciativa ambiental

Vale has implemented many environmental initiatives on its own, with partners, and its supply chain that will benefit both itself and other parties. However, none of these initiatives have been directly implemented as a result of engagement through the CDP Supply Chain program. Therefore, Vale S.A and Vale Base Metals does not have any immediate plans for opportunities as a result of the program. We are open to all conversations about how we can collaborate to drive beneficial environmental initiatives.
[Linha fixa]

C6. Desempenho ambiental - Método de consolidação

(6.1) Forneça detalhes sobre o método de consolidação escolhido para o cálculo dos dados de desempenho ambiental.

Mudanças climáticas

(6.1.1) Método de consolidação usado

Selecione de:

☑ Controle operacional

(6.1.2) Forneça a justificativa para a escolha do método de consolidação

Vale's GHG Inventory adopts the operational control approach since the beginning of the disclosure. There was studies and analysis done using other approaches, but it is important to maintain the same approach of previous years to facilitate the comprehension evolution of GHG emissions at Vale.

Água

(6.1.1) Método de consolidação usado

Selecione de:

☑ Controle operacional

(6.1.2) Forneça a justificativa para a escolha do método de consolidação

Vale's water indicators adopt an operational control approach, including all its direct operations.

Plásticos

(6.1.1) Método de consolidação usado

Selecione de:

☑ Controle operacional

(6.1.2) Forneça a justificativa para a escolha do método de consolidação

Vale's report about plastics adopt an operational control approach, including all its direct operations.

Biodiversidade

(6.1.1) Método de consolidação usado

Selecione de:

☑ Controle operacional

(6.1.2) Forneça a justificativa para a escolha do método de consolidação

Vale's report about biodiversity adopt an operational control approach, including all its direct operations.
[Linha fixa]

C7. Desempenho ambiental – Mudanças climáticas

(7.1) Este é o primeiro ano de reporte de dados de emissões da organização ao CDP?

Selecione de:
☑ Não

(7.1.1) A organização passou por alguma mudança estrutural no ano de reporte, ou há alguma mudança estrutural prévia sendo representada neste reporte de dados de emissões?

(7.1.1.1) Houve alguma mudança estrutural?

Selecione todos os aplicáveis
☑ Sim, outra mudança estrutural, especifique **:**Carve out

(7.1.1.2) Nome da(s) organização(ões) adquirida(s), desinvestida(s) ou fundida(s)

Vale Base Metals Limited

(7.1.1.3) Detalhes da(s) mudança(s) estrutural(is), incluindo as datas de conclusão

In July/2023 Vale SA made a strategic decision to carve out its Energy Transition Metals operations and created a standalone subsidiary to hold the assets of this business: Vale Base Metals Limited. VBML is a holding company incorporated under the UK laws with independent governance. Its Board of Directors and advisory committees were constituted in October/2023 and are composed by independent members and Vale SA nominees. In late April/2024, with the conclusion of the purchase of 10% stake, Manara Minerals appointed its representatives to the board and committees.Despite the establishment of an independent vehicle, VBML governance allows continuous reporting of Environmental, Social, and Governance (ESG) information and metrics to Vale SA. These metrics are consolidated into Vale SA's overall ESG framework, thereby ensuring a comprehensive representation of the ESG performance of the entire organization, including VBML. Consequently, the governance and metrics presented in this report encompass both Vale SA and Vale Base Metals Limited, unless explicitly stated otherwise. [Linha fixa]

(7.1.2) A metodologia de contabilização das emissões, os limites e/ou a definição do ano de reporte foram alterados no ano de reporte?

	Alteração(ões) na metodologia, nos limites e/ou na definição do ano de reporte?
	Selecione todos os aplicáveis ☑ Não

[Linha fixa]

(7.1.3) As emissões do ano-base da organização e as emissões dos anos passados foram recalculadas, como resultado de eventuais alterações ou erros reportados em 7.1.1 e/ou 7.1.2?

(7.1.3.1) Recálculo do ano-base

Selecione de:

☑ Não, porque não avaliamos se as alterações devem causar um recálculo do ano-base

(7.1.3.3) Política de recálculo das emissões do ano-base, incluindo o limite de significância

Despite of the announcement of Vale Base Metals Limited Carve Out, the methodology, boundary and reporting definition of the reported data is similar to the previous year, the changes should be reflected in Vale's 2024 GHG Inventory.

(7.1.3.4) Recálculo dos anos passados

Selecione de:

☑ Não

[Linha fixa]

(7.2) Selecione o nome da norma, do protocolo ou da metodologia usado/a para coletar os dados das atividades e calcular as emissões.

Selecione todos os aplicáveis

☑ ISO 14064-1

☑ Programa do GHG Protocol Brasil

☑ The Greenhouse Gas Protocol: Orientações sobre o Escopo 2

☑ IPCC Guidelines for National Greenhouse Gas Inventories, 2006

☑ The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

☑ Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019

☑ The Greenhouse Gas Protocol Agricultural Guidance: Interpreting the Corporate Accounting and Reporting Standard for the Agricultural Sector

☑ Outro, especifique :NIR (National Inventory Report) GHG Sources & Sinks Canada

(7.3) Descreva o método usado para reportar as emissões de Escopo 2 de sua organização.

(7.3.1) Escopo 2, com base na localização

Selecione de:

☑ Estamos divulgando um valor de Escopo 2 com base na localização

(7.3.2) Escopo 2, com base no mercado

Selecione de:

☑ Estamos divulgando um valor de Escopo 2 com base no mercado

(7.3.3) Explique

Scope 2 emissions in 2023, accounted by the Market Based methodology, totaled 0.32 million tCO2e. These emissions, unlike the accounting by the Location methodology, presented above, consider Vale's energy acquisition contracts as well as concession contracts for its own assets, attesting their renewable origin through certificates or declarations from generators. In 2023, from the total energy contracted and consumed via GRID, by Vale's operations in Brazil, Vale deducted a total of 7,3 TWh, from renewable sources.
[Linha fixa]

(7.4) Existem fontes (por ex., instalações, GEEs específicos, atividades, regiões etc.) de emissões de Escopo 1, Escopo 2 ou Escopo 3 que estejam dentro dos limites de reporte selecionados, mas que não estão incluídas na divulgação?

Selecione de:
☑ Sim

(7.4.1) Forneça detalhes sobre as fontes de emissões de Escopo 1, Escopo 2 e Escopo 3 dentro dos limites de reporte selecionados, mas não incluídas no reporte.

Row 1

(7.4.1.1) Fonte de emissões excluída

Solid Waste and Wastewater treatment

(7.4.1.2) Escopo(s) ou categoria(s) do Escopo 3

Selecione todos os aplicáveis
☑ Escopo 1
☑ Escopo 2 (com base na localização)
☑ Escopo 2 (com base no mercado)
☑ Escopo 3: Resíduos gerados nas operações

(7.4.1.3) Relevância das emissões de Escopo 1 desta fonte

Selecione de:
☑ As emissões não são relevantes

(7.4.1.4) Relevância das emissões de Escopo 2 desta fonte, com base na localização

Selecione de:
☑ As emissões não são relevantes

(7.4.1.5) Relevância das emissões de Escopo 2 desta fonte, com base no mercado

Selecione de:

☑ As emissões não são relevantes

(7.4.1.6) Relevância das emissões de Escopo 3 desta fonte

Selecione de:

☑ As emissões não são relevantes

(7.4.1.8) Porcentagem estimada do total de emissões de Escopo 1+2 representada por esta fonte excluída

0.3

(7.4.1.9) Porcentagem estimada do total de emissões de Escopo 3 representada por esta fonte excluída

0

(7.4.1.10) Explique por que essa fonte foi excluída

Vale has assessed the materiality of these emission sources in 2009 and again in 2024, regarding 2023 calendar year, and the calculations demonstrated that the emissions from Solid Waste and Wastewater treatment remains not material, representing 0.29% of Scope 1 and 2 emissions in 2023 and 0.04% of Vale's total emissions (Scope 1, 2 and 3). Then, we will not include these emission sources as they are irrelevant to Vale's inventory and to the mining sector.

(7.4.1.11) Explique como foi estimada a porcentagem de emissões representada por esta fonte excluída

Calculation: "Estimated emissions from Waste and Wastewater treatment" / ("Scope 1and 2 emissions" "Estimated emissions from excludes sources") 25,619 /,(9,720,848.927,131) 0.28 %
[Adicionar linha]

(7.5) Informe o ano-base e as emissões do ano-base.

Escopo 1

(7.5.1) Fim do ano-base

12/31/2017

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

10918643.91

(7.5.3) Detalhes metodológicos

The 2017 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 2 (com base na localização)

(7.5.1) Fim do ano-base

12/31/2017

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

1294622.3

(7.5.3) Detalhes metodológicos

The 2017 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 2 (com base no mercado)

(7.5.1) Fim do ano-base

12/31/2017

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

1294622.3

(7.5.3) Detalhes metodológicos

The 2017 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 1: Bens e serviços adquiridos

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

1740953.8

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 2: Bens de capital

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

26918.2

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 3: Atividades relacionadas a combustível e energia (não incluídas no Escopo 1 ou 2)

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

1565294.4

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 4: Transporte e distribuição upstream

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

13903675.1

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 6: Viagens de negócios

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

6573.3

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 7: Deslocamentos diários dos funcionários para/do trabalho

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

41482.1

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 9: Transporte e distribuição downstream

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

5054628.8

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 10: Processamento de produtos vendidos

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

506625441.6

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.

Escopo 3, categoria 15: Investimentos

(7.5.1) Fim do ano-base

12/31/2018

(7.5.2) Emissões do ano-base (toneladas métricas de CO2e)

578169.73

(7.5.3) Detalhes metodológicos

The 2018 emissions result is certified by a third party and may be impacted by recalculations due to significant changes in boundaries, methodologies, and data input errors, according to the GHG Protocol standard.
[Linha fixa]

(7.6) Qual foi o total de emissões brutas de Escopo 1 da organização, em toneladas métricas de CO2e?

Ano de reporte

(7.6.1) Emissões brutas de Escopo 1 (toneladas métricas de CO2e)

9391859.89

(7.6.3) Detalhes metodológicos

Vale's Scope 1 emissions are calculated using the methodology recommended by: - 2006 and 2019 Refinement IPCC Guidelines for National Greenhouse Gas Inventories - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - Environment Canada, Base Metals Smelting/Refining, Guidance Manual for Estimating Greenhouse Gas Emissions - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines

Ano passado 1

(7.6.1) Emissões brutas de Escopo 1 (toneladas métricas de CO2e)

8552751.42

(7.6.2) Data de fim

12/31/2022

(7.6.3) Detalhes metodológicos

Vale's Scope 1 emissions are calculated using the methodology recommended by: - 2006 and 2019 Refinement IPCC Guidelines for National Greenhouse Gas Inventories - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - Environment Canada, Base Metals Smelting/Refining, Guidance Manual for Estimating Greenhouse Gas Emissions - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines

Ano passado 2

(7.6.1) Emissões brutas de Escopo 1 (toneladas métricas de CO2e)

8668461.46

(7.6.2) Data de fim

12/31/2021

(7.6.3) Detalhes metodológicos

Vale's Scope 1 emissions are calculated using the methodology recommended by: - 2006 and 2019 Refinement IPCC Guidelines for National Greenhouse Gas Inventories - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - Environment Canada, Base Metals Smelting/Refining, Guidance Manual for Estimating Greenhouse Gas Emissions - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines
[Linha fixa]

(7.7) Qual foi o total de emissões brutas de Escopo 2 da organização, em toneladas métricas de CO2e?

Ano de reporte

(7.7.1) Escopo global bruto 2, emissões com base na localização (toneladas métricas de CO2e)

621105.09

(7.7.2) Escopo global bruto 2, emissões com base no mercado (toneladas métricas de CO2e) (se aplicável)

328989.01

(7.7.4) Detalhes metodológicos

Vale Scope 2 emissions are calculated using the methodology recommended by: - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines

Ano passado 1

(7.7.1) Escopo global bruto 2, emissões com base na localização (toneladas métricas de CO2e)

622516.13

(7.7.2) Escopo global bruto 2, emissões com base no mercado (toneladas métricas de CO2e) (se aplicável)

342228.31

(7.7.3) Data de fim

12/31/2022

(7.7.4) Detalhes metodológicos

Vale Scope 2 emissions are calculated using the methodology recommended by: - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines

Ano passado 2

(7.7.1) Escopo global bruto 2, emissões com base na localização (toneladas métricas de CO2e)

1151206.06

(7.7.2) Escopo global bruto 2, emissões com base no mercado (toneladas métricas de CO2e) (se aplicável)

318260.97

(7.7.3) Data de fim

12/31/2021

(7.7.4) Detalhes metodológicos

Vale Scope 2 emissions are calculated using the methodology recommended by: - The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) - Brazil GHG Protocol Programme - ISO 14064-1 - NIR GHG Sources & Sinks Canada - Defra Voluntary Reporting Guidelines
[Linha fixa]

(7.8) Explique as emissões globais brutas de Escopo 3 da organização, divulgando e explicando eventuais exclusões.

Bens e serviços adquiridos

(7.8.1) Status da avaliação

Selecione de:

☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

1942957.48

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método da média de dados

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered relevant. It represented 0.4% of Vale's Scope 3 in 2023.

Bens de capital

(7.8.1) Status da avaliação

Selecione de:

☑ Não relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

13348.12

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método da média de dados

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered not relevant or not material due to its representativeness in relation to the total of Scope 3 emissions. It represented 0.003% of Vale's Scope 3 in 2023. As a mining and metallurgical company, downstream emissions are more relevant for Vale than upstream emissions categories, as the products sold are processed or used by other companies in the manufacture of final products. And also due to the high volumes of commodities (products sold), the categories associated with transport and distribution, especially maritime transport, are also relevant.

Atividades relacionadas a combustível e energia (não incluídas no Escopo 1 ou 2)

(7.8.1) Status da avaliação

Selecione de:

☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

1409681.48

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método da média de dados

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered relevant. It represented 0.3% of Vale's Scope 3 in 2023.

Transporte e distribuição upstream

(7.8.1) Status da avaliação

Selecione de:

☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

11422349.69

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método baseado no combustível

☑ Método baseado na distância

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

100

(7.8.5) Explique

This emissions category is considered relevant. It represented 2.5% of Vale's Scope 3 in 2023.

Resíduos gerados nas operações

(7.8.1) Status da avaliação

Selecione de:

☑ Não relevante, explicação fornecida

(7.8.5) Explique

Vale has assessed the materiality of these emission sources in 2009 and again in 2022/2023, regarding 2023 calendar year, and the calculations demonstrated that the emissions from Solid Waste and Wastewater treatment remains not material, representing 0.28% of Scope 1 and 2 emissions in 2023 and 0.01% of Vale's total emissions (Scope 1, 2 and 3). Then, we will not include these emission sources as they are irrelevant to Vale's inventory and to the mining sector.

Viagens de negócios

(7.8.1) Status da avaliação

Selecione de:

☑ Não relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

17556.67

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método baseado na distância

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered not relevant or not material due to its representativeness in relation to the total of Scope 3 emissions. It represented 0.004% of Vale's Scope 3 in 2023. Business travel had a significant decrease since Covid-19 Pandemic.

Deslocamentos diários dos funcionários para/do trabalho

(7.8.1) Status da avaliação

Selecione de:

☑ Não relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

19943.75

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método baseado no combustível

☑ Método baseado na distância

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered not relevant or not material due to its representativeness in relation to the total of Scope 3 emissions. It represented 0.004% of Vale's Scope 3 in 2023. Employee commuting had a significant decrease since Covid-19 Pandemic.

Ativos arrendados upstream

(7.8.1) Status da avaliação

Selecione de:

☑ Não relevante, explicação fornecida

(7.8.5) Explique

This category may cause double counting at Vale’s scope 1 emission due to the type of contract Vale has with the leased assets, because where Vale has operational control all the GHG emissions are accounted.

Transporte e distribuição downstream

(7.8.1) Status da avaliação

Selecione de:

☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

2368321.5

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método baseado no combustível

☑ Método baseado na distância

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

100

(7.8.5) Explique

This emissions category is consideredt relevant. It represented 0.5% of Vale's Scope 3 in 2023.

Processamento de produtos vendidos

(7.8.1) Status da avaliação

Selecione de:

☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

427733438.45

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis

☑ Método da média de dados

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

0

(7.8.5) Explique

This emissions category is considered the most relevant. It represented aproximately 97,8% of Vale's Scope 3 in 2023.

Uso de produtos vendidos

(7.8.1) Status da avaliação

Selecione de:
☑ Não relevante, explicação fornecida

(7.8.5) Explique

Not applicable.

Tratamento de produtos vendidos ao final de sua vida útil

(7.8.1) Status da avaliação

Selecione de:
☑ Não relevante, explicação fornecida

(7.8.5) Explique

Not relevant, not yet calculated. Due to the numerous potential uses of Vale's products, as well as the possibility for recycling, it is not possible to estimate or assume a hypothetical destination for these products in order to estimate end-of-life greenhouse gas emissions. Also, according to the ICMM Scope 3 Emissions Accounting and Reporting Guidance, this category is not relevant for mining sector.

Ativos arrendados downstream

(7.8.1) Status da avaliação

Selecione de:
☑ Não relevante, explicação fornecida

(7.8.5) Explique

Not applicable. Vale does not have any leased assets to account for. Therefore this category is not relevant.

Franquias

(7.8.1) Status da avaliação

Selecione de:
☑ Não relevante, explicação fornecida

(7.8.5) Explique

Not applicable. Vale does not operate any franchises. Therefore this category is not relevant.

Investimentos

(7.8.1) Status da avaliação

Selecione de:
☑ Relevante, calculadas

(7.8.2) Emissões no ano de reporte (toneladas métricas de CO2e)

6273417.39

(7.8.3) Metodologia de cálculo das emissões

Selecione todos os aplicáveis
☑ Método específico do investimento

(7.8.4) Porcentagem de emissões calculada utilizando-se dados obtidos de fornecedores ou parceiros da cadeia de valor

100

(7.8.5) Explique

In 2023, Vale estimated the emissions (scopes 1 2 3) associated with its investments, considering Vale's share (equity share).

Outros (upstream)

(7.8.1) Status da avaliação

Selecione de:
☑ Não avaliada

(7.8.5) Explique

Not applicable.

Outros (downstream)

(7.8.1) Status da avaliação

Selecione de:
☑ Não avaliada

(7.8.5) Explique

Not applicable.
[Linha fixa]

(7.8.1) Divulgue ou reitere os dados de emissões de Escopo 3 para os anos anteriores.

Ano passado 1

(7.8.1.1) Data de fim

12/31/2022

(7.8.1.2) Escopo 3: Bens e serviços adquiridos (toneladas métricas de CO2e)

1526668.33

(7.8.1.3) Escopo 3: Bens de capital (toneladas métricas de CO2e)

10627.02

(7.8.1.4) Escopo 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2) (toneladas métricas de CO2e)

1299068.74

(7.8.1.5) Escopo 3: Transporte e distribuição upstream (toneladas métricas de CO2e)

11278495.66

(7.8.1.7) Escopo 3: Viagens de negócios (toneladas métricas de CO2e)

15365.98

(7.8.1.8) Escopo 3: Deslocamento de funcionários (ida e volta do trabalho) (toneladas métricas de CO2e)

48591.05

(7.8.1.10) Escopo 3: Transporte e distribuição downstream (toneladas métricas de CO2e)

2358664.63

(7.8.1.11) Escopo 3: Processamento de produtos vendidos (toneladas métricas de CO2e)

434868587.83

(7.8.1.16) Escopo 3: Investimentos (toneladas métricas de CO2e)

6231307.85

Ano passado 2

(7.8.1.1) Data de fim

12/31/2021

(7.8.1.2) Escopo 3: Bens e serviços adquiridos (toneladas métricas de CO2e)

1457921.53

(7.8.1.3) Escopo 3: Bens de capital (toneladas métricas de CO2e)

14745.1

(7.8.1.4) Escopo 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2) (toneladas métricas de CO2e)

1473931.05

(7.8.1.5) Escopo 3: Transporte e distribuição upstream (toneladas métricas de CO2e)

11723521.55

(7.8.1.7) Escopo 3: Viagens de negócios (toneladas métricas de CO2e)

6709.55

(7.8.1.8) Escopo 3: Deslocamento de funcionários (ida e volta do trabalho) (toneladas métricas de CO2e)

69289.61

(7.8.1.10) Escopo 3: Transporte e distribuição downstream (toneladas métricas de CO2e)

2405865.66

(7.8.1.11) Escopo 3: Processamento de produtos vendidos (toneladas métricas de CO2e)

447661724.22

(7.8.1.16) Escopo 3: Investimentos (toneladas métricas de CO2e)

5922111.69
[Linha fixa]

(7.9) Indique o status da verificação/garantia que se aplica às emissões relatadas.

	Status da verificação/garantia
Escopo 1	*Selecione de:* ☑ Processo de verificação ou garantia de terceiros em andamento
Escopo 2 (com base na localização ou com base no mercado)	*Selecione de:* ☑ Processo de verificação ou garantia de terceiros em andamento
Escopo 3	*Selecione de:* ☑ Processo de verificação ou garantia de terceiros em andamento

[Linha fixa]

(7.9.1) Forneça mais detalhes sobre a verificação/garantia realizada para as emissões de Escopo 1 e anexe as declarações relevantes.

Row 1

(7.9.1.1) Ciclo de verificação ou garantia em vigor

Selecione de:
☑ Processo anual

(7.9.1.2) Status do ano de reporte atual

Selecione de:
☑ Completo

(7.9.1.3) Tipo de verificação ou garantia

Selecione de:
☑ Garantia limitada

(7.9.1.4) Anexe a declaração

RelatÃ³rio de asseguraÃ§Ã£o assinado +CDP+ RIGEE Vale 2023 EN_Pag 6a8_Evidencia 13.1.1.pdf

(7.9.1.5) Referência de página/seção

Page 6 to 8

(7.9.1.6) Norma relevante

Selecione de:
☑ ISAE3000

(7.9.1.7) Proporção das emissões divulgadas verificadas (%)

100
[Adicionar linha]

(7.9.2) Forneça mais detalhes sobre a verificação/garantia realizada para as emissões de Escopo 2 e anexe as declarações relevantes.

Row 1

(7.9.2.1) Abordagem do Escopo 2

Selecione de:
☑ Escopo 2 com base na localização

(7.9.2.2) Ciclo de verificação ou garantia em vigor

Selecione de:
☑ Processo anual

(7.9.2.3) Status do ano de reporte atual

Selecione de:
☑ Completo

(7.9.2.4) Tipo de verificação ou garantia

Selecione de:
☑ Garantia limitada

(7.9.2.5) Anexe a declaração

RelatÃ³rio de asseguraÃ§Ã£o assinado +CDP+ RIGEE Vale 2023 EN_Pag 6a8_Evidencia 13.1.1.pdf

(7.9.2.6) Referência de página/seção

Pages 6 to 8

(7.9.2.7) Norma relevante

Selecione de:
☑ ISAE3000

(7.9.2.8) Proporção das emissões divulgadas verificadas (%)

100

Row 2

(7.9.2.1) Abordagem do Escopo 2

Selecione de:
☑ Escopo 2 com base no mercado

(7.9.2.2) Ciclo de verificação ou garantia em vigor

Selecione de:
☑ Processo anual

(7.9.2.3) Status do ano de reporte atual

Selecione de:
☑ Completo

(7.9.2.4) Tipo de verificação ou garantia

Selecione de:
☑ Garantia limitada

(7.9.2.5) Anexe a declaração

RelatÃ³rio de asseguraÃ§Ã£o assinado +CDP+ RIGEE Vale 2023 EN_Pag 6a8_Evidencia 13.1.1.pdf

(7.9.2.6) Referência de página/seção

(7.9.2.7) Norma relevante

Selecione de:
☑ ISAE3000

(7.9.2.8) Proporção das emissões divulgadas verificadas (%)

100
[Adicionar linha]

(7.9.3) Forneça mais detalhes sobre a verificação/garantia realizada para as emissões de Escopo 3 e anexe as declarações relevantes.

Row 1

(7.9.3.1) Categoria de Escopo 3

Selecione todos os aplicáveis
☑ Escopo 3: Investimentos
☑ Escopo 3: Bens de capital
☑ Escopo 3: Viagens de negócios
☑ Escopo 3: Uso de produtos vendidos
☑ Escopo 3: Bens e serviços adquiridos
☑ Escopo 3: Transporte e distribuição upstream
☑ Escopo 3: Transporte e distribuição downstream
☑ Escopo 3: Deslocamentos diários dos funcionários para/do trabalho
☑ Escopo 3: Atividades relacionadas a combustível e energia (não incluídas nos Escopos 1 ou 2)

(7.9.3.2) Ciclo de verificação ou garantia em vigor

Selecione de:

☑ Processo anual

(7.9.3.3) Status do ano de reporte atual

Selecione de:
☑ Completo

(7.9.3.4) Tipo de verificação ou garantia

Selecione de:
☑ Garantia limitada

(7.9.3.5) Anexe a declaração

RelatÃ³rio de asseguraÃ§Ã£o assinado +CDP+ RIGEE Vale 2023 EN_Pag 6a8_Evidencia 13.1.1.pdf

(7.9.3.6) Referência de página/seção

Pages 6 to 8

(7.9.3.7) Norma relevante

Selecione de:
☑ ISAE3000

(7.9.3.8) Proporção das emissões divulgadas verificadas (%)

100
[Adicionar linha]

(7.10) Como o total de emissões brutas (Escopos 1 e 2 combinados) do ano de reporte variou em comparação com o do ano de reporte anterior?

Selecione de:

☑ Aumentou

(7.10.1) Identifique os motivos para eventuais variações nas emissões brutas globais (Escopos 1 e 2 combinados) e, para cada uma delas, especifique como as emissões se comparam ao ano anterior.

Variação no consumo de energia renovável

(7.10.1.1) Mudança nas emissões (toneladas métricas de CO2e)

4885.03

(7.10.1.2) Direção da variação nas emissões

Selecione de:
☑ Diminuiu

(7.10.1.3) Valor das emissões (porcentagem)

0.05

(7.10.1.4) Explique os cálculos

There was a very small reduction. GHG Emissions were basically maintained with the strategy of purchasing certificates.

Outras atividades de redução de emissões

(7.10.1.1) Mudança nas emissões (toneladas métricas de CO2e)

137.285

(7.10.1.2) Direção da variação nas emissões

Selecione de:
☑ Diminuiu

(7.10.1.3) Valor das emissões (porcentagem)

1.54

(7.10.1.4) Explique os cálculos

*Other emission reductions initiatives as reported in question 7.55.2 contributed to -1,54 of the change. Calculation: (- 137285/8.894.979,73)*100 -1.54%*

Variação na produção

(7.10.1.1) Mudança nas emissões (toneladas métricas de CO2e)

463065.22

(7.10.1.2) Direção da variação nas emissões

Selecione de:

☑ Aumentou

(7.10.1.3) Valor das emissões (porcentagem)

5.2

(7.10.1.4) Explique os cálculos

*A increase in emissions due to a increase in output (production volumes) contributed to 5,2% of the change in emissions from FY2022 to FY2023. Calculation: (46306522/ 8894979,73)*100 5.2%. Where the emissions increase, are calculated based on the emissions intensity for FY2022. (23.2 kgCO2eq / tMFe-eq) and the difference in production volumes between FY2023 and FY2022 (419.9 - 399.9. 20 Million tons MFe-eq). the asset. Note: The Iron Ore indicator (MFe-eq) represents the sum of production volumes of Vale's main products, such as Pellets, Nickel and Copper, which are converted into tons of Iron Ore equivalent by using an equivalence based on the commodities average price over the years.*

Outros

(7.10.1.1) Mudança nas emissões (toneladas métricas de CO2e)

504973.84

(7.10.1.2) Direção da variação nas emissões

Selecione de:

☑ Aumentou

(7.10.1.3) Valor das emissões (porcentagem)

5.67

(7.10.1.4) Explique os cálculos

The increase in GHG emissions is related to emissions intensity and others such as changes emissions factors and reporting methodologies that are contributing to a decrease.
[Linha fixa]

(7.10.2) Os cálculos de desempenho de emissões de 7.10 e 7.10.1 se baseiam no valor das emissões de Escopo 2 com base na localização ou no valor das emissões de Escopo 2 com base no mercado?

Selecione de:

☑ Com base no mercado

(7.12) As emissões de dióxido de carbono provenientes do carbono biogênico são relevantes para a organização?

Selecione de:

☑ Sim

(7.12.1) Forneça as emissões provenientes de carbono biogênico relevantes para a organização, em toneladas métricas de CO2.

(7.12.1.1) Emissões de CO2 provenientes de carbono biogênico (toneladas métricas de CO2)

375502.18

(7.12.1.2) Explique

The biogenic emissions in 2023 were 31% higher than in 2022 due to the increase in the total area of vegetation cover removed (land-use change). However, this vegetation suppression has been authorized and is subject to restoration.
[Linha fixa]

(7.15) A organização decompõe suas emissões de Escopo 1 por tipo de gás de efeito estufa?

Selecione de:
☑ Sim

(7.15.1) Decomponha as emissões brutas globais totais de Escopo 1 por tipo de gás de efeito estufa e forneça a fonte de cada potencial de aquecimento global (GWP) utilizado.

Row 1

(7.15.1.1) Gás de efeito estufa

Selecione de:
☑ CO2

(7.15.1.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

9041602.46

(7.15.1.3) Referência de GWP

Selecione de:
☑ Quinto Relatório de Avaliação do IPCC (AR5 – 100 anos)

Row 2

(7.15.1.1) Gás de efeito estufa

Selecione de:
☑ CH4

(7.15.1.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

8937.88

(7.15.1.3) Referência de GWP

Selecione de:
☑ Quinto Relatório de Avaliação do IPCC (AR5 – 100 anos)

Row 3

(7.15.1.1) Gás de efeito estufa

Selecione de:
☑ N2O

(7.15.1.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

308226.8

(7.15.1.3) Referência de GWP

Selecione de:
☑ Quinto Relatório de Avaliação do IPCC (AR5 – 100 anos)

Row 4

(7.15.1.1) Gás de efeito estufa

Selecione de:
☑ HFCs

(7.15.1.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

30662.63

(7.15.1.3) Referência de GWP

Selecione de:
☑ Quinto Relatório de Avaliação do IPCC (AR5 – 100 anos)

Row 5

(7.15.1.1) Gás de efeito estufa

Selecione de:
☑ SF6

(7.15.1.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

2350

(7.15.1.3) Referência de GWP

Selecione de:
☑ Quinto Relatório de Avaliação do IPCC (AR5 – 100 anos)
[Adicionar linha]

(7.16) Decomponha as emissões totais brutas de Escopo 1 e 2 por país/área.

Brasil

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

6002872.77

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

281447.98

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Canadá

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

516137.69

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

43086.22

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

43086.22

China

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

0

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

0

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Indonésia

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

2029486.37

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

2826.69

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

2826.69

Japan

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

5802.33

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

6499.36

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

6499.36

Malásia

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

6978.41

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

40624.87

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

29956.78

Omã

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

789931.26

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

239557.35

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

239557.35

Reino Unido da Grã-Bretanha e Irlanda do Norte

(7.16.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

39109.03

(7.16.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

7062.6

(7.16.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

7062.6
[Linha fixa]

(7.17) Indique quais decomposições das emissões brutas de Escopo 1 a empresa pode apresentar.

Selecione todos os aplicáveis

☑ Por divisão de negócios

☑ Por instalação

(7.17.1) Decomponha as emissões brutas globais totais de Escopo 1 por divisão de negócios.

	Divisão de negócios	Emissões de Escopo 1 (toneladas métricas de CO2e)
Row 1	*Ferrous minerals: Iron ore and iron ore pellets*	*4809180.14*
Row 2	*Logistics Infrastructure: Railways and Ports*	*1138898.02*
Row 3	*Base Metals: Nickel, Copper and other products*	*3379112.95*
Row 4	*Others (Aviation, Corporate, Mineral Research and "Reparação Brumadinho")*	*64668.79*

[Adicionar linha]

(7.17.2) Decomponha as emissões brutas globais totais de Escopo 1 por instalação comercial.

Row 1

(7.17.2.1) Instalação

Sudbury Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

293756.94

(7.17.2.3) Latitude

46.480663

(7.17.2.4) Longitude

-81.045879

Row 2

(7.17.2.1) Instalação

Itaguaí's Terminal (CPBS)

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

735.94

(7.17.2.3) Latitude

-22.910695

(7.17.2.4) Longitude

-43.819408

Row 3

(7.17.2.1) Instalação

Mariana Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

127484.66

(7.17.2.3) Latitude

-20.20212

(7.17.2.4) Longitude

-43.445293

Row 4

(7.17.2.1) Instalação

Ferrosos Norte

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

613402.86

(7.17.2.3) Latitude

-6.059807

(7.17.2.4) Longitude

-50.167448

Row 5

(7.17.2.1) Instalação

Corporative Brazil

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

143137.21

(7.17.2.3) Latitude

-22.910169

(7.17.2.4) Longitude

-43.173635

Row 6

(7.17.2.1) Instalação

Água Limpa e Brucutu Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

73183.56

(7.17.2.3) Latitude

-19.86914

(7.17.2.4) Longitude

-43.39307

Row 7

(7.17.2.1) Instalação

New Steel

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

2.27

(7.17.2.3) Latitude

-22.615068

(7.17.2.4) Longitude

-43.309027

Row 8

(7.17.2.1) Instalação

Malaysia Distribution Center (Teluk Rubiah)

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

6978.41

(7.17.2.3) Latitude

4.170708

(7.17.2.4) Longitude

100.619682

Row 9

(7.17.2.1) Instalação

PT Vale Indonesia

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

2029486.37

(7.17.2.3) Latitude

-2.568121

(7.17.2.4) Longitude

121.389641

Row 10

(7.17.2.1) Instalação

Ponta da Madeira Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

366661.05

(7.17.2.3) Latitude

-2.574198

(7.17.2.4) Longitude

-44.342135

Row 11

(7.17.2.1) Instalação

Sossego

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

85973.7

(7.17.2.3) Latitude

-6.433417

(7.17.2.4) Longitude

-50.069884

Row 12

(7.17.2.1) Instalação

Voisey's Bay Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

128440.07

(7.17.2.3) Latitude

56.334705

(7.17.2.4) Longitude

-62.072704

Row 13

(7.17.2.1) Instalação

Clydach Refinery

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

39109.03

(7.17.2.3) Latitude

51.693711

(7.17.2.4) Longitude

-3.889591

Row 14

(7.17.2.1) Instalação

Salobo

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

305560.52

(7.17.2.3) Latitude

-5.794425

(7.17.2.4) Longitude

-50.531521

Row 15

(7.17.2.1) Instalação

Vargem Grande Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

575132.51

(7.17.2.3) Latitude

-20.236804

(7.17.2.4) Longitude

-43.864175

Row 16

(7.17.2.1) Instalação

Ilha de Guaíba's Terminal (TIG)

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

6259.7

(7.17.2.3) Latitude

-23.004488

(7.17.2.4) Longitude

-44.032523

Row 17

(7.17.2.1) Instalação

Port Colborne Refinery

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

11929.36

(7.17.2.3) Latitude

42.879598

(7.17.2.4) Longitude

-79.237737

Row 18

(7.17.2.1) Instalação

Thompson Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

23433.18

(7.17.2.3) Latitude

55.71292

(7.17.2.4) Longitude

-97.836879

Row 19

(7.17.2.1) Instalação

Paraopeba Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

82111.62

(7.17.2.3) Latitude

-20.41899

(7.17.2.4) Longitude

-43.876104

Row 20

(7.17.2.1) Instalação

Tubarão Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

1630025.49

(7.17.2.3) Latitude

-20.262567

(7.17.2.4) Longitude

-40.244273

Row 21

(7.17.2.1) Instalação

Itabira Complex

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

306710.85

(7.17.2.3) Latitude

-19.593315

(7.17.2.4) Longitude

-43.221606

Row 22

(7.17.2.1) Instalação

Long Harbour Operations

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

18672.23

(7.17.2.3) Latitude

47.418623

(7.17.2.4) Longitude

-53.792404

Row 23

(7.17.2.1) Instalação

Onça Puma

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

396640.62

(7.17.2.3) Latitude

-6.542229

(7.17.2.4) Longitude

-51.114634

Row 24

(7.17.2.1) Instalação

Matsuzaka Refinery

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

5802.33

(7.17.2.3) Latitude

34.604467

(7.17.2.4) Longitude

136.549806

Row 25

(7.17.2.1) Instalação

Simões Filho’s Ferroalloy Plant

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

858.93

(7.17.2.3) Latitude

-12.787931

(7.17.2.4) Longitude

-38.412447

Row 26

(7.17.2.1) Instalação

Serra Sul - S11D

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

222878.39

(7.17.2.3) Latitude

-6.411224

(7.17.2.4) Longitude

-50.341333

Row 27

(7.17.2.1) Instalação

Vitória to Minas Railway (EFVM)

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

323244.03

(7.17.2.3) Latitude

-20.27682

(7.17.2.4) Longitude

-40.246181

Row 28

(7.17.2.1) Instalação

Carajás Railway (EFC)

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

784316.79

(7.17.2.3) Latitude

-2.56835

(7.17.2.4) Longitude

-44.346151

Row 29

(7.17.2.1) Instalação

Oman Operations

(7.17.2.2) Emissões de Escopo 1 (toneladas métricas de CO2e)

789931.26

(7.17.2.3) Latitude

24.511622

(7.17.2.4) Longitude

56.598384
[Adicionar linha]

(7.19) Decomponha o total de emissões brutas de Escopo 1 da organização por atividade de produção do setor em toneladas métricas de CO2e.

	Emissões brutas de Escopo 1, toneladas métricas de CO2e	Explique
Atividades de produção de metais e mineração	*8188293.09*	*Emissions not included: Logistic services, Corporate (offices and Mineral Research activities, Projects and Brumadinho Reparation).*

[Linha fixa]

(7.20) Indique quais decomposições de emissões brutas de Escopo 2 a empresa pode apresentar.

Selecione todos os aplicáveis
☑ Por divisão de negócios
☑ Por instalação

(7.20.1) Decomponha as emissões brutas globais totais de Escopo 2 por divisão de negócios.

	Divisão de negócios	Escopo 2, com base na localização (toneladas métricas de CO2e)	Escopo 2, com base no mercado (toneladas métricas de CO2e)
Row 1	*Ferrous minerals: Iron ore and iron ore pellets*	*418441.54*	*239557.35*
Row 2	*Base Metals: Nickel, Copper and other products*	*140049.78*	*59474.88*
Row 4	*Logistics Infrastructure: Railways and Ports*	*62242.23*	*29956.78*
Row 5	*Others (Aviation, Corporate, Energy - Biopalma, Mineral Research and "Reparação Brumadinho")*	*371.54*	*0*

[Adicionar linha]

(7.20.2) Decomponha as emissões brutas globais totais de Escopo 2 por instalação comercial.

Row 1

(7.20.2.1) Instalação

Água Limpa e Brucutu Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

13800.18

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 2

(7.20.2.1) Instalação

Tubarão Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

47226.22

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 3

(7.20.2.1) Instalação

Ferrosos Norte

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

19961.77

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 4

(7.20.2.1) Instalação

Thompson Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

486.87

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

486.87

Row 5

(7.20.2.1) Instalação

Sudbury Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

37641.61

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

37641.61

Row 6

(7.20.2.1) Instalação

Matsuzaka Refinery

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

6499.36

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

6499.36

Row 7

(7.20.2.1) Instalação

Sossego

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

13066.34

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 8

(7.20.2.1) Instalação

Serra Sul - S11D

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

11677

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 9

(7.20.2.1) Instalação

Itabira Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

47493.35

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 10

(7.20.2.1) Instalação

Ilha de Guaíba's Terminal (TIG)

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

1332.37

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 11

(7.20.2.1) Instalação

Salobo

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

45018.98

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 12

(7.20.2.1) Instalação

Carajás Railway (EFC)

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

386.34

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 13

(7.20.2.1) Instalação

Malaysia Distribution Center (Teluk Rubiah)

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

40624.87

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

29956.78

Row 14

(7.20.2.1) Instalação

Paraopeba Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

5377.63

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 15

(7.20.2.1) Instalação

Ponta da Madeira Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

14884.85

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 16

(7.20.2.1) Instalação

New Steel

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

14.33

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 17

(7.20.2.1) Instalação

PT Vale Indonesia

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

2826.69

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

2826.69

Row 18

(7.20.2.1) Instalação

Simões Filho’s Ferroalloy Plant

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

96.6

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 19

(7.20.2.1) Instalação

Clydach Refinery

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

7062.6

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

7062.6

Row 20

(7.20.2.1) Instalação

Voisey's Bay Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

0

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 21

(7.20.2.1) Instalação

Mariana Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

6481.32

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 22

(7.20.2.1) Instalação

Corporative Brazil

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

371.54

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 23

(7.20.2.1) Instalação

Onça Puma

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

22375.22

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 25

(7.20.2.1) Instalação

Long Harbour Operations

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

4223.08

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

4223.08

Row 26

(7.20.2.1) Instalação

Oman Operations

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

239557.35

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

239557.35

Row 27

(7.20.2.1) Instalação

Vitória to Minas Railway (EFVM)

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

863.31

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 28

(7.20.2.1) Instalação

Vargem Grande Complex

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

30281.67

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 29

(7.20.2.1) Instalação

Itaguaí's Terminal (CPBS)

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

738.87

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

Row 30

(7.20.2.1) Instalação

Port Colborne Refinery

(7.20.2.2) Escopo 2, com base na localização (toneladas métricas de CO2e)

734.66

(7.20.2.3) Escopo 2, com base no mercado (toneladas métricas de CO2e)

734.66
[Adicionar linha]

(7.21) Decomponha o total de emissões brutas de Escopo 2 da organização por atividade de produção do setor em toneladas métricas de CO2e.

	Escopo 2, com base na localização, toneladas métricas de CO2e	Escopo 2, com base no mercado (se aplicável), toneladas métricas de CO2e	Explique
Atividades de produção de metais e mineração	*558491.32*	*299032.23*	*Emissions not included: Logistic services. Corporate (offices and Mineral Research activities. Projects and Brumadinho Reparation).*

[Linha fixa]

(7.22) Decomponha suas emissões brutas de Escopo 1 e Escopo 2 entre seu grupo de contabilidade consolidada e outras entidades incluídas na sua resposta.

Grupo de contabilidade consolidada

(7.22.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

9391859.89

(7.22.2) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

621105.09

(7.22.3) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

328989.01

(7.22.4) Explique

Reporting data for Vale S.A the Consolidated accounting group

Todas as outras entidades

(7.22.1) Emissões de Escopo 1 (toneladas métricas de CO2e)

0

(7.22.2) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

0

(7.22.3) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

(7.22.4) Explique

Not applicable.
[Linha fixa]

(7.23) A organização é capaz de decompor seus dados de emissões para alguma das subsidiárias incluídas na resposta ao CDP?

Selecione de:
☑ Sim

(7.23.1) Decomponha as emissões brutas de Escopos 1 e 2 da organização por subsidiária.

Row 1

(7.23.1.1) Nome da subsidiária

Vale Japan Ltd.

(7.23.1.2) Atividade principal

Selecione de:
☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique :Commercial Number

(7.23.1.11) Outro identificador único

Commercial No.: 0104-01-074848

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

5802.33

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

6499.36

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

6499.36

(7.23.1.15) Explique

Emissions from Vale Japan

Row 2

(7.23.1.1) Nome da subsidiária

Vale Canada Ltd

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Number

(7.23.1.11) Outro identificador único

Corporate No.: 956267-2

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

329119.47

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

38863.14

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

38863.14

(7.23.1.15) Explique

Emissions from Ontario and Manitoba Operations combined.

Row 3

(7.23.1.1) Nome da subsidiária

Vale Newfoundland & Labrador Ltd.

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique :Corporate Number

(7.23.1.11) Outro identificador único

Corporate No.: 35013-95

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

147112.3

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

4223.08

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

4223.08

(7.23.1.15) Explique

Emissions from Long Harbour and Voiseys Bay

Row 4

(7.23.1.1) Nome da subsidiária

Salobo Metais S.A

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Taxpayer Identification Number

(7.23.1.11) Outro identificador único

CNPJ: 33.931.478/0001-94

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

305560.52

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

45018.98

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

0.0

(7.23.1.15) Explique

Emissions from Salobo

Row 5

(7.23.1.1) Nome da subsidiária

PT Vale Indonesia Tbk

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Registration Number

(7.23.1.11) Outro identificador único

Corporate Registration number: 8120005782069

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

2029486.37

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

2826.69

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

2826.69

(7.23.1.15) Explique

Emissions from PTVI

Row 6

(7.23.1.1) Nome da subsidiária

Mineração Onça Puma S.A

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Taxpayer Identification Number

(7.23.1.11) Outro identificador único

CNPJ: 48.256.824/0001-53

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

396640.62

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

22375.22

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

0.0

(7.23.1.15) Explique

Emissions from Onça Puma Complex.

Row 7

(7.23.1.1) Nome da subsidiária

Companhia Portuaria Baia de Sepetiba

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte ao transporte

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Taxpayer Identification Number

(7.23.1.11) Outro identificador único

CNPJ: 72.372.998/0001-66

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

735.94

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

738.877

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

0.0

(7.23.1.15) Explique

Emissions from CPBS.

Row 8

(7.23.1.1) Nome da subsidiária

Vale Malaysia Minerals Sdn. Bhd.

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte ao transporte

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Number

(7.23.1.11) Outro identificador único

Corporate No.:20091020331 (863428-M)

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

6978.41

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

40624.87

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

29956.78

(7.23.1.15) Explique

Emissions from Malasya Port

Row 9

(7.23.1.1) Nome da subsidiária

Vale Oman Pelletizing Company LLC

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Commercial Number

(7.23.1.11) Outro identificador único

Commercial No.: 1066208

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

789931.26

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

239557.35

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

239557.35

(7.23.1.15) Explique

Emissions from Oman

Row 10

(7.23.1.1) Nome da subsidiária

VALE S.A.

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis

☑ Outro identificador único, especifique **:**Corporate Taxpayer Identification Number

(7.23.1.11) Outro identificador único

CNPJ: 33.592.510/0001-54

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

9391859.89

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

621105.09

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

328989.01

(7.23.1.15) Explique

Total emissions reported for VALE.

Row 11

(7.23.1.1) Nome da subsidiária

Vale Manganês S.A

(7.23.1.2) Atividade principal

Selecione de:

☑ Serviços de suporte à mineração e metais

(7.23.1.3) Selecione o identificador único que é possível indicar para esta subsidiária

Selecione todos os aplicáveis
☑ Outro identificador único, especifique :Corporate Taxpayer Identification Number

(7.23.1.11) Outro identificador único

CNPJ: 15.144.306/0001-99

(7.23.1.12) Emissões de Escopo 1 (toneladas métricas de CO2e)

858.93

(7.23.1.13) Emissões de Escopo 2, com base na localização (toneladas métricas de CO2e)

96.6

(7.23.1.14) Emissões de Escopo 2, com base no mercado (toneladas métricas de CO2e)

0

(7.23.1.15) Explique

Remaining emissions from Simões Filho operation
[Adicionar linha]

(7.26) Aloque as emissões da empresa para os clientes listados abaixo, de acordo com os bens e serviços que a organização vendeu para eles neste período de reporte.

Row 1

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 1

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

958

(7.26.9) Emissões em toneladas métricas de CO2e

13105

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For ferronickel product: Combustion fuel and reductant to the RKEF process, mobile equipment fuels. For nickel rounds: mobile fuel and stationary fuel combustion for mining activities, stationary combustion for steam generation, and process and reagent emissions.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 2

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 1

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

113840

(7.26.9) Emissões em toneladas métricas de CO2e

11.194

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For nickel rounds: Process emissions, combustion fuel in stationary equipment and in mobile equipment in mining operations, shipping emissions.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 3

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 2: com base no mercado

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

958

(7.26.9) Emissões em toneladas métricas de CO2e

112

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For ferronickel product: Scope 2 emissions are from a relatively low-carbon Canadian electricity as electricity consumption in Brazil operations is negated through renewable PPAs.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 4

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 2: com base no mercado

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

113840

(7.26.9) Emissões em toneladas métricas de CO2e

0

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For Iron Ore Pellet: Scope 2 emissions are from a relatively low-carbon Canadian electricity as electricity consumption in Brazil operations is negated through renewable PPAs.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 5

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 3

(7.26.3) Categoria(s) do Escopo 3

Selecione todos os aplicáveis

☑ Categoria 1: Bens e serviços adquiridos

☑ Categoria 2: Bens de capital

☑ Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2)

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

958

(7.26.9) Emissões em toneladas métricas de CO2e

4784

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Base metals: Scope 3 emissions are largely attributed to upstream fuel production (e.g., diesel, natural gas), as well as process reagent production (e.g., lime).

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 6

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 3

(7.26.3) Categoria(s) do Escopo 3

Selecione todos os aplicáveis

☑ Categoria 1: Bens e serviços adquiridos

☑ Categoria 2: Bens de capital

☑ Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2)

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

113840

(7.26.9) Emissões em toneladas métricas de CO2e

2404

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For Iron Ore Pellet: Scope 3 emissions are largely attributed to upstream production of fuels (e.g., anthracite, natural gas), process additives (e.g., lime) and other materials (e.g. mill balls), as well as transportation of products.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that

was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 7

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 1

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Outra unidade, especifique **:**Troy Ounces of Platinum Equivalent

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

14.5

(7.26.9) Emissões em toneladas métricas de CO2e

3.5

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Not applicable

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that

was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 8

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 2: com base no mercado

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base no volume dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Outra unidade, especifique **:**Troy Ounces of Platinum Equivalent

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

14.5

(7.26.9) Emissões em toneladas métricas de CO2e

0.3

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Scope 2 emissions are from a relatively low-carbon Canadian electricity.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that

was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 9

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 3

(7.26.3) Categoria(s) do Escopo 3

Selecione todos os aplicáveis

☑ Categoria 1: Bens e serviços adquiridos

☑ Categoria 2: Bens de capital

☑ Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2)

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Outra unidade, especifique :Troy Ounces of Platinum Equivalent

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

14.5

(7.26.9) Emissões em toneladas métricas de CO2e

2

(7.26.10) Incerteza (±%)

15

(7.26.11) Principais fontes de emissões

Scope 3 emissions are largely attributed to upstream fuel production (e.g., diesel, natural gas), as well as process reagent production (e.g., lime).

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 10

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 1

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

70

(7.26.9) Emissões em toneladas métricas de CO2e

238

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Process combustion (thermal) fuel, mobile fuels for mining, and process reagents.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

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Row 11

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 2: com base no mercado

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

70

(7.26.9) Emissões em toneladas métricas de CO2e

21

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Scope 2 emissions are from a relatively low-carbon Canadian electricity.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to

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Row 12

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 3

(7.26.3) Categoria(s) do Escopo 3

Selecione todos os aplicáveis

☑ Categoria 1: Bens e serviços adquiridos

☑ Categoria 2: Bens de capital

☑ Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2)

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

70

(7.26.9) Emissões em toneladas métricas de CO2e

112

(7.26.10) Incerteza (±%)

15

(7.26.11) Principais fontes de emissões

Scope 3 emissions are largely attributed to upstream fuel production (e.g., diesel, natural gas), as well as process reagent production (e.g., lime).

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e

emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 13

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:
☑ Escopo 1

(7.26.4) Nível de alocação

Selecione de:
☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:
☑ Alocação com base no volume dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

31

(7.26.9) Emissões em toneladas métricas de CO2e

144

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

For nickel rounds: mobile fuel and stationary fuel combustion for mining activities, stationary combustion for steam generation, and process and reagent emissions. For nickel pellets: Process combustion (thermal) fuel, mobile fuels for mining, and process reagents.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e

emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

A vast collection of secondary data sources is referred to for emissions factors, as required, to estimate emissions for subsequent allocation to products. The exact sources used depend greatly on the process used, and the flow of material through a variety of facilities, which can be variable. A non-exhaustive list of references to highlight key sources of published information include: - IPCC Guidelines for National Greenhouse Gas Inventories - International Energy Agency (IEA) Emissions Factors Dataset - Canada National Inventory Report - Brazil Ministry of Science, Technology, and Innovation (MSTI) SIN Emission Factors The only information that was used to allocate emissions and that is not published by Vale is the volume sold by customer. This information was collected from each sales department to enable the allocation of emissions to the customer.

Row 14

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:
☑ Escopo 2: com base no mercado

(7.26.4) Nível de alocação

Selecione de:
☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:
☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

31

(7.26.9) Emissões em toneladas métricas de CO2e

8

(7.26.10) Incerteza (±%)

5

(7.26.11) Principais fontes de emissões

Scope 2 emissions are from a relatively low-carbon Canadian electricity.

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

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Row 15

(7.26.1) Membro solicitante

Selecione de:

(7.26.2) Escopo das emissões

Selecione de:

☑ Escopo 3

(7.26.3) Categoria(s) do Escopo 3

Selecione todos os aplicáveis

☑ Categoria 1: Bens e serviços adquiridos

☑ Categoria 2: Bens de capital

☑ Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 ou 2)

(7.26.4) Nível de alocação

Selecione de:

☑ Instalação

(7.26.5) Detalhes do nível de alocação

Contributing emissions are tracked at the facility level to accurately reflect attribution to final products as they travel through multiple facilities.

(7.26.6) Método de alocação

Selecione de:

☑ Alocação com base na massa dos produtos adquiridos

(7.26.7) Unidade do valor de mercado ou da quantidade de bens/serviços fornecidos

Selecione de:

☑ Toneladas métricas

(7.26.8) Valor de mercado ou quantidade de bens/serviços fornecidos ao membro solicitante

31

(7.26.9) Emissões em toneladas métricas de CO2e

112

(7.26.10) Incerteza (±%)

15

(7.26.11) Principais fontes de emissões

Scope 3 emissions are largely attributed to upstream fuel production (e.g., diesel, natural gas), as well as process reagent production (e.g., lime).

(7.26.12) Alocação verificada por um terceiro?

Selecione de:

☑ Sim

(7.26.13) Explique como foi identificada a fonte de GEEs, incluindo as principais limitações a este processo e as suposições adotadas

• Process and utility consumption that relate to GHG emissions are tracked at the site level (e.g., fuel, electricity, explosives, process reagents). The corresponding data are input to Vale's software by nominated site contributors on a monthly basis. • The data is then approved and locked by Vale's Climate Change Team. • The software is configured with emissions factors relevant to each of the inputs, including but not limited to: regional electricity generation, fuel combustion for a variety of fuel blends. The emissions factors are collected and reviewed from reputable sources such as IPCC, IEA, Governmental Publications. • Consumption quantities and emissions factors are combined to calculate the GHG emissions at the asset level. For example: fuel consumption at site in litres x emission factor of tonnes CO2e emitted per litre of fuel. • Results are consolidated into annual inventories which receive third party assurance and are suited to adhere to public reporting such as Vale Integrated Reports, Climate Change Reports, GRI, SASB, TCFD, etc.

(7.26.14) No caso de terem sido usadas informações publicadas, forneça uma referência

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[Adicionar linha]

(7.27) Quais os desafios de alocar emissões para diferentes clientes e o que ajudaria a vencer esses desafios?

Row 1

(7.27.1) Desafios de alocação

Selecione de:

☑ Outro, especifique **:**Diversity of intermediate and final products and mines of origin

(7.27.2) Explique o que ajudaria a superar esses desafios

The main challenges are to track the great diversity of intermediate products and the possibilities of blends to produce Vale's final products, in addition to the multiplicity of operations (mine, railway and ports) and the possibility of exchanging / mixing products from different Vale systems. This could be resolved by automatizing the carbon footprints within production systems. In 2022, we progressed in measuring the carbon footprints of Vale's products. The quantification and reporting of products' carbon footprints are based on the ISO 14067 Carbon Footprint of Products and Product Lifecycle Accounting and Reporting Standard of the GHG Protocol. The cradle-to-gate approach was used, covering emissions generated from mineral extraction, processing and internal transport, pelletizing (where applicable), as well as emissions from the production of inputs (Scope 3 Upstream). • Carbon footprints have been calculated and verified by third parties for 100% of our Class 1 nickel products, and for 75% of nickel, copper and cobalt products; • 40% of the volume of ferrous products sold in 2021 have carbon footprints

calculated, of which approximately 35% have had their footprints verified by a third party. It is expected that we will have 70% of products covered and verified by the end of 2023.
[Adicionar linha]

(7.28) A organização planeja desenvolver suas capacidades para alocar emissões para seus clientes no futuro?

(7.28.1) A organização planeja desenvolver suas capacidades para alocar emissões para seus clientes no futuro?

Selecione de:
☑ Sim

(7.28.2) Descreva como a organização planeja desenvolver suas capacidades

We are developing solutions that involve improving data collection technologies and implementing emissions measurement software and life cycle databases to estimate, measure and allocate emissions across our value chain. By leveraging these technologies, software, and databases, we aim to develop our capabilities to allocate emissions to our customers. This will support the companies across our value chain in achieving their greenhouse gas (GHG) emissions goals, fostering greater transparency and collaboration in our collective efforts to reduce environmental impact.
[Linha fixa]

(7.29) Durante o ano de reporte, qual porcentagem do total de gastos operacionais corresponde aos gastos com energia?

Selecione de:
☑ Superior a 5%, mas inferior ou igual a 10%

(7.30) Selecione quais atividades relacionadas à energia foram realizadas pela organização.

	Indique se a organização realizou esta atividade relacionada à energia no ano de reporte
Consumo de combustível (exceto matérias-primas)	*Selecione de:* ☑ Sim
Consumo de eletricidade comprada ou adquirida	*Selecione de:* ☑ Sim
Consumo de aquecimento comprado ou adquirido	*Selecione de:* ☑ Não
Consumo de vapor comprado ou adquirido	*Selecione de:* ☑ Não
Consumo de resfriamento comprado ou adquirido	*Selecione de:* ☑ Não
Geração de eletricidade, aquecimento, vapor ou refrigeração	*Selecione de:* ☑ Sim

[Linha fixa]

(7.30.1) Divulgue os consumos totais de energia (exceto matérias-primas) da organização em MWh.

Consumo de combustível (exceto matérias-primas)

(7.30.1.1) Poder calorífico

Selecione de:

☑ LHV (menor poder calorífico)

(7.30.1.2) MWh de fontes renováveis

1399937.22

(7.30.1.3) MWh de fontes não renováveis

26984076.66

(7.30.1.4) Total (renováveis e não renováveis) em MWh

28384013.88

Consumo de eletricidade comprada ou adquirida

(7.30.1.1) Poder calorífico

Selecione de:
☑ Não é possível confirmar o poder calorífico

(7.30.1.2) MWh de fontes renováveis

8457888.92

(7.30.1.3) MWh de fontes não renováveis

1444058.65

(7.30.1.4) Total (renováveis e não renováveis) em MWh

9901947.57

Consumo de energia renovável não combustível autogerada

(7.30.1.1) Poder calorífico

Selecione de:
☑ Não é possível confirmar o poder calorífico

(7.30.1.2) MWh de fontes renováveis

2630049.68

(7.30.1.4) Total (renováveis e não renováveis) em MWh

2630049.68

Consumo total de energia

(7.30.1.1) Poder calorífico

Selecione de:
☑ Não é possível confirmar o poder calorífico

(7.30.1.2) MWh de fontes renováveis

12487875.82

(7.30.1.3) MWh de fontes não renováveis

28428135.31

(7.30.1.4) Total (renováveis e não renováveis) em MWh

40916011.14
[Linha fixa]

(7.30.4) Divulgue os totais de consumo de energia (exceto matérias-primas) pela organização para as atividades de produção de metais e mineração em MWh.

	Poder calorífico	MWh totais
Consumo de combustível (exceto matérias-primas)	*Selecione de:* ☑ LHV (menor poder calorífico)	*23570248.52*
Consumo de eletricidade comprada ou adquirida	*Selecione de:* ☑ Não é possível confirmar o poder calorífico	*9261993.23*
Consumo de energia renovável não combustível autogerada	*Selecione de:* ☑ Não é possível confirmar o poder calorífico	*2630049.68*
Consumo total de energia	*Selecione de:* ☑ Não é possível confirmar o poder calorífico	*35462291.43*

[Linha fixa]

(7.30.6) Selecione as aplicações de consumo de combustível da organização.

	Indique se a organização adota esta aplicação de combustível
Consumo de combustível para a geração de eletricidade	*Selecione de:* ☑ Sim
Consumo de combustível para a geração de aquecimento	*Selecione de:* ☑ Sim
Consumo de combustível para geração de vapor	*Selecione de:* ☑ Sim

	Indique se a organização adota esta aplicação de combustível
Consumo de combustível para a geração de refrigeração	*Selecione de:* ☑ Não
Consumo de combustível para cogeração ou trigeração	*Selecione de:* ☑ Não

[Linha fixa]

(7.30.7) Informe a quantidade de combustível em MWh que a organização consumiu (exceto matérias-primas) por tipo de combustível.

Biomassa sustentável

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

43500.3

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

0

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

43500.3

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

0

(7.30.7.8) Explique

Not applicable.

Outro tipo de biomassa

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

67.11

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

0

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

67.11

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

0

(7.30.7.8) Explique

Biomass: Charcoal

Outros combustíveis renováveis (por ex., hidrogênio renovável)

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

1371841.93

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

6424.59

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

1364605.33

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

812.01

(7.30.7.8) Explique

Renewable fuels: Biodiesel and Biogasoline

Carvão

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

6161804.28

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

0

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

6161804.28

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

0

(7.30.7.8) Explique

Types of coal: Anthracite Coal. Bituminous Coal. Coal. Lignite Coal and Subbituminous Coal

Petróleo

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

3447218.07

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

0

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

3440451.7

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

6766.37

(7.30.7.8) Explique

Types of oil: Light Distillate. Residual Fuel Oil - Óleo Combustível Brasil and Residual Fuel Oil

Gás

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

6665683.75

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

0

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

6624738.75

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

40944.99

(7.30.7.8) Explique

Gases: Liquefied Petroleum Gas (LPG). Natural Gas and Propane Gas

Outros combustíveis não renováveis (por ex., hidrogênio não renovável)

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

10318691.86

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

440060.87

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

9772806.3

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

105824.69

(7.30.7.8) Explique

Fuels: Diesel. Jet Kerosene. Kerosene Motor Gasoline. Coke. Petroleum Coke and Marine Fuel.

Total de combustíveis

(7.30.7.1) Poder calorífico

Selecione de:
☑ LHV

(7.30.7.2) Total de combustível em MWh consumido pela organização

28008807.3

(7.30.7.3) Combustível consumido, em MWh, para a autogeração de eletricidade

446485.46

(7.30.7.4) Combustível MWh consumido para a autogeração de calor

27407973.77

(7.30.7.5) Combustível consumido, em MWh, para a autogeração de vapor

154348.07

(7.30.7.8) Explique

Not applicable.
[Linha fixa]

(7.30.9) Dê detalhes sobre a eletricidade, o aquecimento, o vapor e a refrigeração que a organização gerou e consumiu no ano de reporte.

Eletricidade

(7.30.9.1) Geração bruta total (MWh)

3076535.14

(7.30.9.2) Geração consumida pela organização (MWh)

3076535.14

(7.30.9.3) Geração bruta proveniente de fontes renováveis (MWh)

2630049.68

(7.30.9.4) Geração proveniente de fontes renováveis consumida pela organização (MWh)

2630049.68

Aquecimento

(7.30.9.1) Geração bruta total (MWh)

0

(7.30.9.2) Geração consumida pela organização (MWh)

0

(7.30.9.3) Geração bruta proveniente de fontes renováveis (MWh)

0

(7.30.9.4) Geração proveniente de fontes renováveis consumida pela organização (MWh)

0

Vapor

(7.30.9.1) Geração bruta total (MWh)

0

(7.30.9.2) Geração consumida pela organização (MWh)

0

(7.30.9.3) Geração bruta proveniente de fontes renováveis (MWh)

0

(7.30.9.4) Geração proveniente de fontes renováveis consumida pela organização (MWh)

0

Refrigeração

(7.30.9.1) Geração bruta total (MWh)

0

(7.30.9.2) Geração consumida pela organização (MWh)

0

(7.30.9.3) Geração bruta proveniente de fontes renováveis (MWh)

0

(7.30.9.4) Geração proveniente de fontes renováveis consumida pela organização (MWh)

0
[Linha fixa]

(7.30.12) Forneça detalhes sobre a eletricidade, o aquecimento, o vapor e a refrigeração que a organização gerou e consumiu para atividades de produção de metais e mineração.

	Geração bruta total (MWh) dentro do limite do setor de metais e mineração	Geração consumida (MWh) dentro do limite do setor de metais e mineração
Eletricidade	*414492.29*	*414492.29*
Aquecimento	*0*	*0*
Vapor	*0*	*0*
Refrigeração	*0*	*0*

[Linha fixa]

(7.30.14) Forneça detalhes sobre as quantidades de eletricidade, aquecimento, vapor e/ou refrigeração contabilizadas a um fator de emissão zero ou próximo de zero no valor de Escopo 2 com base no mercado reportado em 7.7.

Row 1

(7.30.14.1) País/área

Selecione de:
☑ Brasil

(7.30.14.2) Método de aquisição

Selecione de:
☑ Contrato de compra de energia físico (PPA físico) com um gerador conectado à rede

(7.30.14.3) Portador de energia

Selecione de:
☑ Eletricidade

(7.30.14.4) Tipo de tecnologia de baixo carbono

Selecione de:
☑ Hidrelétrica de grande porte (> 25 MW)

(7.30.14.5) Energia de baixo carbono consumida por meio de métodos de obtenção selecionados no ano de reporte (MWh)

5661560.02

(7.30.14.6) Instrumento de monitoramento utilizado

Selecione de:
☑ Contrato

(7.30.14.7) País/área de origem (geração) da energia de baixo carbono ou do atributo energético

Selecione de:

☑ Brasil

(7.30.14.8) É possível reportar o ano de comissionamento ou de realimentação da unidade de geração de energia?

Selecione de:

☑ Não

(7.30.14.10) Explique

UHEs: Estreito Candonga Machadinho IGARAPAVA PORTO ESTRELA FUNIL AIMORES CANDONGA CAPIM BRANCO I CAPIM BRANCO II Belo Monte

Row 2

(7.30.14.1) País/área

Selecione de:

☑ Brasil

(7.30.14.2) Método de aquisição

Selecione de:

☑ Contrato de compra de energia físico (PPA físico) com um gerador conectado à rede

(7.30.14.3) Portador de energia

Selecione de:

☑ Eletricidade

(7.30.14.4) Tipo de tecnologia de baixo carbono

Selecione de:

☑ Eólica

(7.30.14.5) Energia de baixo carbono consumida por meio de métodos de obtenção selecionados no ano de reporte (MWh)

302397.51

(7.30.14.6) Instrumento de monitoramento utilizado

Selecione de:
☑ Contrato

(7.30.14.7) País/área de origem (geração) da energia de baixo carbono ou do atributo energético

Selecione de:
☑ Brasil

(7.30.14.8) É possível reportar o ano de comissionamento ou de realimentação da unidade de geração de energia?

Selecione de:
☑ Não

(7.30.14.10) Explique

EOL GARROTE EOL SAO RAIMUNDO SANTO INACIO III SANTO INACIO IV

Row 3

(7.30.14.1) País/área

Selecione de:
☑ Brasil

(7.30.14.2) Método de aquisição

Selecione de:
☑ Aquisição dissociada de certificados de atributos de energia (CAEs)

(7.30.14.3) Portador de energia

Selecione de:
☑ Eletricidade

(7.30.14.4) Tipo de tecnologia de baixo carbono

Selecione de:
☑ Hidrelétrica de grande porte (> 25 MW)

(7.30.14.5) Energia de baixo carbono consumida por meio de métodos de obtenção selecionados no ano de reporte (MWh)

450000

(7.30.14.6) Instrumento de monitoramento utilizado

Selecione de:
☑ I-REC

(7.30.14.7) País/área de origem (geração) da energia de baixo carbono ou do atributo energético

Selecione de:
☑ Brasil

(7.30.14.8) É possível reportar o ano de comissionamento ou de realimentação da unidade de geração de energia?

Selecione de:
☑ Não

(7.30.14.10) Explique

FURNAS CENTRAIS ELÉTRICAS S. A.

Row 4

(7.30.14.1) País/área

Selecione de:

☑ Malásia

(7.30.14.2) Método de aquisição

Selecione de:

☑ Aquisição dissociada de certificados de atributos de energia (CAEs)

(7.30.14.3) Portador de energia

Selecione de:

☑ Eletricidade

(7.30.14.4) Tipo de tecnologia de baixo carbono

Selecione de:

☑ Hidrelétrica (capacidade desconhecida)

(7.30.14.5) Energia de baixo carbono consumida por meio de métodos de obtenção selecionados no ano de reporte (MWh)

12034.98

(7.30.14.6) Instrumento de monitoramento utilizado

Selecione de:

☑ I-REC

(7.30.14.7) País/área de origem (geração) da energia de baixo carbono ou do atributo energético

Selecione de:

☑ Malásia

(7.30.14.8) É possível reportar o ano de comissionamento ou de realimentação da unidade de geração de energia?

Selecione de:
☑ Sim

(7.30.14.9) Ano de comissionamento da instalação de geração de energia (por ex., data da primeira operação comercial ou da repotenciação)

2009

(7.30.14.10) Explique

Stesen Janaelektrik Kenyir

Row 5

(7.30.14.1) País/área

Selecione de:
☑ Malásia

(7.30.14.2) Método de aquisição

Selecione de:
☑ Aquisição dissociada de certificados de atributos de energia (CAEs)

(7.30.14.3) Portador de energia

Selecione de:
☑ Eletricidade

(7.30.14.4) Tipo de tecnologia de baixo carbono

Selecione de:
☑ Solar

(7.30.14.5) Energia de baixo carbono consumida por meio de métodos de obtenção selecionados no ano de reporte (MWh)

5157.85

(7.30.14.6) Instrumento de monitoramento utilizado

Selecione de:
☑ I-REC

(7.30.14.7) País/área de origem (geração) da energia de baixo carbono ou do atributo energético

Selecione de:
☑ Malásia

(7.30.14.8) É possível reportar o ano de comissionamento ou de realimentação da unidade de geração de energia?

Selecione de:
☑ Sim

(7.30.14.9) Ano de comissionamento da instalação de geração de energia (por ex., data da primeira operação comercial ou da repotenciação)

2022

(7.30.14.10) Explique

BGMC BRAS Power Sdn. Bhd.
[Adicionar linha]

(7.30.16) Apresente uma decomposição do seu consumo de eletricidade/aquecimento/vapor/refrigeração por país/área no ano de reporte.

Brasil

(7.30.16.1) Consumo de eletricidade comprada (MWh)

7310337.46

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

18728.98

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

7329066.44

Canadá

(7.30.16.1) Consumo de eletricidade comprada (MWh)

1867352

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

153292

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

2020644.00

China

(7.30.16.1) Consumo de eletricidade comprada (MWh)

0

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

0

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

0.00

Indonésia

(7.30.16.1) Consumo de eletricidade comprada (MWh)

3607.8

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

2458028.7

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

2461636.50

Japan

(7.30.16.1) Consumo de eletricidade comprada (MWh)

13977

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

0

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

13977.00

Malásia

(7.30.16.1) Consumo de eletricidade comprada (MWh)

65471.6

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

0

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

65471.60

Omã

(7.30.16.1) Consumo de eletricidade comprada (MWh)

607095.23

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

0

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

607095.23

Reino Unido da Grã-Bretanha e Irlanda do Norte

(7.30.16.1) Consumo de eletricidade comprada (MWh)

34106.49

(7.30.16.2) Consumo de eletricidade autogerada (MWh)

0

(7.30.16.4) Consumo de calor, vapor e refrigeração comprados (MWh)

0

(7.30.16.5) Consumo de calor, vapor e refrigeração autogerados (MWh)

0

(7.30.16.6) Consumo total de energia para eletricidade/aquecimento/vapor/refrigeração (MWh)

34106.49
[Linha fixa]

(7.42) Forneça detalhes sobre as commodities relevantes para as atividades de produção de mineração da organização.

Row 1

(7.42.1) Produto de saída

Selecione de:
☑ Cobre

(7.42.2) Capacidade, toneladas métricas

51000000

(7.42.3) Produção, toneladas métricas

247.2

(7.42.4) Produção, unidades de cobre-equivalentes (toneladas métricas)

247.2

(7.42.5) Emissões de Escopo 1

391534.22

(7.42.6) Emissões de Escopo 2

0

(7.42.7) Abordagem das emissões de Escopo 2

Selecione de:
☑ Com base no mercado

(7.42.8) Metodologia de precificação para o valor de cobre-equivalente

Copper conversion factor for the calculation of the copper-equivalent figure: Copper average price divided by copper average price for the period of 2019 to 2021 1.0

(7.42.9) Explique

It includes the GHG emissions from from Brazilian copper operations (Salobo and Sossego). comprising mine and processing plants to produce copper concentrate.

Row 2

(7.42.1) Produto de saída

Selecione de:
☑ Minério de ferro

(7.42.2) Capacidade, toneladas métricas

438865689

(7.42.3) Produção, toneladas métricas

321154

(7.42.4) Produção, unidades de cobre-equivalentes (toneladas métricas)

5796.86

(7.42.5) Emissões de Escopo 1

2730370.39

(7.42.6) Emissões de Escopo 2

29956.78

(7.42.7) Abordagem das emissões de Escopo 2

Selecione de:
☑ Com base no mercado

(7.42.8) Metodologia de precificação para o valor de cobre-equivalente

Copper conversion factor for the calculation of the copper-equivalent figure: Copper average price divided by copper average price for the period of 2019 to 2021

(7.42.9) Explique

It includes the GHG emissions from iron ore mines in Brazil. which we refer to as the Northern. Southeastern. Southern. Northern System comprises Serra Norte. Serra Leste and Serra Sul mines. The Southeastern System comprises three mining complexes: Itabira. Mariana and Minas Centrais. The Southern System comprises two major mining complexes: Vargem Grande and Paraopeba.
[Adicionar linha]

(7.42.1) Forneça detalhes sobre as commodities relevantes para as atividades de produção de metais da organização.

Row 1

(7.42.1.1) Produto de saída

Selecione de:
☑ Níquel

(7.42.1.2) Capacidade (toneladas métricas)

3393100

(7.42.1.3) Produção (toneladas métricas)

164.9

(7.42.1.4) Produção anual em unidades de cobre-equivalentes (milhares de toneladas)

383.9

(7.42.1.5) Emissões de Escopo 1 (toneladas métricas de CO2e)

2987578.73

(7.42.1.6) Emissões de Escopo 2 (toneladas métricas de CO2e)

59474.88

(7.42.1.7) Abordagem das emissões de Escopo 2

Selecione de:
☑ Com base no mercado

(7.42.1.8) Metodologia de precificação para o valor do equivalente de cobre

Copper conversion factor for the calculation of the copper-equivalent figure: Copper average price divided by copper average price for the period of 2019 to 2021

(7.42.1.9) Explique

Includes the GHG emissions from Nickel operations and its coproducts (metallic copper. cobalt. PGM)
[Adicionar linha]

(7.45) Descreva as emissões combinadas globais brutas de Escopos 1 e 2 para o ano de reporte, em toneladas métricas de CO2e, por receita total em moeda unitária, e forneça eventuais métricas de intensidade adicionais adequadas para as operações de negócios.

Row 1

(7.45.1) Valor da intensidade

0.233

(7.45.2) Numerador da métrica (Emissões combinadas globais brutas de Escopos 1 e 2, em toneladas métricas de CO2e)

9720848.9

(7.45.3) Denominador da métrica

Selecione de:

☑ receita total unitária

(7.45.4) Denominador da métrica: Total da unidade

41784000

(7.45.5) Valor do Escopo 2 usado

Selecione de:

☑ Com base no mercado

(7.45.6) Porcentagem de variação em relação ao ano anterior

14.7

(7.45.7) Direção da variação

Selecione de:

☑ Aumentou

(7.45.8) Motivos da variação

Selecione todos os aplicáveis

☑ Variação na produção

(7.45.9) Explique

GHG emissions increased by 9%, mainly due to the greater volume of pellet production. However, despite the increase in sales volume in general in 2023, compared to 2022, the lower average price ended up impacting the net operating revenue of both businesses.
[Adicionar linha]

(7.52) Forneça as métricas climáticas adicionais relevantes para os negócios da organização.

Row 1

(7.52.1) Descrição

Selecione de:

☑ Uso de energia

(7.52.2) Valor métrico

0.31

(7.52.3) Numerador da métrica

124878758214903,00

(7.52.4) Denominador da métrica (apenas para métrica de intensidade)

409160111360198.00

(7.52.5) Porcentagem de variação em relação ao ano anterior

1

(7.52.6) Direção da variação

Selecione de:

☑ Diminuiu

(7.52.7) Explique

This change in the indicator is justified by the fact that the percentage of renewable electricity varies from year to year depending on consumption, the volume of certificates obtained, and the electricity generation matrix of each country.
[Adicionar linha]

(7.53) Havia uma meta de emissões ativa no ano de reporte?

Selecione todos os aplicáveis

☑ Meta absoluta

(7.53.1) Dê detalhes das metas de emissões absolutas e do progresso em relação a essas metas.

Row 1

(7.53.1.1) Número de referência da meta

Selecione de:

☑ Abs 1

(7.53.1.2) Esta meta tem bases científicas?

Selecione de:

☑ Sim, consideramos essa meta como sendo de bases científicas e, no momento, a meta está sendo analisada pela Science Based Targets initiative

(7.53.1.4) Meta desejada

Selecione de:

☑ Alinhada com menos de 2 °C

(7.53.1.5) Data em que a meta foi definida

01/01/2019

(7.53.1.6) Abrangência da meta

Selecione de:

☑ Na organização como um todo

(7.53.1.7) Gases de efeito estufa abrangidos pela meta

Selecione todos os aplicáveis

☑ Metano (CH4)

☑ Hexafluoreto de enxofre (SF6)

☑ Óxido nitroso (N2O)
☑ Dióxido de carbono (CO2)
☑ Perfluorcarbonetos (PFCs)
☑ Hidrofluorcarbonetos (HFCs)
☑ Trifluoreto de nitrogênio (NF3)

(7.53.1.8) Escopos

Selecione todos os aplicáveis
☑ Escopo 1
☑ Escopo 2

(7.53.1.9) Método de contabilização do Escopo 2

Selecione de:
☑ Com base no mercado

(7.53.1.11) Data de término do ano-base

12/31/2017

(7.53.1.12) Emissões no ano-base de Escopo 1 abrangidas pela meta (toneladas métricas de CO2e)

10918638.89

(7.53.1.13) Emissões no ano-base de Escopo 2 abrangidas pela meta (toneladas métricas de CO2e)

1294622.29

(7.53.1.31) Emissões totais no ano-base de Escopo 3 abrangidas pela meta (toneladas métricas de CO2e)

0.000

(7.53.1.32) Emissões totais no ano-base abrangidas pela meta em todos os Escopos selecionados (toneladas métricas de CO2e)

12213261.180

(7.53.1.33) Emissões no ano-base de Escopo 1 abrangidas pela meta como porcentagem das emissões totais no ano-base de Escopo 1

100

(7.53.1.34) Emissões no ano-base de Escopo 2 abrangidas pela meta como porcentagem das emissões totais no ano-base de Escopo 2

100

(7.53.1.53) Emissões no ano-base abrangidas pela meta em todos os Escopos selecionados, como porcentagem das emissões totais no ano-base em todos os Escopos selecionados

100

(7.53.1.54) Data de término da meta

12/31/2030

(7.53.1.55) Meta de redução com relação ao ano-base (%)

33

(7.53.1.56) Emissões totais na data de término da meta abrangidas pela meta em todos os Escopos selecionados (toneladas métricas de CO2e)

8182884.991

(7.53.1.57) Emissões de Escopo 1 no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

9391859.89

(7.53.1.58) Emissões de Escopo 2 no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

328989.01

(7.53.1.77) Emissões totais no ano de reporte abrangidas pela meta em todos os escopos selecionados (toneladas métricas de CO2e)

9720848.900

(7.53.1.78) Emissões relacionadas à terra abrangidas pela meta

Selecione de:

☑ Não, não abrange nenhuma emissão relacionada à terra (p. ex., SBT não FLAG)

(7.53.1.79) Porcentagem da meta alcançada com relação ao ano-base

61.84

(7.53.1.80) Status da meta no ano de reporte

Selecione de:

☑ Em andamento

(7.53.1.82) Explique a abrangência da meta e identifique eventuais exclusões

This target is company-wide and covers 100% of both our Scope 1 and 2 emissions. Vale doesn't have any exclusions for this target.

(7.53.1.83) Objetivo da meta

Vale recognizes that climate change represents one of the greatest challenges for society and is committed to contributing to solutions that limit the increase in temperature by up to 2C, as defined in the Paris Agreement. Moreover, the company plays a fundamental role in the global energy transition, with its portfolio of high-quality iron ore products and solutions, essential for decarbonizing steelmaking, and as a producer of metals that are essential for global electrification. In this regard, Vale's BD updated the organization's net-zero strategy in 2019. Aiming to actively support the decarbonization of the steel, metallurgical and shipping chains, the company's main commitment is to become net-zero in its operations (scopes 1 & 2) by 2050, considering the target to reduce 33% of scopes 1&2 and the target to consume 100% of electricity from renewable sources by 2025 in Brazil, and globally in 2030.

(7.53.1.84) Plano para alcançar a meta e progresso realizado até o fim do ano de reporte

With most of our combined emissions from Scope 1 and 2 deriving from combustion and industrial processes related to our operations (90.5%), we were focused in reducing emissions within these scopes with initiatives to decarbonize our primary sources of direct emissions as well as emissions related to purchased electricity. Our efforts are focused on replacing fossil fuels such as diesel, natural gas, and anthracite with alternative, low carbon energy sources, as well as developing renewable sources. One example of scope 1 emission reduction initiative is related to pelletizing plants, that account for approximately 34% of our Scope 1 emissions. In 2023, we completed feasibility analysis tests on the use of biocarbon, replacing 100% of conventional fuel with biocarbon in the process of burning iron ore agglomerate, used in steel production.In relation to indirect emissions from purchased electricity (Scope 2), in 2023 we met our goal to meet 100% of our electricity requirement in Brazil from renewable sources reaching the goal two years ahead of schedule (2025). It is noteworthy that this progress is mainly associated with the consumption of renewable electricity in Brazil, backed by 100% renewable energy certificates, which reduces our Scope 2 (market-based) emissions. This was partly thanks to our pipeline of renewable generation projects, including initiatives such as the Sol do Cerrado solar farm—which reached full capacity in 2023—as well as other hydro and wind projects in Brazil. In Malaysia, we took the first step towards the decarbonization of our operations by joining the government's pilot Green Electricity Tariff program in 2023, which offered renewable energy through the grid. This enabled us to reduce our Scope 2 emissions in Malaysia by 26% for the year. The renewable energy procured via the program is validated by the mRECs (Malaysian Renewable Energy Certificates. Globally, our electricity consumption was 30.6%. Vale has committed to achieving 100% of our global electricity requirement from renewable sources globally by 2030.

(7.53.1.85) Meta derivada por meio do uso de uma abordagem de descarbonização setorial

Selecione de:

☑ Não

Row 2

(7.53.1.1) Número de referência da meta

Selecione de:

☑ Abs 2

(7.53.1.2) Esta meta tem bases científicas?

Selecione de:

☑ Sim, consideramos esta meta como sendo de bases científicas, mas não nos comprometemos a buscar sua validação pela Science Based Targets initiative nos próximos dois anos

(7.53.1.4) Meta desejada

Selecione de:

☑ Alinhada com os 2 °C

(7.53.1.5) Data em que a meta foi definida

01/01/2020

(7.53.1.6) Abrangência da meta

Selecione de:

☑ Na organização como um todo

(7.53.1.7) Gases de efeito estufa abrangidos pela meta

Selecione todos os aplicáveis

☑ Metano (CH4)

☑ Óxido nitroso (N2O)

☑ Dióxido de carbono (CO2)

☑ Perfluorcarbonetos (PFCs)

☑ Hidrofluorcarbonetos (HFCs)

☑ Hexafluoreto de enxofre (SF6)

☑ Trifluoreto de nitrogênio (NF3)

(7.53.1.8) Escopos

Selecione todos os aplicáveis

☑ Escopo 3

(7.53.1.10) Categorias do Escopo 3

Selecione todos os aplicáveis

☑ Escopo 3, Categoria 15 – Investimentos

☑ Escopo 3, Categoria 2 – Bens de capital

☑ Escopo 3, Categoria 6 – Viagens de negócios

☑ Escopo 3, Categoria 1 – Bens e serviços adquiridos

☑ Escopo 3, Categoria 10 – Processamento de produtos vendidos

☑ Escopo 3, Categoria 4 – Transporte e distribuição upstream

☑ Escopo 3, Categoria 9 – Transporte e distribuição downstream

☑ Escopo 3, Categoria 7 – Deslocamentos diários dos funcionários para/do trabalho

☑ Escopo 3, Categoria 3 – Atividades relacionadas a combustíveis e energia (não incluídas nos Escopos 1 e 2)

(7.53.1.11) Data de término do ano-base

12/31/2018

(7.53.1.14) Emissões no ano-base de Escopo 3, Categoria 1: Bens e serviços adquiridos abrangidas pela meta (toneladas métricas de CO2e)

1740953.8

(7.53.1.15) Emissões no ano-base de Escopo 3, Categoria 2: Bens de capital abrangidas pela meta (toneladas métricas de CO2e)

26918.2

(7.53.1.16) Emissões no ano-base de Escopo 3, Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas no Escopo 1 ou 2) abrangidas pela meta (toneladas métricas de CO2e)

1565294.4

(7.53.1.17) Emissões no ano-base de Escopo 3, Categoria 4: Transporte e distribuição upstream abrangidas pela meta (toneladas métricas de CO2e)

13903675.1

(7.53.1.19) Emissões no ano-base de Escopo 3, Categoria 6: Viagens de negócios abrangidas pela meta (toneladas métricas de CO2e)

6573.3

(7.53.1.20) Emissões no ano-base de Escopo 3, Categoria 7: Deslocamentos diários dos funcionários de/para o trabalho abrangidas pela meta (toneladas métricas de CO2e)

41482.1

(7.53.1.22) Emissões no ano-base de Escopo 3, Categoria 9: Transporte e distribuição downstream abrangidas pela meta (toneladas métricas de CO2e)

5054628.8

(7.53.1.23) Emissões no ano-base de Escopo 3, Categoria 10: Processamento de produtos vendidos abrangidas pela meta (toneladas métricas de CO2e)

506625441.6

(7.53.1.28) Emissões no ano-base de Escopo 3, Categoria 15: Investimentos abrangidas pela meta (toneladas métricas de CO2e)

24143521.3

(7.53.1.31) Emissões totais no ano-base de Escopo 3 abrangidas pela meta (toneladas métricas de CO2e)

553108488.600

(7.53.1.32) Emissões totais no ano-base abrangidas pela meta em todos os Escopos selecionados (toneladas métricas de CO2e)

553108488.600

(7.53.1.35) Emissões no ano-base de Escopo 3, Categoria 1: Bens e serviços adquiridos abrangidas pela meta como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 1: Bens e serviços adquiridos (toneladas métricas de CO2e)

100

(7.53.1.36) Emissões no ano-base de Escopo 3, Categoria 2: Bens de capital abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 2: Bens de capital (toneladas métricas de CO2e)

100

(7.53.1.37) Emissões no ano-base de Escopo 3, Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas no Escopo 1 ou 2) abrangidas pela meta como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas no Escopo 1 ou 2) (toneladas métricas de CO2e)

100

(7.53.1.38) Emissões no ano-base de Escopo 3, Categoria 4: Transporte e distribuição (upstream) abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 4: Transporte e distribuição upstream (toneladas métricas de CO2e)

2.51

(7.53.1.40) Emissões no ano-base de Escopo 3, Categoria 6: Viagens de negócios abrangidas pela meta como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 6: Viagens de negócios (toneladas métricas de CO2e)

0.0

(7.53.1.41) Emissões no ano-base de Escopo 3, Categoria 7: Deslocamentos de funcionários de/para o trabalho abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 7: Deslocamento de funcionários (ida e volta do trabalho) (toneladas métricas de CO2e)

0.01

(7.53.1.43) Emissões no ano-base de Escopo 3, Categoria 9: Transporte e distribuição (downstream) abrangidas pela meta, como porcentagem das emissões totais no ano-base de Escopo 3, Categoria 9: Transporte e distribuição downstream (toneladas métricas de CO2e)

0.91

(7.53.1.44) Emissões no ano-base de Escopo 3, Categoria 10: Processamento de produtos vendidos abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 10: Processamento de produtos vendidos (toneladas métricas de CO2e)

91.6

(7.53.1.49) Emissões no ano-base de Escopo 3, Categoria 15: Investimentos abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3, Categoria 15: Investimentos (toneladas métricas de CO2e)

4.37

(7.53.1.52) Total de emissões de Escopo 3 no ano-base abrangidas pela meta, como porcentagem do total de emissões no ano-base de Escopo 3 (todas as categorias do Escopo 3)

100.0

(7.53.1.53) Emissões no ano-base abrangidas pela meta em todos os Escopos selecionados, como porcentagem das emissões totais no ano-base em todos os Escopos selecionados

100.0

(7.53.1.54) Data de término da meta

12/31/2035

(7.53.1.55) Meta de redução com relação ao ano-base (%)

15

(7.53.1.56) Emissões totais na data de término da meta abrangidas pela meta em todos os Escopos selecionados (toneladas métricas de CO2e)

470142215.310

(7.53.1.59) Emissões de Escopo 3, Categoria 1: Bens e serviços adquiridos no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

1942957.48

(7.53.1.60) Emissões de Escopo 3, Categoria 2: Bens de capital no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

13348.12

(7.53.1.61) Emissões de Escopo 3, Categoria 3: Atividades relacionadas a combustíveis e energia (não incluídas no Escopo 1 ou 2) no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

1409681.48

(7.53.1.62) Emissões de Escopo 3, Categoria 4: Transporte e distribuição upstream no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

11422349.69

(7.53.1.64) Emissões de Escopo 3, Categoria 6: Viagens de negócios no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

17556.67

(7.53.1.65) Emissões de Escopo 3, Categoria 7: Deslocamentos dos trabalhadores de/para o trabalho no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

19943.75

(7.53.1.67) Emissões de Escopo 3, Categoria 9: Transporte e distribuição downstream no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

2368321.5

(7.53.1.68) Emissões de Escopo 3, Categoria 10: Processamento de produtos vendidos no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

427733438.45

(7.53.1.73) Emissões de Escopo 3, Categoria 15: Investimentos no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

6273417.39

(7.53.1.76) Total de emissões de Escopo 3 no ano de reporte abrangidas pela meta (toneladas métricas de CO2e)

451201014.530

(7.53.1.77) Emissões totais no ano de reporte abrangidas pela meta em todos os escopos selecionados (toneladas métricas de CO2e)

451201014.530

(7.53.1.78) Emissões relacionadas à terra abrangidas pela meta

Selecione de:

☑ Não, não abrange nenhuma emissão relacionada à terra (p. ex., SBT não FLAG)

(7.53.1.79) Porcentagem da meta alcançada com relação ao ano-base

122.83

(7.53.1.80) Status da meta no ano de reporte

Selecione de:

☑ Em andamento

(7.53.1.82) Explique a abrangência da meta e identifique eventuais exclusões

This company-wide target covers 100% of all our Scope 3 emissions, focusing on the largest categories most relevant to our business activities (Purchased goods and services, Fuel-and-energy-related activities [not included in Scope 1 or 2], Upstream transportation and distribution, Downstream transportation and distribution, Processing of sold products) while excluding just two categories: Waste generated in operations - the calculations demonstrated that the emissions from Solid Waste and Wastewater treatment remains not material, representing 0.04% of Vale's Scope 3 emissions in 2022 and; Upstream leased assets - This category may cause double counting at Vale's scope 1 emission).

(7.53.1.83) Objetivo da meta

To advance decarbonization in the mining industry, it is essential that our entire value chain work together. With our broader value chain accounting for 97.9% of our global emissions, mitigating these emissions is crucial to our overall decarbonization strategy

(7.53.1.84) Plano para alcançar a meta e progresso realizado até o fim do ano de reporte

We have established a target to achieve a 15% reduction in our value-chain initiatives by 2025, from a 2018 baseline. Our target was defined according to science-based methodology, following the absolute contraction approach and aligned with the 2C temperature increase scenario. Our strategy to achieve our Scope 3 target consists of two core approaches: providing our customers with a portfolio of low- or zero-carbon iron ore agglomerates and building structural partnerships with our value chain (Memorandum of Understanding). Concurrently, we envisage the use of high-integrity carbon credits for up to 20% of our proposed target (equivalent to 16 Mt CO2e) for hard-to-abate sectors. Any use of carbon credits will be compliant with the principles of additionality, permanence, and transparency - demonstrating a strategic focus and commitment to established environmental targets.

(7.53.1.85) Meta derivada por meio do uso de uma abordagem de descarbonização setorial

Selecione de:

☑ Não

[Adicionar linha]

(7.54) Havia alguma outra meta climática ativa no ano de reporte?

Selecione todos os aplicáveis

☑ Metas de aumento ou manutenção do consumo ou da produção de energia de baixo carbono

☑ Metas de zero líquido

(7.54.1) Forneça detalhes das metas da organização para aumentar ou manter o consumo ou a produção de energia de baixo carbono.

Row 1

(7.54.1.1) Número de referência da meta

Selecione de:

☑ Low 1

(7.54.1.2) Data em que a meta foi definida

01/01/2019

(7.54.1.3) Abrangência da meta

Selecione de:

☑ Na organização como um todo

(7.54.1.4) Tipo de meta: vetor de energia

Selecione de:

☑ Eletricidade

(7.54.1.5) Tipo de meta: atividade

Selecione de:

☑ Consumo

(7.54.1.6) Tipo de meta: fonte de energia

Selecione de:

☑ Somente fonte(s) de energia renovável

(7.54.1.7) Data de término do ano-base

12/31/2017

(7.54.1.8) Consumo ou produção do vetor de energia selecionado no ano-base (MWh)

17317873

(7.54.1.9) Participação percentual das energias renováveis ou de baixo carbono no ano-base

79

(7.54.1.10) Data de término da meta

12/31/2030

(7.54.1.11) Participação percentual das energias renováveis ou de baixo carbono na data de término da meta

100

(7.54.1.12) Participação percentual das energias renováveis ou de baixo carbono no ano de reporte

88.5

(7.54.1.13) Porcentagem da meta alcançada com relação ao ano-base

45.24

(7.54.1.14) Status da meta no ano de reporte

Selecione de:

☑ Em andamento

(7.54.1.16) Esta meta faz parte de uma meta de emissões?

ABS1

(7.54.1.17) Esta meta faz parte de uma iniciativa abrangente?

Selecione todos os aplicáveis

☑ Não, ela não faz parte de uma iniciativa mais abrangente

(7.54.1.19) Explique a abrangência da meta e identifique eventuais exclusões

In 2019, the company reviewed its climate goals, including new commitments to reduce greenhouse gas (GHG) emissions, bolder goals than previously established in 2018, aiming to become a net zero mining company. The reduction of scope 2 emissions has an important contribution to this climate goal, as the company is committed to consuming 100% of electricity based on renewable energy sources until 2030.

(7.54.1.20) Objetivo da meta

This target is directly linked to our target to reduce absolute Scope 1 and 2 emissions by 33%by 2030 (from a 2017 baseline), since it contributes to reduce our scope 2 emissions

(7.54.1.21) Plano para alcançar a meta e progresso realizado até o fim do ano de reporte

To achieve our target to get 100% renewable electricity globally by 2030 we have some initiatives to drive it. The Sol do Cerrado Project stands out among the initiatives on this front for generating solar energy in the municipality of Jaíba (MG), in Brazil. With an installed capacity of 766 megawatts-peak, the project will produce a mean capacity of approximately 193 megawatts of energy per year for Vale's operations, corresponding to 13% of our demand for 2025. The operations of Sol do Cerrado solar farm, whitch is one of the biggest solar farms in Latin America, started in 2022, and the power generated by it, will reduce Vale's emissions by 134,000 tCO2e per year. This project reached full capacity in 2023. In 2023 we met our goal to meet 100% of our electricity requirement in Brazil from renewable sources reaching the goal two years ahead of schedule (2025). In addition to investing in a generation, Vale entered into agreements in 2021 to use energy storage batteries in its operations at the Ilha da Guaíba Terminal and in Sudbury, Canada, thus helping to ensure greater competitiveness and security of energy supply to these operations. Besides, in Canada, Vale recently signed a power purchase agreement (PPA) with Indigenous partners to provide wind power to our Voisey's Bay operations, thus partially replacing diesel oil consumption with renewable electricity. Commercial operation of the wind project is planned for 2026 and we are aimed at reducing emissions by 34,602 tCO2e annually - equivalent to 16% of the emissions from Voisey's Bay operations.
[Adicionar linha]

(7.54.3) Forneça detalhes da(s) sua(s) meta(s) de zero líquido.

Row 1

(7.54.3.1) Número de referência da meta

Selecione de:
☑ NZ1

(7.54.3.2) Data em que a meta foi definida

12/31/2019

(7.54.3.3) Abrangência da meta

Selecione de:

☑ Na organização como um todo

(7.54.3.4) Metas relacionadas a esta meta de zero líquido

Selecione todos os aplicáveis

☑ Abs1

(7.54.3.5) Data de término da meta para se atingir o zero líquido

12/31/2050

(7.54.3.6) Esta meta tem bases científicas?

Selecione de:

☑ Não, mas prevemos definir uma nos próximos dois anos

(7.54.3.8) Escopos

Selecione todos os aplicáveis

☑ Escopo 1

☑ Escopo 2

(7.54.3.9) Gases de efeito estufa abrangidos pela meta

Selecione todos os aplicáveis

☑ Metano (CH4)

☑ Óxido nitroso (N2O)

☑ Dióxido de carbono (CO2)

☑ Hexafluoreto de enxofre (SF6)

☑ Trifluoreto de nitrogênio (NF3)

☑ Perfluorcarbonetos (PFCs)

☑ Hidrofluorcarbonetos (HFCs)

(7.54.3.10) Explique a abrangência da meta e identifique eventuais exclusões

Vale's net-zero target covers the whole company and operations and includes scopes 1 and 2.

(7.54.3.11) Objetivo da meta

Vale is committed to leading the transition towards a net-zero mining industry. Vale is committed to contributing to solutions that will help limit the increase in the average global temperature to well below 2ºC, as set forth in the Paris Agreement. Vale endorses and follow the Task Force on Climate-related financial disclosures (TCFD) framework for risks and opportunities related to climate change. We have ambitious goals related to climate change risk management, including targets to reduce scopes 1 and 2 absolute emissions by 33% until 2030, with 2017 as a baseline, and to become net zero by 2050.

(7.54.3.12) A organização pretende neutralizar eventuais emissões residuais com remoções permanentes de carbono no fim da meta?

Selecione de:

☑ Sim

(7.54.3.13) A organização planeja mitigar as emissões além da sua cadeia de valor?

Selecione de:

☑ Não, não planejamos mitigar as emissões além da nossa cadeia de valor

(7.54.3.14) A organização pretende adquirir e cancelar créditos de carbono para a neutralização e/ou a mitigação além da cadeia de valor?

Selecione todos os aplicáveis

☑ Sim, planejamos adquirir e cancelar créditos de carbono para a neutralização ao fim da meta

(7.54.3.15) Marcos planejados e/ou investimentos de curto prazo para a neutralização no fim da meta

With most of our combined emissions from Scope 1 and 2 deriving from combustion and industrial processes related to our operations (90.5%), we were focused in reducing emissions within these scopes with initiatives to decarbonize our primary sources of direct emissions as well as emissions related to purchased electricity.

Our efforts are focused on replacing fossil fuels such as diesel, natural gas, and anthracite with alternative, lowcarbon energy sources, as well as developing renewable sources. In relation to indirect emissions from purchased electricity (Scope 2), in 2023 we met our goal to meet 100% of our electricity requirement in Brazil from renewable sources reaching the goal two years ahead of schedule (2025). Globally, our electricity consumption was 30.6%. Vale has committed to achieving 100% of our global electricity requirement from renewable sources globally by 2030.

(7.54.3.17) Status da meta no ano de reporte

Selecione de:

☑ Em andamento

(7.54.3.19) Processo de revisão de meta

Not applicable.
[Adicionar linha]

(7.55) A organização tinha iniciativas de redução de emissões ativas no ano de reporte? Observe que isto pode incluir aquelas nas fases de planejamento e/ou implementação.

Selecione de:

☑ Sim

(7.55.1) Identifique o número total de iniciativas em cada estágio de desenvolvimento; para aquelas no estágio de implementação, identifique a economia de CO2e estimada.

	Número de iniciativas	Economia anual total estimada de CO2e em toneladas métricas de CO2e (somente para linhas marcadas com *)
Em fase de pesquisa	*62*	*Entrada numérica*
A ser implementada	*11*	*255840.9*
Implementação iniciada	*2*	*534178.82*

	Número de iniciativas	Economia anual total estimada de CO2e em toneladas métricas de CO2e (somente para linhas marcadas com *)
Implementada	*2*	*68000*
Não será implementada	*0*	*Entrada numérica*

[Linha fixa]

(7.55.2) Forneça detalhes na tabela abaixo sobre as iniciativas implementadas no ano de reporte.

Row 1

(7.55.2.1) Categoria de iniciativa e Tipo de iniciativa

Consumo de energia de baixo carbono

☑ Solar FV

(7.55.2.2) Economia anual estimada de CO2e (toneladas métricas de CO2e)

40000

(7.55.2.3) Escopo(s) ou categoria(s) do Escopo 3 em que ocorrem as reduções nas emissões

Selecione todos os aplicáveis

☑ Escopo 2 (com base na localização)

☑ Escopo 2 (com base no mercado)

(7.55.2.4) Voluntária/obrigatória

Selecione de:

☑ Voluntária

(7.55.2.5) Economia monetária anual (unidade monetária – conforme especificada em C0.4)

70500000

(7.55.2.6) Investimento necessário (unidade monetária – conforme especificado em C0.4)

590000000

(7.55.2.7) Período de retorno

Selecione de:

☑ 4-10 anos

(7.55.2.8) Vida útil estimada da iniciativa

Selecione de:

☑ 21-30 anos

(7.55.2.9) Explique

Vale implemented the Sol do Cerrado Project, which has been installed in the municipality of Jaíba, in the northern region of Minas Gerais. The project is one of the largest solar energy parks in Latin America, with an installed power of 766 Megawatts-peak, equivalent to the consumption of a city of 800 thousand inhabitants. In 2023, the operation reached its maximum capacity, representing 16% of all energy consumed by Vale in Brazil. Sol do Cerrado, whose investments total around R3 billion (US590 million), is an important step in helping Vale achieve its climate goals of reducing net carbon emissions (scopes 1 and 2) by 33% by 2030 and reach zero by 2050. Vale expects to reach 100% renewable electricity consumption in Brazil by 2025, and, globally, by 2030.

Row 2

(7.55.2.1) Categoria de iniciativa e Tipo de iniciativa

Consumo de energia de baixo carbono

☑ Composição de eletricidade de baixo carbono

(7.55.2.2) Economia anual estimada de CO2e (toneladas métricas de CO2e)

28000

(7.55.2.3) Escopo(s) ou categoria(s) do Escopo 3 em que ocorrem as reduções nas emissões

Selecione todos os aplicáveis

☑ Escopo 2 (com base no mercado)

(7.55.2.4) Voluntária/obrigatória

Selecione de:

☑ Voluntária

(7.55.2.5) Economia monetária anual (unidade monetária – conforme especificada em C0.4)

0

(7.55.2.6) Investimento necessário (unidade monetária – conforme especificado em C0.4)

0

(7.55.2.7) Período de retorno

Selecione de:

☑ Nenhum retorno

(7.55.2.8) Vida útil estimada da iniciativa

Selecione de:

☑ Em andamento

(7.55.2.9) Explique

Vale has been investing in initiatives to reduce scope 2 emissions since 2019. In 2023, the Company acquired IRECs to reduce its scope 2 emissions. The purchase values of the certificates are sensitive information and are not disclosed to the market.
[Adicionar linha]

(7.55.3) Que métodos são utilizados para estimular os investimentos em atividades de redução de emissões?

Row 1

(7.55.3.1) Método

Selecione de:

☑ Conformidade com requisitos/normas regulamentares

(7.55.3.2) Explique

Vale is aware of the targets and established its own target in order to comply with Brazilian policy as well as other regulations worldwide. Vale also follows national discussions on the implementation of the NDC. Since 2019, Vale is committed to the new pact with society to positively impact society, going beyond taxes, social projects and reparation of Brumadinho, by becoming a development enabler in the areas where Vale operates and fostering a safer and more sustainable Brazilian mining industry. Also, in 2019, the company published a group of sustainability goals (linked to the governance part - goals), including new commitments to reduce greenhouse gas (GHG) emissions, bolder than goals established previously in 2018, aiming to become a net zero mining company. To reduce 33% of the absolute emission of scopes 1 and 2 in 2030, aligned with the Paris Agreement to become net zero (scope 1 and 2) by 2050. In adherence to Vale's Global Climate Change Policy and the climate-related risks and opportunities analysis, Vale created the Carbon Program in the Value Chain. Initially, the program involved the training of suppliers to prepare an inventory of GHG emissions. Nowadays, it provides for the annual reporting commitment of GHG emissions from critical suppliers to Vale, as well as other information on emission management. This commitment is formalized through the insertion of a voluntary clause in contracts signed in Brazil. The program is aimed at companies from any region, provided they have active contracts with Vale. Vale suppliers considered key in terms of emissions in the supply chain are annually invited to participate in the CDP Supply Chain program.

Row 2

(7.55.3.1) Método

Selecione de:

☑ Orçamento dedicado ao P&D de produtos de baixo carbono

(7.55.3.2) Explique

Through the adoption of existing technologies into new forms or developing new technologies and processes in R&D initiatives, Vale seeks to transform its businesses. At Vale, the use of technology seeks to redesign the way the company works, helping to eliminate certain risk scenarios, positioning us as a leader in safety and risk management, and promoting sustainability and adaptation to climate change. Vale enrolls in partnerships with academies and scientific institutions, and with local governments aiming at the development of Brazilian scientific capacity to study physical impacts and to propose adaptation measures. Investment in

R&D represents a crucial risk mitigation strategy for a long-term horizon (10 years or more) and a substantial opportunity, generating the development of new technologies capable of increasing productivity and decreasing GHG emissions. Case: Vale created the Center for Advanced Climate Studies in partnership with the Espírito Santo Government and the University of Espírito Santo. The center has the objective of conducting climate-related research that will assist the state, the country and Vale itself to better understand the climate change issues and how to deal with them. The center had an initial financial contribution of US175,000 from Vale and already has 21 projects under development. Another example is the Vale Technological Institute (ITV), founded in 2010, which is developing low-carbon and clean/renewable energy R&D and products. This institute has a dedicated group of researchers focused on climate change that seeks to understand the science of climate change and to develop new technologies in order for Vale to better adapt to the new low-carbon economy. So far, 85 masters have graduated, 45% of whom are Vale professionals. In 2019, ITV created the Resident Master's Student Program with the purpose of boosting and influencing local professionals' training on topics related to the 17 SDGs, offering 10 scholarships. ITV already invested (between 2011 to 2022) USD 151.20 million in research projects and published 1,674 scientific articles in collaboration with universities, research centers, and other companies, and supported 179 R&D projects. In order to prioritize the most cost-efficient low-carbon technologies and R&D projects, Vale uses a Marginal Abatement Cost Curve (MACC).

Row 3

(7.55.3.1) Método

Selecione de:

☑ Engajamento dos funcionários

(7.55.3.2) Explique

Vale Climate Change team developed an online course on GHG Inventory and Climate Change, available to any employee, and provides training sessions about these issues in order to mobilize its employees around the necessity of reducing emissions in the company's operations and projects. Vale also has focal points in the business areas engaged in identifying opportunities to reduce energy and GHG emissions. Aligned with the Paris Agreement's goal of limiting global warming to below 2ºC, Vale linked the target of reduction of 33% absolute scope 1 and 2 emissions with the variable remuneration of all Vale's employees.

Row 4

(7.55.3.1) Método

Selecione de:

☑ Programas de incentivos/reconhecimento internos

(7.55.3.2) Explique

The Sustainability KPI goals program encourages the continuous improvement of the company's performance on material socio-environmental issues. Environmental and social indicators work as metrics to assess the sustainability of the different business areas, reflecting on the teams' variable remuneration. All of these goals,

once defined, are registered and monitored in the Career, Succession and Performance (CSP) system. The Sustainability KPIs integrate the variable remuneration of all Vale employees and impact all hierarchical levels, up to the CEO. As of 2021, goals related to the climate agenda represent 5% of short-term (out of 10% related to Sustainability) and 6% of long-term compensation (out of 20% ESG-related) including our CEO and executive vice presidents

Row 5

(7.55.3.1) Método

Selecione de:

☑ Curva de custo marginal de abatimento

(7.55.3.2) Explique

In order to prioritize the most cost-efficient initiatives to be implemented, the company has an annually updated marginal abatement cost curve (MACC). In its 2021 update, we have increased the number of initiatives mapped from 30 to 40, while increasing their technology maturity through the implementation of pilots. Currently, our portfolio of initiatives comprises more than 40 projects, prioritizing the most cost-competitive ones in an effort to achieve our 2030 target. We are committed to developing and implementing innovative lower carbon technologies, and 50% of commercial initiatives mapped in our MACC are already entering FEL stage. Also, 80% of initiatives mapped are NPV positive² at the shadow price of USD 50/tCO_2e. Furthermore, according to the initiatives accounted for in the 2022 MAC curve, the potential GHG emission reductions by project type in 2030 are as follows: Biodiesel and efficiency 6%; Scope 2 18%; Bioenergy 56%; Electrification 7%; Natural Gas and others 13%.

Row 6

(7.55.3.1) Método

Selecione de:

☑ Orçamento dedicado à eficiência energética

(7.55.3.2) Explique

A large part of GHG emissions is directly linked to Vale's operations' energy consumption, so Vale knows that energy efficiency is a key factor in reducing GHG emissions and optimizing costs. Vale's Energy-Efficiency Program aims to include the topic of energy efficiency in a structured way into operational routines, making employees think systematically about initiatives that promote energy efficiency in their processes. This work is being developed globally through multidisciplinary groups in each operation and supported by Smart Energy, the platform responsible for managing electricity consumption throughout the company, providing automated energy-efficiency indicators. In addition to making a significant contribution to reducing GHG emissions, the Energy Efficiency Program also addresses ESG issues by creating indicators of energy intensity consumed by products, as well as by setting targets for increasing energy efficiency, which will occur throughout

2021. The search for efficient and sustainable energy management continues to be a priority for the Energy Efficiency Program, whose principles are based on the ISO 50001 standard. As a result, PTVI, our nickel operation in Indonesia, obtained ISO 50001 certification in 2022.

Row 7

(7.55.3.1) Método

Selecione de:

☑ Orçamento dedicado a outras atividades de redução de emissões

(7.55.3.2) Explique

In 2021, Vale announced investments of USD 4 to 6 billion by 2030 to reduce its Scope 1 and 2 emissions. Reduction initiatives are prioritized by the company according to its emission abatement curve for 2030, which is public and can be accessed in the Climate Change Report. About 75% of the abatement curve initiatives, consolidated in reduction potential by type of project graph showed positive NPV1, at a shadow price of USD 50/tCO_2e. Since 2020, our expenditures on climate change have totaled USD 810 million, of which USD 543 million in this last year. • In the short term, we are prioritizing energy efficiency and a switch to renewable energy. • We will also increase the role of bioenergy as a transition fuel for our operations. • For the longer term, we will count on both electrification and innovative processes.

Row 8

(7.55.3.1) Método

Selecione de:

☑ Preço interno do carbono

(7.55.3.2) Explique

At the end of 2019, Vale adopted an internal carbon price of 50 dollars per ton of CO2 equivalent (US50/tCO2eq). This price is aligned to the temperature targets of the Paris Agreement, according to the recommendations of the Carbon Pricing Leadership Coalition (CPLC) and all investment decisions are submitted to an analysis considering that price, which is a practice that not only encourages investments in greenhouse gas ("GHG") emission reduction, but also prepares us for a scenario of more restrictive regulations. In June 2020, the use of the internal carbon price in the economic-financial analysis of new investments started. The carbon price starts supporting the risk and opportunity assessment, selection and prioritization of projects, contributing to Vale's decarbonization trajectory.
[Adicionar linha]

(7.73) Estão sendo fornecidos dados no nível do produto para os bens ou serviços da organização?

Selecione de:
☑ Não, não forneceremos os dados

(7.74) A organização classifica algum dos seus bens e/ou serviços existentes como produto de baixo carbono?

Selecione de:
☑ Sim

(7.74.1) Dê detalhes dos produtos e/ou serviços que a organização classifica como produtos de baixo carbono.

Row 1

(7.74.1.1) Nível de agregação

Selecione de:
☑ Produto ou serviço

(7.74.1.2) Taxonomia utilizada para classificar o(s) produto(s) ou serviço(s) como de baixo carbono

Selecione de:
☑ Nenhuma taxonomia utilizada para classificar o(s) produto(s) ou serviço(s) como de baixo carbono

(7.74.1.3) Tipo do(s) produto(s) ou serviço(s)

Outros
☑ Outro, especifique **:**Long Harbour Nickel Melt Rounds and Plating Rounds

(7.74.1.4) Descrição do(s) produto(s) ou serviço(s)

The nickel rounds from our Long Harbour processing plant, a leading-edge hydrometallurgical facility on Canada's East Coast, are one of the least carbon-intensive nickel products on the market. The product had a carbon footprint of 12.3 t CO2e per tonne (7.1 Scope 1 & 2 only) in 2023, and is within the first quartile of GHG intensity for nickel sulphides, as collaborated by nickel industry analysis from Skarn Associates. Therefore, these Class I nickel products position us well for supplying

to the electric vehicle industry. Nickel Rounds are a high-purity form of nickel suitable for melting applications, and the Long Harbour Nickel Rounds are manufactured by electrolytic refining at Vale's Long Harbour Processing Plant in Newfoundland, Canada, making it one of the lowest carbon-intensive nickel products on the market.

(7.74.1.5) A organização fez uma estimativa das emissões evitadas por este(s) produto(s) ou serviço(s) de baixo carbono?

Selecione de:

☑ Não

(7.74.1.13) Receita gerada com produto(s) ou serviço(s) de baixo carbono como porcentagem do total de receita no ano do reporte

8

Row 3

(7.74.1.1) Nível de agregação

Selecione de:

☑ Produto ou serviço

(7.74.1.2) Taxonomia utilizada para classificar o(s) produto(s) ou serviço(s) como de baixo carbono

Selecione de:

☑ Nenhuma taxonomia utilizada para classificar o(s) produto(s) ou serviço(s) como de baixo carbono

(7.74.1.3) Tipo do(s) produto(s) ou serviço(s)

Energia

☑ Outro, especifique **:**Sudbury (Copper Cliff Nickel Refinery) Nickel Pellets, Discs & Chips, and Nickel Powders

(7.74.1.4) Descrição do(s) produto(s) ou serviço(s)

Vale's Canadian operations produce some of the lowest-carbon nickel globally. Class I nickel from the Copper Cliff Nickel Refinery in Ontario had a third-party assured footprint of 5.3 tonnes equivalent in 2023. This includes Scope 1 and 2 emissions from mining, milling and refining as well as upstream Scope 3 emissions from inputs. The Scope 1&2 value was 3.7 t CO_2e/t Ni., The GHG intensity is within the first quartile for nickel sulphides, as collaborated by nickel industry analysis from Skarn Associates.

(7.74.1.5) A organização fez uma estimativa das emissões evitadas por este(s) produto(s) ou serviço(s) de baixo carbono?

Selecione de:

☑ Sim

(7.74.1.6) Metodologia utilizada para calcular as emissões evitadas

Selecione de:

☑ Estimating and Reporting the Comparative Emissions Impacts of Products (WRI)

(7.74.1.7) Estágio(s) do ciclo de vida abrangido(s) para o(s) produto(s) ou serviço(s) de baixo carbono

Selecione de:

☑ Cradle-to-gate (“do berço ao portão”)

(7.74.1.8) Unidade funcional utilizada

Tonnes of CO2e per tonnes of Nickel

(7.74.1.9) Produto/serviço de referência ou cenário de base utilizado

Median nickel GHG intensity from Skarn Associates nickel sulphide industry reference: 10.7 tonnes CO_2e (Scope 1 & 2)

(7.74.1.10) Estágio(s) do ciclo de vida abrangido(s) para o produto/serviço de referência ou o cenário de base

Selecione de:

☑ Cradle-to-gate (“do berço ao portão”)

(7.74.1.11) Estimativa das emissões evitadas (toneladas métricas de CO2e por unidade funcional) com relação ao produto/serviço de referência ou ao cenário de base

301000

(7.74.1.12) Explique os cálculos de emissões evitadas, incluindo eventuais suposições

Calculation ('Skarn Associates Reference' – 'Sudbury (Copper Cliff Nickel Refinery) Nickel Pellets, Discs & Chips, and Nickel Powders Footprint') x 'Nickel Round Sales from Long Habour (10.7 t CO2e/t Ni – 5.3 t CO2e/t Ni) x 55,800 t Ni) 301,000 tCO2e It is worth pointing out that in 2023, we progressed in measuring the carbon footprints of Vale's products. The quantification and reporting of products' carbon footprints are based on the ISO 14067 Carbon Footprint of Products and Product Lifecycle Accounting and Reporting Standard of the GHG Protocol. The cradle-to-gate approach was used, as well as emissions from the production of inputs (Scope 3 Upstream). Carbon footprints have been calculated and assured by third parties for 100% of our base metal products.

(7.74.1.13) Receita gerada com produto(s) ou serviço(s) de baixo carbono como porcentagem do total de receita no ano do reporte

17
[Adicionar linha]

(7.79) A organização cancelou créditos de carbono com base em projetos no ano de reporte?

Selecione de:
☑ Não

C9. Desempenho ambiental – Segurança hídrica

(9.1) Existem exclusões na divulgação de dados hídricos da organização?

Selecione de:

☑ Não

(9.2) Em todas as operações da organização, qual proporção dos seguintes aspectos hídricos é regularmente medida e monitorada?

Captação de água – volume total

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The measurement of water withdrawals is preferably through: 1) Flow meters - pipes; 2) Parshall flumes – in shallow open channels; 3) Water level rules - in open channels; 4) when there is no possibility of measurement it is calculated according to the specificity of each operational unit. Since 2018, when the water 2030 target was launched, more than 600 new flow meters have been installed.

(9.2.4) Explique

Water withdrawal volumes are crucial for complying with GRI's performance indicators, which are consolidated monthly and include the operating units under our control. Each water resources responsible for the operational unit records the results monthly in Credit360, following the ICMM's guidelines. Annually these data are reported in our integrated report, which undergoes an audit. The past two years' data has been audited by PwC Auditores Independentes Ltda., according to

ISAE3000, including adherence to GRI standards. Moreover, to water resources policy, we have a water and wastewater management standard that provides guidance on water withdrawn, legal requirements for surface and groundwater use, measurement, monitoring, usage, and discharge. Our program includes integration and automation of monitoring systems, management tools, iterative dashboards and indicators. Additionally, we identify new measurement technologies and suppliers to enhance our monitoring capabilities.

Captação de água – volume por fonte

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The measurement of water withdrawals is preferably through: 1) Flow meters - pipes; 2) Parshall flumes – in shallow open channels; 3) Water level rules - in open channels; 4) when there is no possibility of measurement it is calculated according to the specificity of each operational unit. Since 2018, when the water 2030 target was launched, more than 600 new flow meters have been installed.

(9.2.4) Explique

Water withdrawal volumes by source are monitored in 100% of our direct operations. Measuring this aspect allows us to define the strategy for the priority areas and further refine the water-related targets and performance improvements. Each water resources responsible for the operational unit records the results monthly in Credit360, following the ICMM's guidelines. Annually these data are reported in our integrated report, which undergoes an audit. The past two years' data has been audited by PwC Auditores Independentes Ltda., according to ISAE3000, including adherence to GRI standards. Moreover, to water resources policy, we have a water and wastewater management standard that provides guidance on water withdrawn, legal requirements for surface and groundwater use, measurement, monitoring, usage, and discharge. Additionally, we identify new measurement technologies and suppliers to enhance our monitoring capabilities.

Água arrastada associada às atividades no setor de metais e mineração e/ou de carvão – volumes totais

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The value of this aspect of the water is obtained at the beginning of the project, verifying the percentage and density of the solids of the tailings. Throughout the operation this is calibrated, either by laboratory tests or by the monthly results of the water balance.

(9.2.4) Explique

This volume of water, in mining, is basically the water that gets trapped in the tailings. The volume of water entrained is heavily dependent on placement densities, data usually provided by process engineers, and varies by commodity. The totality of our operations are calculated, but not yet 100% measured, a smaller portion is still estimated, based on indirect calculations, which therefore may have errors greater than 5%.

Qualidade da captação de água

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

Common analytical methods used for trace metal analysis include atomic absorption spectroscopy (AAS), inductively coupled plasma optical emission spectrometry (ICP-OES), and inductively coupled plasma mass spectrometry (ICP-MS). We have contracted accredited labs to collect and analyze water quality and installed

sensors for continuous monitoring. All samples are stored in proper thermal boxes, ensuring a low temperature environment (42C) until analytical verification in the lab.

(9.2.4) Explique

To determine the source of water supply, Vale assesses both the qualitative and quantitative aspects of potential alternatives. Furthermore, we conduct studies to request permission from responsible agencies for the use of water. Once the water supply source is defined, a monitoring program is established considering the variables to be monitored, frequency, and measurement method. It should be noted that some countries require disclosing monitoring results to regulatory bodies as per water use permission granted by them. Our Vale Water Resources and Effluents Management Standard determines the minimum requirements that the monitoring plans of our operating units must contain and, when needed, they are complemented according to the guidelines of the management bodies. Our standard provides guidelines on sample collection and preservation methodology, analytical methodology, sample extraction, inventory cataloging, sample traceability documentation, and warranty documentation.

Descarga de água – volume total

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The measurement of water discharges is preferably through: 1) Flow meters - pipes; 2) Parshall flumes – in shallow open channels; 3) Water level rules - in open channels; 4) when there is no possibility of measurement is calculated according to the specificity of each operational unit. In addition, samples are collected, according to the frequency determined in the monitoring plan, sent to the laboratory, and evaluated according to the regulatory agencies.

(9.2.4) Explique

Water discharges total volumes are crucial for complying with GRI's performance indicators, which are consolidated monthly and include the operating units under our control. Each water resources responsible for the operational unit records the results monthly in Credit360, following the ICMM's guidelines. Annually these data is reported in our integrated report, which undergoes an audit. The past two years' data has been audited by PwC Auditores Independentes Ltda., according to ISAE3000, including adherence to GRI standards. Moreover, to water resources policy, we have a water and wastewater management standard that provides

guidance on water withdrawn, legal requirements for surface and groundwater use, measurement, monitoring, usage, and discharge. Our program includes integration and automation of monitoring systems, management tools, iterative dashboards and indicators. Additionally, we identify new measurement technologies and suppliers to enhance our monitoring capabilities.

Descargas de água – volumes por destino

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The measurement of water withdrawals is preferably through: 1) Flow meters - pipes; 2) Parshall flumes – in shallow open channels; 3) Water level rules - in open channels; 4) when there is no possibility of measurement is calculated according to the specificity of each operational unit. In addition, samples are collected, according to the frequency determined in the monitoring plan, sent to the laboratory and evaluated according to the regulatory agencies.

(9.2.4) Explique

Water discharges volumes by destination are monitored in 100% of our direct operations. Measuring this aspect allows us to define the strategy for the priority areas and further refine the water-related targets and performance improvements. Each water resources responsible for the operational unit records the results monthly in Credit360, following the ICMM's guidelines. Annually these data are reported in our integrated report, which undergoes an audit. The past two years' data has been audited by PwC Auditores Independents Ltda., according to ISAE3000, including adherence to GRI standards. Moreover, to water resources policy, we have a water and wastewater management standard that provides guidance on water withdrawn, legal requirements for surface and groundwater use, measurement, monitoring, usage, and discharge. Additionally, we identify new measurement technologies and suppliers to enhance our monitoring capabilities.

Descargas de água – volume por método de tratamento

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

Each operational unit recorded the volumes discharged on Credit 360, stratified in the following methods: Primary treatment, physical removal of suspended solids and floating material, typically by sedimentation; Secondary treatment, degradation of organic matter and reduction of solids through biological treatment; Tertiary treatment, additional treatment needed to remove suspended, colloidal and dissolved constituents. Preferred tools are pipes; parshall flumes, and water level rules.

(9.2.4) Explique

Vale's water monitoring program includes water discharges by treatment method. The information on the volumes of disposals and method of treatment is consolidated per unit monthly on the Credit 360 platform, include the operating units under our control and disclosed globally annually in the integrated report. We consider the GRI methodology, ICMM guidelines and specificities of our operations to calculate the water balance. Annually these data are reported in our integrated report, which undergoes an audit. The past two years' data has been audited by PwC Auditores Independentes Ltda., according to ISAE3000, including adherence to GRI standards.

Qualidade da descarga de água – por parâmetros de efluente padrão

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

Vale carries out water analyses at all our disposal points by a laboratory accredited to ISO 17.025, following standardes defined by local bodies. There are also installed sensors for continuous monitoring, and all samples are stored in proper thermal boxes, ensuring a low temperature environment (42C) until analytical verification in the lab. The analytical procedures used are those recommended by the "Standard Methods for the Examination of Water and Wastewater", latest edition.

(9.2.4) Explique

The discharge quality information is recorded and consolidated per unit monthly on the Credit 360 platform, include the operating units under our control, and disclosed annually in the integrated report. We consider GRI methodology, ICMM guidelines. Our Integrated Reporting are audited, and in the last 2 years the responsible company was PwC Auditores Independentes Ltda., according to ISAE3000 and GRI standards. We ensure that our effluent adhere to the quality standards set by the regulatory bodies in each location. Our results are regularly reported to the relevant authorities in accordance with their stipulated frequency. As there is no standardized quality index by the competent authorities for the mining sector, we follow the classification guideline defined by the ICMM to disclose the quality of our effluents in our public reports. This guidance can be found in Water Reporting, Good Practice Guide, 2nd Edition, page 35 (low quality and high quality).

Qualidade da descarga de água – emissões para a água (nitratos, fosfatos, pesticidas e/ou outras substâncias prioritárias)

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Anual

(9.2.3) Método de medição

Common analytical methods used for the analysis of trace metals include atomic absorption spectroscopy, inductively coupled plasma optical emission spectrometry, and inductively coupled plasma mass spectrometry. The Monitoring Plan of each operational unit includes the identification, quantification and characterization of the effluents generated and plans to monitor the quality and quantity of effluents.

(9.2.4) Explique

Vale's water monitoring program takes into account the standard effluent parameters determined by the management bodies of each country or region. Quality information on discharged volumes is recorded in stratified manner by monitoring point, parameter and location in Hydro Geoanalyst. The results are consolidated by unit on a monthly basis, including the operational units under our control, on the Credit 360 platform and disclosed globally annually in the integrated report. We consider the GRI methodology, ICMM guidelines and the local specificities of our operations to calculate the water balance. The data in the Integrated Report are audited and in the last 2 years the company responsible has been PwC Auditores Independentes Ltda, in accordance with ISAE3000, including adherence and treatment method to GRI standards.Regarding the preparation method for metals: USEPA 3005A - Acid Digestion of Waters for Total Recoverable or Dissolved Metals for Analysis by FLAA or ICP Spectroscopy.

Qualidade da descarga de água – temperatura

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

For environmental legislation, it is a standard parameter of the effluent, measured in the field and in the laboratory, at least once a month. Laboratory analysis: Temperature determination Working range: 1 to 90C, Method: SMWW 23rd Ed. 2017 - 2550A. Field analysis: Temperature determination. - Automatic stations. Working range: 9º to 50 ºC. Internal procedure: PRO-025756 - Automatic monitoring of water quality.

(9.2.4) Explique

The information on the quality of the volumes discharged is recorded in a stratified form by monitoring point, parameter and location in the Hydro Geoanalyst, the results are consolidated per unit monthly, include the operating units under our control, on the Credit 360 platform and disclosed globally annually in the integrated report. We consider the GRI methodology, ICMM guidelines and specificities of our operations to calculate the water balance. The data that makes up the Integrated Reporting are audited, and in the last 2 years the company responsible for this audit was PwC Auditores Independentes Ltda., according to ISAE3000, including the adherence and method of treatment to GRI standards.

Consumo de água – volume total

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

Consumption is calculated by the formula C(AB)-D (A is total water withdrawn for operational activities; B, total stored water; D, total water discharged). Consumption is calculated and recorded monthly in Credit360 by the responsible for each operating unit. These data are validated by the corporate team of experts following the ICMM. Consumption's totality is calculated but not yet 100% measured, a small part is estimated. Preferred tools are pipes; parshall flumes, and water level rules.

(9.2.4) Explique

Vale considers consumption the portion of water that after its use is unavailable for other use. The information on water consumption includes the operating units under our control and is consolidated per unit monthly on the Credit 360 platform and disclosed globally annually in the integrated reporting. We consider the GRI methodology, ICMM guidelines and specificities of our operations to calculate the water balance. The data that makes up the Integrated Reporting are audited, and in the last 2 years the company responsible for this audit was PwC Auditores Independentes Ltda., according to ISAE3000, including adherence to GRI standards.

Água reciclada/reutilizada

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The volume of water recycled/reused is monitored monthly and recorded on Credit360, software used to manage sustainability indicators. About the recycled/reused water, the data are collected as follows: 1) Flow meters - pipes; 2) Parshall flumes - in shallow open channels; 3) Water level rules - in open channels; 4) When there is no possibility of measurement is calculated according to the specificity of each operational unit

(9.2.4) Explique

The information on recycled/reused water is consolidated per unit monthly on the Credit 360 platform, include the operating units under our control and is disclosed globally annually in the integrated reporting. We consider the GRI methodology, ICMM guidelines and specificities of our operations to calculate the water balance. The data that makes up the Integrated Reporting are audited, and in the last 2 years the company responsible for this audit was PwC Auditores Independentes Ltda., according to ISAE3000, including adherence to GRI standards.

Fornecimento de serviços de WASH (água, saneamento e higiene) em perfeito funcionamento e gerenciados com segurança para todos os funcionários

(9.2.1) Porcentagem de unidades/instalações/operações

Selecione de:

☑ 100%

(9.2.2) Frequência de medição

Selecione de:

☑ Mensal

(9.2.3) Método de medição

The monitoring is through: 1) Flow meters - pipes; 2) Parshall flumes - in shallow open channels; 3) Water level rules - in open channels; 4) When there is no possibility of measurement is calculated according to the specificity of each unit; 5) Qualitative data and water samples collected and sent to the laboratory accredited periodically in accordance with the legislation. The physico-chemical analyses carried out are in accordance with the limits established for drinking water.

(9.2.4) Explique

All Vale operations provide WASH services to employees and contractors. We follow social action standards and principles on business and human rights, which are based on the guidelines of the United Nations Human Rights Council. These services are required by law, through labor laws and Vale follows fully in compliance.

The analysis in these waters is carried out by monitoring monthly. Vale guarantees that the water that goes to all workers is of good quality and quantity, as it performs preventive maintenance on all water supply equipment.
[Linha fixa]

(9.2.2) Quais são os volumes totais de captação, descarga e consumo de água em todas as operações da organização, como esses volumes se comparam ao ano de reporte anterior e como é previsto que eles variem?

Total de captação

(9.2.2.1) Volume (megalitros/ano)

496700

(9.2.2.2) Comparação com o ano de reporte anterior

Selecione de:
☑ Maior

(9.2.2.3) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:
☑ Mudança na metodologia de registro

(9.2.2.4) Previsão para cinco anos

Selecione de:
☑ Igual

(9.2.2.5) Principal motivo da previsão

Selecione de:
☑ Aumento/redução na eficiência

(9.2.2.6) Explique

Total capture in 2023 increased from 397 Mm³ to 496.7 Mm³ and this difference is mainly due to the increase in the amount of non-operational water and water captured and made available for external use (resource captured for the purpose of supplying communities close to Vale's operations). Despite this increase in total capture, the volume of water used in operations decreased from 137 Mm³ to 108.9 Mm³.

Total de descarga

(9.2.2.1) Volume (megalitros/ano)

428900

(9.2.2.2) Comparação com o ano de reporte anterior

Selecione de:

☑ Maior

(9.2.2.3) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Mudança na metodologia de registro

(9.2.2.4) Previsão para cinco anos

Selecione de:

☑ Igual

(9.2.2.5) Principal motivo da previsão

Selecione de:

☑ Aumento/redução na eficiência

(9.2.2.6) Explique

Total discharges in 2023 increased from 298.8 Mm³ to 428.9 Mm³ In 2023, the total volume of water discharged increased due to the change in methodology. Previously, waste water was only the discharge of industrial and sanitary effluents. However, in order to comply with the ICMM metrics, of which we are signatories (ICMM_2023_guidance_water-reporting_2ed), this item includes water sent unused directly to the environment, in addition to water collected and made available for

external use. Future volumes are expected to stabilize with the implementation of more water efficiency measures.In addition, water discharged into the environment increased due to the increase in the amount of water from the non-operational portion.

Consumo total

(9.2.2.1) Volume (megalitros/ano)

67800

(9.2.2.2) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.2.2.3) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Investimento em tecnologia/processo com inteligência hídrica

(9.2.2.4) Previsão para cinco anos

Selecione de:

☑ Menor

(9.2.2.5) Principal motivo da previsão

Selecione de:

☑ Investimento em tecnologia/processo com inteligência hídrica

(9.2.2.6) Explique

Total consumption in 2023 decreased from 72 Mm³ to 67.8 Mm³.The total water consumption for 2023 was managed through significant investments in water-smart technologies and processes. We achieved a high rate of water recycling, with 84% of the total demand being met through recycled water, 1% from sustainable sources, and 15% from conventional sources. This strategic approach has allowed us to reduce fresh water consumption while supporting increased business activities. For the future, we aim to maintain or slightly decrease water consumption levels through continued investments in water efficiency and recycling technologies.

[Linha fixa]

(9.2.4) Indique se a água é captada em áreas com estresse hídrico, indique o volume, como ele se compara com o ano de reporte anterior e quais são as previsões de variação.

(9.2.4.1) As captações provêm de áreas com estresse hídrico

Selecione de:

☑ Sim

(9.2.4.2) Volume captado em áreas com estresse hídrico (em mega litros)

14800

(9.2.4.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Igual

(9.2.4.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Mudança na metodologia de registro

(9.2.4.5) Previsão para cinco anos

Selecione de:

☑ Menor

(9.2.4.6) Principal motivo da previsão

Selecione de:

☑ Aumento/redução na eficiência

(9.2.4.7) % do total de captação em áreas com estresse hídrico

2.98

(9.2.4.8) Ferramenta de identificação

Selecione todos os aplicáveis

☑ WRI Aqueduct

☑ Outro, especifique **:**(Indicator 6.4.2. of the UN 2030 Agenda FAO (Food and Agriculture Organization of the United Nations)

(9.2.4.9) Explique

In 2023, the methodology for assessing water stress areas was made by using the WRI Aqueduct and Indicator 6.4.2. UN of the 2030 Agenda. According to the WRI Aqueduct, only our production unit located in Oman is identified as operating in a water-stressed area. However, it is important to note that the Oman plant utilizes a desalination process for water sourcing, which significantly mitigates the impact of water scarcity. On the other hand, the UN-FAO Indicator 6.4.2 allows a better regional assessment by classifying water stress with data on catchments and availability for use in the analyzed watershed. It is calculated from the ratio between the total fresh water withdrawn in the watershed and the total water resources available for use (Defined by the formula EH TFWW / (TRWR - EFR), where: EH Water stress level, given in %; TFWW Total fresh water abstracted; TRWR Total renewable freshwater resources, including surface water EFR Environmental flows (water required for aquatic life), in m³/s.). We delimit and analyze our entire area of influence – in the sub-basins where we operate. The percentage of our total freshwater withdrawals are classified as follows: critical (12%); high (2%); medium (9%); low (30%), and; no stress (46%). About 1% was excluded from the analysis because they were operations with negligible water use or because they were paralyzed operations. The units identified as experiencing water stress will be reported based on the findings of the UN-FAO Indicator 6.4.2, as Vale continuously strives to improve its water resource usage data. The increase compared to the previous year is mainly due to the change in methodology. We adopted the results of this analysis to define the new freshwater reduction targets. For those regions classified as high or critical levels of water stress, there will be bolder reduction percentages.
[Linha fixa]

(9.2.7) Forneça os dados do total de captação de água por fonte.

Água doce de superfície, incluindo águas de chuva, brejos, rios e lagos

(9.2.7.1) Relevância

Selecione de:

☑ Relevante

(9.2.7.2) Volume (megalitros/ano)

76700

(9.2.7.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.2.7.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Aumento/redução na eficiência

(9.2.7.5) Explique

Of a total of 108,900 megaliters collected for use in operations, approximately 25,400 megaliters are groundwater, 76,700 are surface and rainwater, and 6,800 are thirds. For the amount of non-operational water, the total is groundwater. Surface water is relevant since the activity depends on water to produce, whether in human consumption, processing and environmental controls. Recognizing its importance, the company has set targets for reducing freshwater water use. So, in this way, Vale has made several actions: increase of water reuse, implement new technologies, expand monitoring of the resource, reduce losses, among others. These efforts are aimed at reducing the environmental impact of mining operations and ensuring the sustainable use of water resources. By prioritizing responsible water management, the company is committed to contributing to a more sustainable future for all.

Água salobra de superfície/água do mar

(9.2.7.1) Relevância

Selecione de:

☑ Não relevante

(9.2.7.5) Explique

The desalination water that is collected comes from a third party, therefore, it is being considered in the Third party sources item.

Água subterrânea – renovável

(9.2.7.1) Relevância

Selecione de:

☑ Relevante

(9.2.7.2) Volume (megalitros/ano)

413200

(9.2.7.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.2.7.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Mudança na metodologia de registro

(9.2.7.5) Explique

Of a total of 108,900 megaliters captured for use in operations, around 25,400 megaliters are groundwater.(2022 -28,100). This source is relevant because it represents 23% of the total water withdrawn for operational processes... Future volumes are expected to decline as we implement reduction measures to meet our 2030 water reduction targets. We are continually improving our approach and will review water targets in the coming years to ensure we balance potential increases in production with water withdrawals, ensuring greater efficiency and ultimately decreasing water intensity.

Água subterrânea – não renovável

(9.2.7.1) Relevância

Selecione de:

☑ Não relevante

(9.2.7.5) Explique

Explanation of why groundwater - non-renewable is not relevant: We do not draw groundwater from non-renewable sources. This approach is not expected to change in the near future, so the non-renewable groundwater reported will remain the same.

Água produzida/arrastada

(9.2.7.1) Relevância

Selecione de:

☑ Não relevante

(9.2.7.5) Explique

The amount of water produced or renewed used in our operations is irrelevant (around 0.1% of the total withdrawal). The expectation is that this number will increase considerably from 2026 on with the entry of some projects and partnerships.

Fontes terceirizadas

(9.2.7.1) Relevância

Selecione de:

☑ Relevante

(9.2.7.2) Volume (megalitros/ano)

6800

(9.2.7.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Maior

(9.2.7.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Aumento/redução na eficiência

(9.2.7.5) Explique

Third-party sources are relevant because some of our operations use water from public services for human consumption. Compared to the previous year, we had a 6% increase in third-party water (2022 was 6.4 and 2023 was 6.8). Part of this number comes from the capture of the OMAN unit, which purchases desalinated water, that is, part of this water is from a sustainable source.uIn addition, the Tubarão unit has a project to replace third-party water from conventional sources with third-party water from renewable sources.
[Linha fixa]

(9.2.8) Forneça os dados do total de descarga de águas por destino.

Água doce de superfície

(9.2.8.1) Relevância

Selecione de:

☑ Relevante

(9.2.8.2) Volume (megalitros/ano)

385900

(9.2.8.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Maior

(9.2.8.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Mudança na metodologia de registro

(9.2.8.5) Explique

In 2022, industrial and sanitary effluent discharges were 40 Mm³, while in 2023 the same discharges were 41.1 Mm³, a very low variation. The discharge of non-operational water (water sent unused to the environment and sent to third parties) was the main reason for the increase in volume compared to the previous year, rising from a total of 181.7 Mm³ to 385.9 Mm³.

Água salobra de superfície/água do mar

(9.2.8.1) Relevância

Selecione de:

☑ Não relevante

(9.2.8.5) Explique

It is not relevant because we do not discharge any effluent into brackish surface water or seawater. And we don't expect to have this type of discharge in the near future.

Água subterrânea

(9.2.8.1) Relevância

Selecione de:

☑ Não relevante

(9.2.8.5) Explique

It is not relevant because we do not discharge effluents into groundwater. In the future, Vale will invest in research aimed at artificially recharging aquifers and one of the sources may be treated effluents.

Destinos de terceiros

(9.2.8.1) Relevância

Selecione de:

☑ Relevante

(9.2.8.2) Volume (megalitros/ano)

43000

(9.2.8.3) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.2.8.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Outro, especifique **:**Transfer of responsibility to users

(9.2.8.5) Explique

After Brumadinho, Vale drilled wells and built water treatment systems for the affected populations. Initially, all drilling and collections were in Vale's name. However, between 2022 and 2023, there was a reduction in the volume of water supplied to third parties because Vale amended the Granting Ordinances for the collection sources, transferring responsibility for the source to users. Thus, after alignment with the Credit team, it was decided that these cases would no longer be reported in the indicator. The expectation is that there will be a gradual reduction in the volume of water supplied to third parties by the Sanitation Management, as the grants are transferred from Vale's name to users.
[Linha fixa]

(9.2.9) Indique, nas suas operações diretas, o(s) nível(is) mais alto(s) em que as descargas são tratadas.

Tratamento terciário

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Relevante

(9.2.9.2) Volume (megalitros/ano)

5600

(9.2.9.3) Comparação do volume tratado com o do ano de reporte anterior

Selecione de:

☑ Muito mais alto

(9.2.9.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Investimento em tecnologia/processo com inteligência hídrica

(9.2.9.5) Porcentagem de unidades/instalações/operações a que esse volume se aplica

Selecione de:

☑ 100%

(9.2.9.6) Explique

From 2022 to 2023, the volume increased from 0.08 Mm³ to 5.6 Mm³, and this significant difference is due to improvements in treatment systems aimed at greater quality control. In addition, investments have been made in regulations and training on hydrometric monitoring, enabling operational professionals to measure their uses and discharges more accurately. Also, many of the secondary treatments are now tertiary, due to the addition of a physical/chemical stage for metal decantation. The operations in Brazil comply with the CONAMA 430/2011 standard, and in some cases have more restrictive local regulations, as is the case for the following Brazilian states and their respective regulations: Minas Gerais, DELIBERAÇÃO NORMATIVA CONJUNTA COPAM-CERH/MG Nº 8/2022;Espírito Santo, RESOLUÇÃO COMDEMA Nº 02, DE 5 DE JUNHO DE 1991; Rio de Janeiro, NT-202.R-10 INEA. International operations comply with the regulations of the respective operating countries, according to: Canada, Metal and Diamond Mining Effluent Regulations (SOR/2002-222); Japan, National Effluent Standard; Indonesia, Government Regulation No. 82/2001; Malaysia, NATIONAL WATER QUALITY STANDARDS; United Kingdom of Great Britain and Northern Ireland, The Water Supply (Water Quality) Regulations 2016, nº 614.

Tratamento secundário

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Relevante

(9.2.9.2) Volume (megalitros/ano)

1200

(9.2.9.3) Comparação do volume tratado com o do ano de reporte anterior

Selecione de:

☑ Menor

(9.2.9.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Investimento em tecnologia/processo com inteligência hídrica

(9.2.9.5) Porcentagem de unidades/instalações/operações a que esse volume se aplica

Selecione de:

☑ 100%

(9.2.9.6) Explique

There was a reduction in volume from 5.3 Mm³ in 2022 to 1.2 Mm³ in 2023, mainly due to the fact that many of the secondary treatments are now tertiary as there was the addition of a physical/chemical stage for metal decantation. The operations in Brazil comply with the CONAMA 430/2011 standard, and in some cases have more restrictive local regulations, as is the case for the following Brazilian states and their respective regulations: Minas Gerais, DELIBERAÇÃO NORMATIVA CONJUNTA COPAM-CERH/MG Nº 8/2022; Espírito Santo, RESOLUÇÃO COMDEMA Nº 02, DE 5 DE JUNHO DE 1991; Rio de Janeiro, NT-202.R- 10 INEA. International operations comply with the regulations of the respective operating countries, according to: Canada, Metal and Diamond Mining Effluent Regulations (SOR/2002-222); Japan, National Effluent Standard; Indonesia, Government Regulation No. 82/2001; Malaysia, NATIONAL WATER QUALITY STANDARDS; United Kingdom of Great Britain and Northern Ireland, The Water Supply (Water Quality) Regulations 2016, nº 614.

Apenas tratamento primário

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Relevante

(9.2.9.2) Volume (megalitros/ano)

30800

(9.2.9.3) Comparação do volume tratado com o do ano de reporte anterior

Selecione de:

☑ Menor

(9.2.9.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Investimento em tecnologia/processo com inteligência hídrica

(9.2.9.5) Porcentagem de unidades/instalações/operações a que esse volume se aplica

Selecione de:

☑ 100%

(9.2.9.6) Explique

There was a reduction in volume from 34.9 Mm³ in 2022 to 30.8 Mm³. Although the total effluent has increased, a large part of the effluent is now being treated with secondary or tertiary treatment, with a decrease in the volume of effluent treated only with primary treatment. Considering the CDP criterion that, in Vale, the drainage of rainwater directed to the control system is considered and sedimentation occurs there. These effluents can be used in operations or are returned to the environment after primary treatment. The operations in Brazil comply with the CONAMA 430/2011 standard, and in some cases have more restrictive local regulations, as is the case for the following Brazilian states and their respective regulations: Minas Gerais, DELIBERAÇÃO NORMATIVA CONJUNTA COPAM-CERH/MG Nº 8/2022; Espírito Santo, RESOLUÇÃO COMDEMA Nº 02, DE 5 DE JUNHO DE 1991; Rio de Janeiro, NT-202.R- 10 INEA. International operations comply with the regulations of the respective operating countries, according to: Canada, Metal and Diamond Mining Effluent Regulations (SOR/2002-222); Japan, National Effluent Standard; Indonesia, Government Regulation No. 82/2001; Malaysia, NATIONAL WATER QUALITY STANDARDS; United Kingdom of Great Britain and Northern Ireland, The Water Supply (Water Quality) Regulations 2016, nº 614.

Descarga no meio ambiente natural sem tratamento

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Relevante

(9.2.9.2) Volume (megalitros/ano)

391400

(9.2.9.3) Comparação do volume tratado com o do ano de reporte anterior

Selecione de:

☑ Maior

(9.2.9.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Aumento/redução nas atividades de negócios

(9.2.9.5) Porcentagem de unidades/instalações/operações a que esse volume se aplica

Selecione de:

☑ 100%

(9.2.9.6) Explique

The water destined for the environment without treatment is of high quality and does not require additional treatment, given that it comes from an underground source.The volume of water withdrawn and not used comes from underground sources (lowering of the water level) and, from 2022 to 2023, this volume increased from 146000 ML/y to 391400 ML/y due to the increase in the portion of non-operational water. Vale meets local regulatory agencies to ensure that no discharge leaves the company's boundaries without the requested treatment. The operations in Brazil comply with the CONAMA 430/2011 standard, and in some cases have more restrictive local regulations, as is the case for the following Brazilian states and their respective regulations: Minas Gerais, DELIBERAÇÃO NORMATIVA CONJUNTA COPAM-CERH/MG Nº 8/2022; Espírito Santo, RESOLUÇÃO COMDEMA Nº 02, DE 5 DE JUNHO DE 1991; Rio de Janeiro, NT-202.R- 10 INEA. International operations comply with the regulations of the respective operating countries, according to: Canada, Metal and Diamond Mining Effluent Regulations (SOR/2002-222); Japan, National Effluent Standard; Indonesia, Government Regulation No. 82/2001; Malaysia, NATIONAL WATER QUALITY STANDARDS; United Kingdom of Great Britain and Northern Ireland, The Water Supply (Water Quality) Regulations 2016, nº 614.

Descarga em terceiros sem tratamento

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Relevante

(9.2.9.2) Volume (megalitros/ano)

43000

(9.2.9.3) Comparação do volume tratado com o do ano de reporte anterior

Selecione de:

☑ Menor

(9.2.9.4) Motivo principal para a comparação com o ano de reporte anterior

Selecione de:

☑ Aumento/redução nas atividades de negócios

(9.2.9.5) Porcentagem de unidades/instalações/operações a que esse volume se aplica

Selecione de:

☑ 100%

(9.2.9.6) Explique

Vale collects water to make it available to the population and sends it to the local distributor, and this outsourced company treats the water sent by Vale. After Brumadinho, Vale drilled wells and built water treatment systems for the affected populations. Initially, all drilling and collections were in Vale's name. However, between 2022 and 2023, there was a reduction in the volume of water supplied to third parties (113 Mm³ to 43 Mm³) because Vale changed the Granting Ordinances for the collection sources, transferring responsibility for the source to the users. Thus, after alignment with the Credit team, it was decided that these cases would no longer be reported in the indicator. The expectation is that there will be a gradual reduction in the volume of water supplied to third parties by the Sanitation Management, as the grants are transferred from Vale's name to the users. The operations in Brazil comply with the CONAMA 430/2011 standard, and in some cases have more restrictive local regulations, as is the case for the following Brazilian states and their respective regulations: Minas Gerais, DELIBERAÇÃO NORMATIVA CONJUNTA COPAM-CERH/MG Nº 8/2022; Espírito Santo, RESOLUÇÃO COMDEMA Nº 02, DE 5 DE JUNHO DE 1991; Rio de Janeiro, NT-202.R- 10 INEA. International operations comply with the regulations of the respective operating countries, according to: Canada, Metal and Diamond Mining Effluent Regulations

(SOR/2002-222); Japan, National Effluent Standard; Indonesia, Government Regulation No. 82/2001; Malaysia, NATIONAL WATER QUALITY STANDARDS; United Kingdom of Great Britain and Northern Ireland, The Water Supply (Water Quality) Regulations 2016, nº 614.

Outros

(9.2.9.1) Relevância do nível de tratamento para a descarga

Selecione de:

☑ Não relevante

(9.2.9.6) Explique

Vale does not treat water using any specific treatment technique and, therefore, this item (Other) is considered not relevant.
[Linha fixa]

(9.2.10) Forneça detalhes das emissões de nitratos, fosfatos, pesticidas e outras substâncias prioritárias para a água da organização no ano de reporte.

(9.2.10.1) Emissões para a água no ano de reporte (toneladas métricas)

23.36

(9.2.10.2) Categorias de substâncias incluídas

Selecione todos os aplicáveis

☑ Nitratos

☑ Fosfatos

(9.2.10.4) Explique

In accordance with national regulatory guidelines (defined by CONAMA 430 in Brazil, Metal and Diamond Mining Effluent Regulations (SOR/2002-222) in Canada, National Effluent Standard in Japan, Government Regulation No. 82/2001 in Indonesia, National Water Quality Standards in Malaysia, Water Supply (Water Quality) Regulations 2016 No. 614 in the United Kingdom of Great Britain and Northern Ireland), we carefully monitor and assess the average concentration rates of Nitrate

and Total Phosphorus. According to Brazilian legislation, where we have most of our operations, there is no limit for the release of these parameters (CONAMA 430 in Brazil). However, when compared with the limits established for surface waters (CONAMA 357 in Brazil for class 1 rivers), the limits are 10 mg/L and 0.1 mg/L for nitrate and total phosphorus. In other words, even using a resolution under much more restrictive conditions, the regulatory limits are met.The concentrations of Nitrate and Total Phosphorus were found within the regulatory limits, with average rates of 0.513 mg/L and 0.055 mg/L, respectively. As a result, we estimate that our company released approximately 21.09 tons of Nitrate and 2.27 tons of Total Phosphorus into water bodies throughout the reporting period, totaling 23.36 tons in the reporting year.
[Linha fixa]

(9.3) Nas suas operações diretas e na cadeia de valor a montante, qual é o número de instalações onde foram identificadas dependências, impactos, riscos e oportunidades substanciais relacionados à água?

Operações diretas

(9.3.1) Identificação de instalações na etapa da cadeia de valor

Selecione de:
☑ Sim, avaliamos esta etapa da cadeia de valor, mas não identificamos nenhuma instalação com dependências, impactos, riscos ou oportunidades relacionados à água

(9.3.2) Número total de instalações identificadas

5

(9.3.3) % de instalações em operações diretas que isso representa

Selecione de:
☑ 1-25

(9.3.4) Explique

Until 2021, we used the WRIAqueduct tool, which helped in the analysis of Vale's water risks and, as a complement to the analyses, the FAO methodology was also used. The tool provides water risk mapping on a global scale to identify the impacts of river flooding due to urban damage, the occurrence of floods and the severity of droughts, and the populations affected by these situations. With it, it is also possible to correlate the water use of our operating units with the degree of risk indicated by the Aqueduct. In order to continuously improve its water risk assessment, Vale also adopted in 2022 Indicator 6.4.2 of the United Nations 2030 Agenda as a base point. This indicator shows whether there is water stress in the analyzed basin. It is calculated from the ratio between the total fresh water withdrawn in the

watershed and the total water resources available for use. 5 of the 37 operating units (14%) were identified as exposed to substantive water risk. Vale's water risk management actions and initiatives are local and global in nature, and involve the review and improvement of governance processes, establishment of new policies, application of the HIRA and updating of the units' master plans, in addition to alignment with the principles established by the ICMM (International Council on Mining and Metal).

Cadeia de valor upstream

(9.3.1) Identificação de instalações na etapa da cadeia de valor

Selecione de:

☑ Não, não avaliamos essa etapa da cadeia de valor para instalações com dependências, impactos, riscos e oportunidades relacionados à água, mas planejamos fazê-lo nos próximos 2 anos

(9.3.4) Explique

In 2022 and 2023, we have established a partnership with a specialized consultancy to identify our suppliers and classify them into categories based on the United Nations Standard Products and Services Code. Subsequently, we created a criticality matrix that encompasses potential ESG impacts, such as those related to water and effluent. This matrix systematically organizes the identified risks, considering their probability and potential impact level. Therefore, we have gained a comprehensive understanding of the socio-environmental implications of our supply chain, highlighting the potential risks of legal and reputational coresponsibility and defining the criticality level for each supplier. Currently, Vale is developing specific and appropriate management initiatives that align with the criticality classification of each supplier. Thus, we expect in the couple next years to have tools and capacity to assess our value-chain stage for facilities – as regards to their risks, impacts and dependencies on water-related issues.
[Linha fixa]

(9.3.1) Para cada instalação mencionada em 9.3., dê as coordenadas, os dados de contabilização da água e uma comparação com o ano de reporte anterior.

Row 1

(9.3.1.1) Número de referência da instalação

Selecione de:

☑ Instalação 1

(9.3.1.3) Estágio da cadeia de valor

Selecione de:

☑ Operações diretas

(9.3.1.4) Dependências, impactos, riscos e/ou oportunidades identificados nesta instalação

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(9.3.1.5) Captações ou descargas no ato de reporte

Selecione de:

☑ Sim, captações e descargas

(9.3.1.7) País/área e Bacia hidrográfica

Bolívia (Estado Plurinacional da)

☑ Outro, especifique **:**Itacaiúnas River watershed

(9.3.1.8) Latitude

-6.059807

(9.3.1.9) Longitude

-50.167448

(9.3.1.10) Localizada em área de estresse hídrico

Selecione de:

☑ Sim

(9.3.1.13) Total de captação de água nesta instalação (megalitros)

13382

(9.3.1.14) Comparação da captação total com o ano de reporte anterior

Selecione de:

☑ Maior

(9.3.1.15) Captações de água doce de superfície, incluindo as águas da chuva, brejos, rios e lagos

1186

(9.3.1.16) Captação de água salobra de superfície/água do mar

0

(9.3.1.17) Captação de águas subterrâneas – renovável

12196

(9.3.1.18) Captação de água subterrânea – não-renovável

0

(9.3.1.19) Captação de água produzida/arrastada

0

(9.3.1.20) Captação de fontes terceirizadas

0

(9.3.1.21) Total de descargas de água nesta instalação (megalitros)

11128

(9.3.1.22) Comparação da descarga total com o ano de reporte anterior

Selecione de:

☑ Maior

(9.3.1.23) Descargas em água doce superficial

11128

(9.3.1.24) Descargas em água salobra de superfície/água do mar

0

(9.3.1.25) Descargas em águas subterrâneas

0

(9.3.1.26) Descargas em destinos terceirizados

0

(9.3.1.27) Consumo de água total nesta instalação (megalitros)

2254

(9.3.1.28) Comparação do consumo total com o ano de reporte anterior

Selecione de:

☑ Maior

(9.3.1.29) Explique

From 2022 to 2023, total water withdrawals, discharges and consumption increased, respectively, from 4,355 ML to 13,382 ML, 2,501 ML to 11,128 ML and 1,854 ML to 2,254 ML. The volumes were obtained from direct measurements. The increase in withdrawals and discharges is mainly due to an adaptation in the understanding of the indicator's composition, to comply with the guidelines of the ICMM Good Practice Guide on Water Reporting. The adaptation aims to standardize and improve the quality and consistency of corporate water management and reporting. In the previous year, water withdrawals considered only operational water. In the current year, withdrawals are the sum of operational water, unused water sent directly to the environment and water sent to third parties. Regarding operational water (water used directly in operations), there was a 10% increase in its use (4,355 ML in 2022 compared to 4,769 ML in 2023). The increase in water use at this unit was due to

a temporary hydraulic change, which made it impossible to use reused water at its maximum capacity. In addition, due to the low rainfall in the area in 2023, the use of rainwater to moisten the roads was reduced. The risk identified is related to its location in areas of water stress, and therefore subject to possible water shortages. The opportunity concerns the implementation of reused water to replace the current fresh water in operations and the use of polymers to reduce water use in particulate control.

Row 2

(9.3.1.1) Número de referência da instalação

Selecione de:

☑ Instalação 2

(9.3.1.3) Estágio da cadeia de valor

Selecione de:

☑ Operações diretas

(9.3.1.4) Dependências, impactos, riscos e/ou oportunidades identificados nesta instalação

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(9.3.1.5) Captações ou descargas no ato de reporte

Selecione de:

☑ Sim, captações e descargas

(9.3.1.7) País/área e Bacia hidrográfica

Afeganistão

☑ Outro, especifique **:**Rio Doce Basin

(9.3.1.8) Latitude

-19.627099

(9.3.1.9) Longitude

-43.250624

(9.3.1.10) Localizada em área de estresse hídrico

Selecione de:

☑ Sim

(9.3.1.13) Total de captação de água nesta instalação (megalitros)

14492

(9.3.1.14) Comparação da captação total com o ano de reporte anterior

Selecione de:

☑ Menor

(9.3.1.15) Captações de água doce de superfície, incluindo as águas da chuva, brejos, rios e lagos

6530

(9.3.1.16) Captação de água salobra de superfície/água do mar

0

(9.3.1.17) Captação de águas subterrâneas – renovável

7962

(9.3.1.18) Captação de água subterrânea – não-renovável

0

(9.3.1.19) Captação de água produzida/arrastada

0

(9.3.1.20) Captação de fontes terceirizadas

0

(9.3.1.21) Total de descargas de água nesta instalação (megalitros)

5575

(9.3.1.22) Comparação da descarga total com o ano de reporte anterior

Selecione de:

☑ Muito mais alto

(9.3.1.23) Descargas em água doce superficial

5575

(9.3.1.24) Descargas em água salobra de superfície/água do mar

0

(9.3.1.25) Descargas em águas subterrâneas

0

(9.3.1.26) Descargas em destinos terceirizados

0

(9.3.1.27) Consumo de água total nesta instalação (megalitros)

8917

(9.3.1.28) Comparação do consumo total com o ano de reporte anterior

Selecione de:

☑ Maior

(9.3.1.29) Explique

From 2022 to 2023, total water withdrawals, discharges and consumption increased, respectively, from 9,040 ML para 14,492 ML, 172 ML para 5,575 ML and 8,868 ML para 8,917 ML. The volumes were obtained from direct measurements. The increase in discharge is mainly due to an adaptation in the understanding of the indicator's composition, to comply with the new ICMM guidance on water reporting. The adaptation aims to improve the quality and consistency of corporate water management and reporting, as it now includes non-operational and unused water sent directly to the environment, operational water and water sent to third parties. Regarding operational water (water used directly in operations), there was a 1% decrease in its use (9,040 ML in 2022 compared to 8,917 ML in 2023). The decrease in water usage in this unit was due to the use of reused water at its maximum capacity. The risk identified is related to its location in areas of water stress, and therefore subject to possible water shortages. The opportunity concerns the implementation of reused water to replace the current new water in operations.

Row 3

(9.3.1.1) Número de referência da instalação

Selecione de:

☑ Instalação 3

(9.3.1.3) Estágio da cadeia de valor

Selecione de:

☑ Operações diretas

(9.3.1.4) Dependências, impactos, riscos e/ou oportunidades identificados nesta instalação

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(9.3.1.5) Captações ou descargas no ato de reporte

Selecione de:

☑ Sim, captações e descargas

(9.3.1.7) País/área e Bacia hidrográfica

Afeganistão

☑ Outro, especifique **:**Rio Piracicaba

(9.3.1.8) Latitude

-19.946214

(9.3.1.9) Longitude

-43.240519

(9.3.1.10) Localizada em área de estresse hídrico

Selecione de:

☑ Sim

(9.3.1.13) Total de captação de água nesta instalação (megalitros)

383

(9.3.1.14) Comparação da captação total com o ano de reporte anterior

Selecione de:

☑ Muito mais baixo

(9.3.1.15) Captações de água doce de superfície, incluindo as águas da chuva, brejos, rios e lagos

209

(9.3.1.16) Captação de água salobra de superfície/água do mar

0

(9.3.1.17) Captação de águas subterrâneas – renovável

174

(9.3.1.18) Captação de água subterrânea – não-renovável

0

(9.3.1.19) Captação de água produzida/arrastada

0

(9.3.1.20) Captação de fontes terceirizadas

0

(9.3.1.21) Total de descargas de água nesta instalação (megalitros)

149

(9.3.1.22) Comparação da descarga total com o ano de reporte anterior

Selecione de:
☑ Maior

(9.3.1.23) Descargas em água doce superficial

149

(9.3.1.24) Descargas em água salobra de superfície/água do mar

0

(9.3.1.25) Descargas em águas subterrâneas

0

(9.3.1.26) Descargas em destinos terceirizados

0

(9.3.1.27) Consumo de água total nesta instalação (megalitros)

235

(9.3.1.28) Comparação do consumo total com o ano de reporte anterior

Selecione de:

☑ Muito mais baixo

(9.3.1.29) Explique

From 2022 to 2023, the total water withdrawals and consumption decreased, respectively, from 717 ML to 383 ML and 715 ML to 235 ML. While the total water discharges increased 2 ML to 149 ML. The increase in discharge is mainly due to an adaptation in the understanding of the indicator's composition, to comply with the new ICMM guidance on water reporting. The adaptation aims to improve the quality and consistency of corporate water management and reporting, as it now includes non-operational and unused water sent directly to the environment, operational water and water sent to third parties. Regarding operational water (water used directly in operations), there was a 67% decrease in its use (717 ML in 2022 compared to 236 ML in 2023). The decrease in water usage in this unit was due to the use of reused water at its maximum capacity. The risk identified is related to its location in areas of water stress, and therefore subject to possible water shortages. The opportunity concerns the implementation of reused water to replace the current new water in operations.

Row 4

(9.3.1.1) Número de referência da instalação

Selecione de:

☑ Instalação 4

(9.3.1.3) Estágio da cadeia de valor

Selecione de:

☑ Operações diretas

(9.3.1.4) Dependências, impactos, riscos e/ou oportunidades identificados nesta instalação

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(9.3.1.5) Captações ou descargas no ato de reporte

Selecione de:

☑ Sim, captações e descargas

(9.3.1.7) País/área e Bacia hidrográfica

Afeganistão

☑ Outro, especifique **:**Rio Piracicaba

(9.3.1.8) Latitude

-20.125958

(9.3.1.9) Longitude

-43.41633

(9.3.1.10) Localizada em área de estresse hídrico

Selecione de:

☑ Sim

(9.3.1.13) Total de captação de água nesta instalação (megalitros)

2844

(9.3.1.14) Comparação da captação total com o ano de reporte anterior

Selecione de:

☑ Muito mais alto

(9.3.1.15) Captações de água doce de superfície, incluindo as águas da chuva, brejos, rios e lagos

100

(9.3.1.16) Captação de água salobra de superfície/água do mar

0

(9.3.1.17) Captação de águas subterrâneas – renovável

2744

(9.3.1.18) Captação de água subterrânea – não-renovável

0

(9.3.1.19) Captação de água produzida/arrastada

0

(9.3.1.20) Captação de fontes terceirizadas

0

(9.3.1.21) Total de descargas de água nesta instalação (megalitros)

2417

(9.3.1.22) Comparação da descarga total com o ano de reporte anterior

Selecione de:

☑ Muito mais alto

(9.3.1.23) Descargas em água doce superficial

2417

(9.3.1.24) Descargas em água salobra de superfície/água do mar

0

(9.3.1.25) Descargas em águas subterrâneas

0

(9.3.1.26) Descargas em destinos terceirizados

0

(9.3.1.27) Consumo de água total nesta instalação (megalitros)

427

(9.3.1.28) Comparação do consumo total com o ano de reporte anterior

Selecione de:

☑ Maior

(9.3.1.29) Explique

From 2022 to 2023, the total water withdrawals, discharges and consumption increased, respectively, from 286 ML to 2844 ML, 31 ML to 2417 ML and 255 ML to 427 ML. The increase in withdrawal and discharge is mainly due to an adaptation in the understanding of the indicator's composition, to comply with the new ICMM guidance on water reporting. The adaptation aims to improve the quality and consistency of corporate water management and reporting, as it now includes non-operational and unused water sent directly to the environment, operational water and water sent to third parties. Regarding operational water (water used directly in operations), there was a 73% increase in its use (286 ML in 2022 compared to 494 ML in 2023). The increase in water use in this unit was due to better accounting and monitoring of water to control particulate matter and the greater demand for this water, given that in 2023 there was greater wind intensity. The risk identified is related to its location in areas of water stress, and therefore subject to possible water shortages. The opportunity concerns the implementation of reused water to replace the current new water in operations.

Row 5

(9.3.1.1) Número de referência da instalação

Selecione de:

☑ Instalação 5

(9.3.1.3) Estágio da cadeia de valor

Selecione de:

☑ Operações diretas

(9.3.1.4) Dependências, impactos, riscos e/ou oportunidades identificados nesta instalação

Selecione todos os aplicáveis

☑ Riscos

☑ Oportunidades

(9.3.1.5) Captações ou descargas no ato de reporte

Selecione de:

☑ Sim, captações e descargas

(9.3.1.7) País/área e Bacia hidrográfica

Afeganistão

☑ Outro, especifique **:**Rio Piracicaba Basin

(9.3.1.8) Latitude

-20.257595

(9.3.1.9) Longitude

-43.524328

(9.3.1.10) Localizada em área de estresse hídrico

Selecione de:

☑ Sim

(9.3.1.13) Total de captação de água nesta instalação (megalitros)

387

(9.3.1.14) Comparação da captação total com o ano de reporte anterior

Selecione de:

☑ Muito mais baixo

(9.3.1.15) Captações de água doce de superfície, incluindo as águas da chuva, brejos, rios e lagos

0

(9.3.1.16) Captação de água salobra de superfície/água do mar

0

(9.3.1.17) Captação de águas subterrâneas – renovável

387

(9.3.1.18) Captação de água subterrânea – não-renovável

0

(9.3.1.19) Captação de água produzida/arrastada

0

(9.3.1.20) Captação de fontes terceirizadas

0

(9.3.1.21) Total de descargas de água nesta instalação (megalitros)

26

(9.3.1.22) Comparação da descarga total com o ano de reporte anterior

Selecione de:

☑ Menor

(9.3.1.23) Descargas em água doce superficial

26

(9.3.1.24) Descargas em água salobra de superfície/água do mar

0

(9.3.1.25) Descargas em águas subterrâneas

0

(9.3.1.26) Descargas em destinos terceirizados

0

(9.3.1.27) Consumo de água total nesta instalação (megalitros)

361

(9.3.1.28) Comparação do consumo total com o ano de reporte anterior

Selecione de:

☑ Muito mais baixo

(9.3.1.29) Explique

From 2022 to 2023, the total water withdrawals, discharges and consumption decrease, respectively, from 1155 ML to 387 ML. 30 ML to 26 ML and 1125 ML to 361 ML. Regarding operational water (water used directly in operations), there was a 66% decrease in its use (1,155 ML in 2022 compared to 387 ML in 2023). The decrease in water usage in this unit was due to the use of reused water at its maximum capacity. The risk identified is related to its location in areas of water stress, and therefore subject to possible water shortages. The opportunity concerns the implementation of reused water to replace the current new water in operations. [Adicionar linha]

(9.3.2) Para as instalações nas suas operações diretas mencionadas em 9.3.1, que proporção dos dados de contabilização da água foi verificada por terceiros?

Captação de água – volume total

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Captação de água – volume por fonte

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Captação de água – qualidade por parâmetro padrão de qualidade da água

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Descarga de água – volume total

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Descarga de água – volume por destino

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Descargas de água – volume por nível de tratamento final

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Descargas de água – qualidade por parâmetros de qualidade da água padrão

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000

Consumo de água – volume total

(9.3.2.1) Porcentagem verificada

Selecione de:
☑ 76-100

(9.3.2.2) Norma de verificação utilizada

ISAE 3000
[Linha fixa]

(9.5) Dê um valor para a eficiência na captação total de água da organização.

(9.5.1) Receita (moeda)

41784000000

(9.5.2) Eficiência total na captação de água

84123.21

(9.5.3) Tendência futura prevista

Our global sustainability goals are aligned with the SDGs of the UN 2030 Agenda and the guidelines of the International Council on Mining and Metals. By 2025, we'll finalize the Reduction Plans for the operating units integrated with the financial planning. By 2030, we plan to invest a total of 57.4 million in operational water management. The company has announced a 2.2 billion investment plan between 2019 and 2027 to increase the use of filtration and dry stacking methods. [Linha fixa]

(9.10) A organização calcula as informações de intensidade hídrica para as atividades do setor de metais e mineração?

Selecione de:

☑ Sim

(9.10.1) Para os 5 principais produtos por receita, forneça as seguintes informações de intensidade associadas às atividades de metais e mineração.

Row 1

(9.10.1.1) Nome do produto

Iron Intensity changes over the last 2 years: reduction of 7.6%

(9.10.1.2) Numerador: Aspecto hídrico

Selecione de:

☑ Uso da água doce

(9.10.1.3) Denominador

Selecione de:

☑ Toneladas de minério processado

(9.10.1.4) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.10.1.5) Explique

In 2022, there was a 14% reduction in specific water use (m³ of new water per ton of production units). In 2023, there was a reduction of approximately 8%. The loss of efficiency is due to production adjustment factors and increased particulate emission controls, carried out through road spraying. By monitoring the water intensity per unit of production, we can track our performance and strive for continuous improvement. Our aim is to align with the Target 2030, which sets forth our commitment to reducing water intensity and optimizing water usage across our operations. Looking ahead, we anticipate a reduction in water intensity in alignment with the Target 2030. We have implemented measures and initiatives aimed at enhancing water efficiency, optimizing production processes, and exploring innovative solutions. Through these efforts, we are working towards minimizing our environmental footprint and ensuring a sustainable approach to water management in line with our long-term goals. With great effort, we achieved the 20% global reduction in the year 2021, nine years ahead of schedule, that is, we aim for the use of fresh water to continue to reduce each year. We have updated our 2030 target, which will take into account all river basins where we operate and will have specific objectives for each of our pillars. In addition to the results already achieved, we will focus our efforts on achieving an average reduction of another 7% in our specific use by 2030, considering more significant targets for units located in regions with high or critical levels of water stress. This update of the target will promote a cumulative reduction of 27% (base 2017) added to the result already achieved.

Row 2

(9.10.1.1) Nome do produto

Base metals. Intensity changes in the last 2 years: reduction of 36.9%

(9.10.1.2) Numerador: Aspecto hídrico

Selecione de:

☑ Uso da água doce

(9.10.1.3) Denominador

Selecione de:

☑ Toneladas de produto final

(9.10.1.4) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.10.1.5) Explique

In 2022, there was a 36.7% reduction in specific water use (m³ of new water per ton of production units). In 2023, there was a reduction of approximately 36.9%. The increase in efficiency is due to factors of optimizing measurements and training of the water balance and investments to increase reuse and reduce new water. By monitoring the water intensity per unit of production, we can track our performance and strive for continuous improvement. Our aim is to align with the Target 2030, which sets forth our commitment to reducing water intensity and optimizing water usage across our operations. Looking ahead, we anticipate a reduction in water intensity in alignment with the Target 2030. We have implemented measures and initiatives aimed at enhancing water efficiency, optimizing production processes, and exploring innovative solutions. Through these efforts, we are working towards minimizing our environmental footprint and ensuring a sustainable approach to water management in line with our long-term goals With great effort, we achieved the 20% global reduction in the year 2021, nine years ahead of schedule, that is, we aim for the use of fresh water to continue to reduce each year. We have updated our 2030 target, which will take into account all river basins where we operate and will have specific objectives for each of our pillars. In addition to the results already achieved, we will focus our efforts on achieving an average reduction of another 7% in our specific use by 2030, considering more significant targets for units located in regions with high or critical levels of water stress. This update of the target will promote a cumulative reduction of 27% (base 2017) added to the result already achieved.

Row 3

(9.10.1.1) Nome do produto

Pellets. Intensity changes in the last 2 years: m³/t - reduction of 2.8%

(9.10.1.2) Numerador: Aspecto hídrico

Selecione de:

☑ Uso da água doce

(9.10.1.3) Denominador

Selecione de:

☑ Toneladas de produto final

(9.10.1.4) Comparação com o ano de reporte anterior

Selecione de:

☑ Menor

(9.10.1.5) Explique

In 2022, there was a 10.2% increase in specific water use (m³ of new water per ton of production units). In 2023, there was a 2.8% reduction. The increase in efficiency is due to factors of optimizing measurements and training of the water balance and investments to increase reuse and reduce new water. By monitoring the water intensity per unit of production, we can track our performance and strive for continuous improvement. Our aim is to align with the Target 2030, which sets forth our commitment to reducing water intensity and optimizing water usage across our operations. Looking ahead, we anticipate a reduction in water intensity in alignment with the Target 2030. We have implemented measures and initiatives aimed at enhancing water efficiency, optimizing production processes, and exploring innovative solutions. Through these efforts, we are working towards minimizing our environmental footprint and ensuring a sustainable approach to water management in line with our long-term goals. With great effort, we achieved the 20% global reduction in the year 2021, nine years ahead of schedule, that is, we aim for the use of fresh water to continue to reduce each year. We have updated our 2030 target, which will take into account all river basins where we operate and will have specific objectives for each of our pillars. In addition to the results already achieved, we will focus our efforts on achieving an average reduction of another 7% in our specific use by 2030, considering more significant targets for units located in regions with high or critical levels of water stress. This update of the target will promote a cumulative reduction of 27% (base 2017) added to the result already achieved.
[Adicionar linha]

(9.13) Algum dos produtos da organização contém substâncias classificadas como de risco por alguma autoridade regulatória?

(9.13.1) Os produtos contêm substâncias de risco

Selecione de:

☑ Não

(9.13.2) Explique

The products in question are ferrous ores and base metals, and therefore they are not classified as hazardous according to the current regulatory bodies in the areas of operation of the company.
[Linha fixa]

(9.14) A organização classifica algum dos seus produtos e/ou serviços atuais como de baixo impacto hídrico?

(9.14.1) Produtos e/ou serviços classificados como de baixo impacto hídrico

Selecione de:
☑ Sim

(9.14.2) Definição utilizada para classificar o baixo impacto hídrico

Vale's business model has evolved to reduce its impact on water resources through two processes: wet concentration and natural moisture. According to SUPPA (2019), the choice between these methods depends on the types and grades of the minerals and their moisture content. • Natural moisture beneficiation occurs in conditions of high hematite mineral contents (they only require granulometric adjustment). This method reduces total water consumption by an average of 93% compared to wet concentration, and increases productivity due to resource savings, lower energy consumption, fewer production phases, less equipment, and simpler and safer operations. • Wet beneficiation occurs in conditions of high itabirite mineral contents (they need to be processed to achieve higher iron contents) and uses water in the concentration stage.

(9.14.4) Explique

By 2023, 69% of Vale's ore production utilized natural humidity, being of low water impact. Of the remaining 31%, about half of the tailings were filtered and disposed of dry, while only 15.5% required tailings to be deposited in dams. Vale considers Natural moisture beneficiation as a product with low water impact, as compared to processes in other units, the water intensity is lower, a 93% difference in water consumption.
[Linha fixa]

(9.15) A organização tem metas relacionadas à água?

Selecione de:
☑ Sim

(9.15.1) Indique se a organização tem metas relacionadas à poluição da água, à captação de água, aos serviços de WASH ou a outras categorias relacionadas à água.

Poluição da água

(9.15.1.1) Meta definida nesta categoria

Selecione de:

☑ Sim

Captação de água

(9.15.1.1) Meta definida nesta categoria

Selecione de:

☑ Sim

Serviços de água, saneamento e higiene (WASH)

(9.15.1.1) Meta definida nesta categoria

Selecione de:

☑ Não, mas planejamos fazê-lo nos próximos dois anos

(9.15.1.2) Explique

In 2021, Vale made a commitment to lift 500,000 people out of extreme poverty by 2030 – an initiative linked to SDG 1. This proposal has been constantly improved, based on dialogue with governments, corporations and civil society. And, based on the understanding of poverty as a multidimensional specificity, and on UNDP's methodology to measure multidimensional poverty, Vale adopted a specific approach for Multidimensional Family Monitoring, focused on 5 dimensions: education, income, health, nutrition and infrastructure. The issue of water security falls within the infrastructure dimension, with the following indicators: n. of homes without access to drinking water; and n. of homes without access to basic sanitation. With 8 other indicators of deprivation/violation, these make up the Multidimensional Poverty Index. In the coming years, Vale intends to enhance the water front of this goal, understanding that water security is a fundamental pillar in the fight against poverty.

Outros

(9.15.1.1) Meta definida nesta categoria

Selecione de:

☑ Não, mas planejamos fazê-lo nos próximos dois anos

(9.15.1.2) Explique

Vale's other water-related targets involve the monitoring of sensitive points related to poverty, directing efforts mainly towards the pillars of education, health and income generation for these identified people. Vale is focused on continuously improving water quality management at its units, and a thorough assessment is being conducted to define a classification matrix for the various points monitored. The idea is for the units to increase the frequency of monitoring at points considered to be more sensitive, in order to improve risk management at the company. The goal is expected to be announced within the next two years.
[Linha fixa]

(9.15.2) Forneça detalhes sobre suas metas relacionadas à água e o progresso alcançado.

Row 1

(9.15.2.1) Número de referência da meta

Selecione de:

☑ Meta 1

(9.15.2.2) Abrangência da meta

Selecione de:

☑ Na organização como um todo (somente nas operações diretas)

(9.15.2.3) Categoria da meta e Métrica quantitativa

Captação de água

☑ Outras captações de água, especifique **:**Product Water Intensity (m³/ton)

(9.15.2.4) Data em que a meta foi definida

01/01/2018

(9.15.2.5) Data de término do ano-base

12/31/2017

(9.15.2.6) Valor no ano-base

0

(9.15.2.7) Data de término do ano-alvo

12/31/2030

(9.15.2.8) Valor no ano final

27

(9.15.2.9) Valor no ano de reporte

19

(9.15.2.10) Status da meta no ano de reporte

Selecione de:

☑ Em andamento

(9.15.2.11) Porcentagem da meta alcançada com relação ao ano-base

70

(9.15.2.12) Tratados/iniciativas/quadros ambientais globais alinhados com essas metas ou suportados por ela

Selecione todos os aplicáveis

☑ Science-Based Targets for Nature

☑ Objetivos do Desenvolvimento Sustentável 6

(9.15.2.13) Explique a abrangência da meta e identifique eventuais exclusões

Our global sustainability goals are aligned with the Sustainable Development Goals (SDGs) of the United Nations (UN) 2030 Agenda and the guidelines of the International Council on Mining and Metals (ICMM). The 2030 Water Goal, launched in 2018, determined a 10% reduction in the specific use of freshwater compared to the 2017 base year. We updated our goal in 2022, which takes into account all river basins where we operate and includes specific objectives for each of our pillars. In addition to the result already achieved, we will focus our efforts on achieving an average reduction of more than 7% in our specific use by 2030, considering more specific goals for units located in regions with high or critical levels of water stress. This goal update will promote a cumulative reduction of 27% (2017 base year) added to the result already achieved. The scope of this goal is 100%, so there are no exclusions, as the goal covers the entire company. The priority of the goals is always in places.

(9.15.2.14) Plano para alcançar a meta e progresso realizado até o fim do ano de reporte

As part of the strategy to achieve the goal, the units must create a plan to reduce water use. In this study, 5 units were classified as units in a critical or high water stress (HE) area. For these units, a field diagnosis was carried out focusing on the operational processes that consume new water, as well as the maturity of water resources management (step by step methodology shown in the figure below). This Diagnosis identified a total of 157 opportunities to reduce water use, divided into 5 areas: management, operational control, processes, improvements and infrastructure. These units presented the first version of the reduction plan in June 2024. The next steps involve: - Development of the water use reduction curve, seeking to reach the 2030 target. - Development of the first version of the reduction plan for units in areas of medium, low and zero water stress. These steps will be completed in June 2025.

Row 2

(9.15.2.1) Número de referência da meta

Selecione de:

☑ Meta 2

(9.15.2.2) Abrangência da meta

Selecione de:

☑ Na organização como um todo (incluindo os fornecedores)

(9.15.2.3) Categoria da meta e Métrica quantitativa

Poluição da água

☑ Outras poluições da água, especifique **:**Number of critical environmental requirements in compliance

(9.15.2.4) Data em que a meta foi definida

01/01/2023

(9.15.2.5) Data de término do ano-base

12/31/2023

(9.15.2.6) Valor no ano-base

144

(9.15.2.7) Data de término do ano-alvo

12/31/2030

(9.15.2.8) Valor no ano final

98

(9.15.2.9) Valor no ano de reporte

64

(9.15.2.10) Status da meta no ano de reporte

Selecione de:
☑ Em andamento

(9.15.2.11) Porcentagem da meta alcançada com relação ao ano-base

174

(9.15.2.12) Tratados/iniciativas/quadros ambientais globais alinhados com essas metas ou suportados por ela

Selecione todos os aplicáveis

☑ Nenhum, nenhum alinhamento após a avaliação

(9.15.2.13) Explique a abrangência da meta e identifique eventuais exclusões

The target refers to ferrous operations in Brazil. Operations in Oman and Malaysia are not included, as well as Base Metals operations. The target is in its initial phase and was initially designed to meet the obligations of Brazilian operations.

(9.15.2.14) Plano para alcançar a meta e progresso realizado até o fim do ano de reporte

The 1st Line of Defense must periodically assess compliance with environmental conditions/obligations and keep evidence updated in the system that shows that environmental obligations and associated tasks have been/are being met, with the aim of demonstrating effective management. Action plans to meet environmental requirements are developed by the operational areas of each unit, with support from the corporate Environmental team. The Health, Safety and Environment area is responsible for consolidating the main KPIs collected in each operational unit, monitoring performance in relation to the target. At the end of the year, the results of the targets showed that the number of critical environmental requirements for Vale decreased by 55%.
[Adicionar linha]

C10. Desempenho ambiental – Plásticos

(10.1) A organização tem metas relacionadas ao plástico? Em caso positivo, de que tipo?

(10.1.1) Metas em vigor

Selecione de:

☑ Não, e não planejamos fazê-lo nos próximos dois anos

(10.1.3) Explique

Each operational unit develops its own Waste Management Program (internal procedure) adapted to its local context and culture. Consequently, each operational unit has specific targets to improve the eco-efficiency of the company's processes. These targets align with the following guidelines: • Operational units shall define and implement a Waste Management Program tailored to each local context. • Waste Management Programs shall establish priorities and goals based on the critical analysis of their production processes and their waste inventory. • Waste generation reduction shall be prioritized. • Sustainable waste disposal must be prioritized. • Reuse and recycling of waste shall be promoted whenever technically and economically feasible, aiming to create jobs, generate revenue, and provide social value, and citizenship benefits.
[Linha fixa]

(10.2) Indique se a organização se engaja nas seguintes atividades.

Produção/comercialização de polímeros plásticos (incluindo conversores de plástico)

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Produção/comercialização de produtos duráveis e/ou componentes plásticos (incluindo materiais mistos)

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Utilização de bens e/ou componentes de plásticos duráveis (incluindo materiais mistos)

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Produção/comercialização de embalagens plásticas

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Produção/comercialização de bens/produtos embalados em plástico

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Fornecimento/comercialização serviços que usam embalagens plásticas (por ex. serviços alimentares)

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Prestação de serviços de gestão de resíduos e/ou gestão da água

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Fornecimento de produtos e/ou serviços financeiros para atividades relacionadas com plásticos

(10.2.1) A atividade se aplica

Selecione de:

☑ Não

(10.2.2) Explique

N/A

Outras atividades não especificadas

(10.2.1) A atividade se aplica

Selecione de:

☑ Sim

(10.2.2) Explique

N/A
[Linha fixa]

C11. Desempenho ambiental – Biodiversidade

(11.1) Dentro dos limites de reporte, há alguma área geográfica, unidade de negócios ou projeto de mineração excluídos da divulgação?

Selecione de:

☑ Sim

(11.1.1) Indique as exclusões e descreva seu potencial para riscos relacionados à biodiversidade.

Row 1

(11.1.1.1) Exclusão

Selecione de:

☑ Projetos de mineração

(11.1.1.2) Descrição da exclusão

In this reporting year, seven complex sites were selected, covering the iron ore mines in Brazil that represent our largest production of this commodity and are located in the Atlantic Forest and Amazon biomes, as well as the PT Vale Indonesia (PTVI) nickel mine located in Indonesia, which represents the base metals site with significant impact on forests. These sites represent 100% of iron ore and 44% of nickel production in 2021. Each complex aggregates mines located in the same geographical region and are under the same management, which is why they are described here. This report excludes active mines that have less impact on forests (Canada) and mineral research areas (Peru, Chile, Serbia), as well as our logistics operations and industrial plants (Malawi, Japan, United Kingdom, Oma, Malaysia, China) and inoperative mines. Therefore, this report will not cover the Córrego do Feijão Mine (Brumadinho, Minas Gerais, Brazil - MG) as it is currently inactive with no other operational activities in progress. The project is focused on repairing the affected area by the dam failure and is currently under development.

(11.1.1.3) Potencial para riscos relacionados à biodiversidade

Selecione de:

☑ Potencial para riscos relacionados à biodiversidade avaliado, mas não reportado para o CDP

(11.1.1.4) Explique

With operations in more than 20 countries on five continents, Vale S. A. is one of the leading mining companies in the global market in iron ore, iron ore pellets, and nickel. The company also produces manganese, ferroalloys, copper, metals of the platinum group metal gold, silver, cobalt, and metallurgical and thermal coals. Operating this variety of raw materials requires an infrastructure that includes mineral exploration, administrative offices, and operational units connected by modern integrated logistics systems, comprising railroads, maritime terminals, and ports. Our operations today occupy around 890 km², with the main risks and direct and indirect impacts on biodiversity being associated with changes in natural environments and changes in land use, which alter the components of the physical environment, which in turn instead, serve as support for the elements of the biotic environment (flora and fauna). In 2015 Vale carried out an assessment at a company-wide level to map and classify the sensibility to biodiversity arising from site operations as a result of their location and interface with nature, updated in 2017. The analysis included nine categories of areas with relevant biodiversity value, according to global and national organizations (Key Biodiversity Areas - KBA, Protected Areas, Wilderness Areas, Hotspots, occurrence of Endangered Species IUCN, among others). We use a score to characterize the importance and sensibility of biodiversity, which generated the risk note. The areas with high and very high risks were considered priorities for managing impacts and risks, as well as for reporting. We use this classification to base our reports. In the last two years, we have reported on biodiversity-related impacts, risks, and opportunities for these priority areas under the CDP Forests (Brazil and PT Vale Indonesia operations). The sites will be approached to identify all the essential information related to biodiversity and forest management to be collected for reporting to our investors under CDP Forest. We aim to deepen our compilation of data each year to produce an increasingly complete and comprehensive report.
[Adicionar linha]

(11.2) Quais ações a organização adotou no ano de reporte para progredir com seus compromissos relacionados à biodiversidade?

(11.2.1) Ações tomadas no período de reporte para progredir com seus compromissos relacionados à biodiversidade

Selecione de:

☑ Sim, estamos adotando ações para progredir com nossos compromissos relacionados à biodiversidade

(11.2.2) Tipo de ação adotada para o progresso dos compromissos relacionados à biodiversidade

Selecione todos os aplicáveis

☑ Gestão do solo/água

☑ Gestão das espécies

☑ Proteção do solo/água

☑ Educação e conscientização

☑ Incentivos econômicos, de subsistência e outros

☑ Outro, especifique **:New reporting framework**

[Linha fixa]

(11.3) A organização usa indicadores de biodiversidade para monitorar o desempenho em suas atividades?

	A organização usa indicadores para monitorar o desempenho em biodiversidade?	Indicadores utilizados para monitorar o desempenho em biodiversidade
	Selecione de: ☑ Sim, utilizamos indicadores	*Selecione todos os aplicáveis* ☑ Indicadores de estado e benefícios ☑ Indicadores de pressão ☑ Indicadores de resposta

[Linha fixa]

(11.4) A organização vem realizando atividades dentro ou próximas a áreas importantes para a biodiversidade no ano de reporte?

Áreas legalmente protegidas

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Sim

(11.4.2) Explique

Part of the Carajás Complex area is situated within the Carajás National Forest, a protected area of sustainable use according to Brazilian legislation. The decree that created this forest allows for anthropogenic activities, including mining. This protected area corresponds to the IUCN Category VI. Our operations in the Iron Quadrangle - Minas Gerais state, Brazil (Paraopebas, Vargem Grande, and Mariana Complex) - interact with the Southern Environmental Protection Area (APA Sul). This area, too, is a protected area of sustainable use (IUCN Category V), and the creation decree allows for anthropogenic activities, including mining. Protected areas near or adjacent to our operations primarily consist of areas owned by Vale, such as Private Reserves of Natural Heritage (IUCN Category IV), some of which

have been established, and others are in the process of being created. These are strategically located near our operational units to ensure their effective management. Moreover, we also support other protected areas, such as the Campos Ferruginosos National Park (IUCN Category II), which was established in conjunction with the licensing of the S11D Eliezer Batista Complex. It's important to clarify that we consider the protected areas within a 10 km buffer from the operations to be adjacent. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

Sítios do Patrimônio Mundial da UNESCO

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Não

(11.4.2) Explique

In 2021, Vale publicly committed to not operate in UNESCO World Natural Heritage sites. It is important to note that the Vale Nature Reserve (RNV), a protected area owned by the company dedicated to preserving 23,000 hectares of remnants of the Atlantic Forest, is included in this. Additionally, the Sooretama Biological Reserve (REBio), an area protected by Vale in partnership with ICMBio, also falls within this category. Both reserves are part of the World Natural Heritage Site Reserves of the Atlantic Forest Discovery Coast and are recognized as Key Biodiversity Areas. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

O Homem da UNESCO e as Reservas da Biosfera

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Sim

(11.4.2) Explique

Our operations in the Quadrilátero Ferrífero - Minas Gerais state/Brazil (Paraopebas, Vargem Grande and Mariana Complex) have interference in the Espinhaço Range Biosphere Reserve.

Sítios Ramsar

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Não

(11.4.2) Explique

The mining complexes prioritized for this reporting do not overlap or are next to Ramsar Sites.

Áreas-chave para a biodiversidade

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Sim

(11.4.2) Explique

Part of the Carajás Complex area is situated within the Carajás National Forest, and this area overlaps with the Serra dos Carajás Key Biodiversity Area. The Mariana Complex, São Luis (Port and Railroad), Sulawesi (Mine)have portions that either overlap with or are next to other Key Biodiversity Areas.

Outras áreas importantes para a biodiversidade

(11.4.1) Indique se alguma das atividades da organização é realizada dentro ou próximas deste tipo de área importante para a biodiversidade

Selecione de:

☑ Não

(11.4.2) Explique

N/A
[Linha fixa]

(11.4.1) Dê detalhes das atividades da organização localizadas dentro ou perto de áreas importantes para a biodiversidade no ano de reporte.

Row 1

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:
☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Carajás National Forest

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

9000

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Carajás National Forest was created in 1998 to reconcile mining operations with biodiversity conservation. This conservation unit was created in view of the privatization of Companhia Vale do Rio Doce, as an alternative to granting the real right of use, making it possible for the mining project to continue. Its creation decree (Decree 2486 of February 2, 1998) allows mining activities within the National Forest. It formalizes the partnership between Vale and the agency responsible for protecting and managing natural ecosystems. This protected area covers about 400,000 hectares with a predominance of Open Ombrophilous Forest and Dense Ombrophilous Forest interspersed on the tops of the mountains by the ferruginous rupestrian grassland, within which part of the Carajás Mineral Complex is inserted. The Carajás National is one of the most significant blocks of native vegetation in southeast Pará. Covering the municipalities of Parauapebas, Canaã dos Carajás, and Água Azul do Norte, it is managed by the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), with support from Vale. This region is renowned for its abundant mineral reserves and high biodiversity value and is recognized as a Key Biodiversity Area. Vale supports conservation, scientific research, inspection, and educational activities within the Carajás National Forest. The National Forest creation decree allows mining activity and introduces the possibility of partnerships for the conservation of the area. The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management in forms, and is stored for information management in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Sustainability Report, referring to biodiversity data (specifically MM1). The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Criação do projeto

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Implementing mining projects leads to the suppression and reduction of forest and other open habitats, including grasslands and rupestrian fields, which can affect fauna's movement between fragments, limiting gene flow and reducing genetic variability. Also, the edge effect and conversion of natural habitats can lead to the loss of flora and fauna species. Among those affected are rare, endemic, and threatened, which may suffer direct impacts, loss of individuals, and indirect effects from fragmentation. Project design: Vale has been working with the Impact Mitigation Hierarchy, an approach to develop project adaptations, capture opportunities to prevent and mitigate impacts, and manage effectively conservation actions for biodiversity. At the S11D Mine in Carajás, the collaboration between environmental, engineering, planning, and other agencies resulted in avoidance of over 1,100 ha of impacts in natural habitat. The Project has also committed not to disturb the habitat of a key plant species until research in propagation and translocation techniques can secure "no net loss" for the species. Operational controls: Environmental control measures are taken to minimize the impacts of operations on natural environments, which include containment systems, effluent collection and treatment, drainage devices, solid waste collection and disposal, and sprinkler systems for access roads. Monitoring programs, such as effluent and surface water monitoring, are conducted to ensure the effectiveness of these control systems. The Carajás Complex Action Plan presents actions implemented or challenges related to impact mitigation. Additionally, impact mitigation actions like the Wildlife Management Program and fauna scaring tactics and eventually rescue during vegetation suppression are implemented. These involve monitoring wildlife, bioindicators, and controlling changes in the wildlife community. Additionally, exclusive viaducts for animal passage were constructed, which are situated in the southeast region of the protected area and are among the 32 fauna passages established along the 101-kilometer branch line. Restoration / Biodiversity offsets: Flora rescue is an essential mitigation measure, aiming to save individuals and seeds for future area recovery and habitat restoration. Another measure also used is planting enrichment, which consists of introducing species from the final succession stages in the forest restoration's target areas. Recovery and restoration measures are crucial to establish ecological corridors not only to compensate for habitat loss but also fragmentation, and to reestablish populations of animal and plant species impacted by the implementation of the projects. Vale and ICMBio also established the "Ecosystem Restoration Project in Preservation Areas in the vicinity of the Mosaic of Protected Area of Carajás", which includes the restoration of 1,451.85 ha of Permanent Preservation Areas.

(11.4.1.12) Maior contexto para atividades de mineração

Part of Vale's support for the implementation of the conservation plan for the Carajás Protected Areas is guided by the Term of Commitment No. 02/2015, signed between Vale and ICMBio to comply with the decrees creating the Carajás Protected Areas with the main objective of promoting protection and developing sustainable use of the set of units, involving actions to protect these areas. In addition, to propose new conservation measures for the coming decades, ICMBio and Vale drew up the Long-Term Conservation Plan for the Carajás region (PC-Carajás), formalized in Reciprocity Agreement No. 14/2013. This agreement aims to develop the Scenarios Project and draw up the Conservation Strategy for the Metallophilous Savannah of the Carajás National Forest. It presents proposals aimed at contributing to the development of the region, identifying priority areas and promoting the conservation of biodiversity in the Carajás territory through integrated socio-environmental management. Another successful example of ecological corridors is around the Carajás National Forest, in the municipality of Canaã dos Carajás (PA). There, approximately 3,853 hectares of degraded areas are recovering, with the re-establishment of connectivity between fragments of forest habitat in the region. The corridor provides a favorable environment for the movement of wild animals and the natural dispersal of regional native plants. In 2012-2013, we acquired areas around the entire construction site of the S11D

Row 2

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:
☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Campos Ferruginosos National Park

(11.4.1.6) Proximidade

Selecione de:
☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Campos Ferruginosos National Park is an integral protection area, created by the Presidential Decree on June 5, 2017, and encompasses an area of 79,086.04 hectares. The park was established through a partnership between the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) and Vale. Its establishment fulfilled one of the specific requirements of the license granted by IBAMA for Vale to operate the S11D Mine. The park is situated between the cities of Canaã dos Carajás and Parauapebas in the southeastern part of the state of Pará, Brazil. It mainly comprises portions of the Carajás National Forest –Carajás - and adjacent areas in the Bocaina Mountains. The park was created with the goal of protecting the biological diversity of the Bocaina and Tarzan Mountains. Additionally, it ensures the preservation of ecosystem services and the speleological heritage associated with ferruginous rupestrian grassland, a unique and endangered ecosystem found in Brazil. It is characterized by its rocky outcrops, iron-rich soils, and diverse flora and fauna. The Carajás Complex boasts the world's most significant iron ore mining projects and is situated in the Carajás region, within the Amazon biome, known as the S11D Complex. In 2023, Vale produced 172,968 million tons of iron ore in the Carajás Complex. The Complex introduces modern and sustainable solutions, reduces diesel consumption, and implements natural humidity processing, eliminating the need for tailings dams. Combining innovation investments with Vale's industry expertise enables a more efficient operation with minimized environmental impact. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. This information is stored in a geographic information system (GIS) tool for information management. The data serves as the basis for evaluating overlaps with high biodiversity value areas and is compared with public databases such as the World Database on Protected Areas, the World Database of Key Biodiversity Areas, Ramsar Sites Information Service (RSIS), and others. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The impact of our operation on nearby areas includes the forced dispersal of fauna, associated with three main aspects: removal of vegetation cover, which causes habitat reduction/loss; mobilization of labor/ and Increased local noise levels. This faunal dispersion generates indirect impacts with some potentially undesirable effects, such as the imbalance of faunal communities in the receiving areas and the increase in the trampling rate. The noise generated by the plant suppression task, the movement of people, and the installation processes of the project's structures causes environmental disturbances, inducing the escape of representatives of fauna.. Dispersing specimens will be more susceptible to road kills and may cause an imbalance in the receiving fauna communities due to competition. In the long

term, this impact is understood to be temporary and reversible. Operational controls: The project has implemented a noise and vibration control and monitoring plan, and a Plan for the Recovery of Degraded Areas (PRDA) to mitigate the impact of noise and vibration caused by forest suppression. Also, biodiversity monitoring is carried out. Vale Technological Institute for Sustainable Development is undertaking different research programs in this area related with diferent species in the Carajás National Forest. The aim is to identify vulnerabilities and provide essential data to support licensing processes, monitoring, management, mitigation, and compensation actions. Wildlife rescue: Another essential program also carried out was the rescue of wild fauna, with their release in areas adjacent to the affected forest remnants or other areas of the same vegetation type. In addition, properties have been acquired around the protected areas and are part of the restoration and corridor formation programme, making up almost 5,000 hectares of areas in the process of restoration. This programme uses seeds collected from species in the areas earmarked for suppression, guaranteeing the conservation of genetic diversity and the restoration of populations of threatened and endemic species.

(11.4.1.12) Maior contexto para atividades de mineração

Part of Vale S.A.'s support for the development of the conservation plan for the Conservation Units in the Carajás region is guided by the Term of Commitment No. 02/2015, signed between Vale S.A. and ICMBio to comply with the decrees creating the Carajás conservation units with the main objective of promoting the protection and developing the Project sustainable use of the set of units involving actions for the Protection of Conservation Units; Environmental Education and Public Use; Infrastructure and Operationalization; Sustainable Production and Dissemination. Another instrument signed between Vale S.A. and ICMBio, the Horizons Project, celebrates the environmental conservation and development of the Carajás protected areas with actions focused mainly on the areas surrounding the units. Its main pillar is based on diversifying the sustainable use of the land in the Itacaíunas river basin, aiming to expand the region's economic matrix through productive activities such as agroforestry and agroextractivism. The Horizons Project's activities will contribute to Vale S.A.'s goal of recovering 500,000 hectares of forest by 2030. One of the lines of action proposed by the Project in the region is the creation of ecological corridors to foster the connectivity of the conservation unit mosaic with other forest landscapes, mainly in the northwest region, the Rio Negro APP, the Lindoeste region and the southwest of the mosaic, promoting the socio-economic development of the region.

Row 3

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Tapirapé Biological Reserve

(11.4.1.6) Proximidade

Selecione de:

☑ Até 10 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Tapirapé Biological Reserve was created by Decree No. 97,719 on May 5, 1989, with an area of 99,271.75 hectares, and is in the southeast of the state of Pará, in the municipality of Marabá, Brazil. This conservation unit was created as a condition for the exploitation of the deposits in the Carajás Mineral Province. This requirement included aspects related to environmental protection, the protection of scenic beauty and water resources, support for indigenous populations, land surveillance and led to the creation of this conservation unit. The Carajás Complex boasts the world's most significant iron ore mining projects and is situated in the Carajás region, within the Amazon biome, known as the S11D Complex. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. This information is stored in a geographic information system (GIS) tool for information management. The data serves as the basis for evaluating overlaps with high biodiversity value areas and is compared with public databases such as the World Database on Protected Areas, the World Database of Key Biodiversity Areas, Ramsar Sites Information Service (RSIS), and others. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 4

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:
☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Tapirapé-Aquiri National Forest

(11.4.1.6) Proximidade

Selecione de:
☑ Até 25 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Tapirapé-Aquiriri National Forest was created through Decree no. 97,720 of May 5, 1989, with an official area of 196,503.94 hectares in the municipalities of Marabá, for the most part, and São Félix do Xingu in the state of Pará, Brazil. This federal protected area has an advisory board, established through April 21, 2005, Ordinance, with the primary objective of aiding in the planning and development of the UC, mainly about implementing its management plan and fulfilling its creation objectives.Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. This information is stored in a geographic information system (GIS) tool for information management. The data serves as the basis for evaluating overlaps with high biodiversity value areas and is compared with public databases such as the World Database on Protected Areas, the World Database of Key Biodiversity Areas, Ramsar Sites Information Service (RSIS), and others. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 5

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Itacaiúnas National Forest

(11.4.1.6) Proximidade

Selecione de:

☑ Até 50 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Itacaiúnas National Forest was established by Decree No. 2,480 of 02/02/1998 and presents about 71% of Open Ombrophilous Forest and just over 28% of Dense Ombrophilous Forest, inserted in the municipalities of Marabá, in Pará, Brazil. It has an area of 136,698.91 hectares and aims at the sustainable multiple uses of forest resources and scientific research, emphasizing methods for sustainable exploitation of native forests. This protected area is located more than 50 km from the Carajás Complex. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 6

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:
☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Igarapé Gelado Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:
☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

1200

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Igarapé Gelado Environmental Protection Area is located within the perimeter delimited by the Ministry of the Environment as a high-priority area for conservation. This protected area is part of the Carajás Mosaic. It was established by Decree No. 97,718 on May 5, 1989, and has an area of 23,285.09 ha. This requirement included aspects related to environmental protection, the protection of scenic beauty and water resources, support for indigenous populations, land surveillance and led to the creation of this conservation unit. The area is situated in the context of the Carajás Mineral Province and, despite not engaging in mining activities, has various types of ores detected due to mining research in the area, the authorizations for which remain valid to this day. Additionally, two mining tailings dams, namely Gelado Dam and Geladinho Dam, are part of the Serra Norte mine (within the Carajás Complex) and are located in the area. Fundação Vale's involvement is noteworthy in this Environmental Protection Area as it engages in various areas, including education, employment and income generation, health, and other complementary aspects. These additional areas include culture, sports, promotion, and social protection. Moreover, this area has a Management Plan approved by ICMBio Ordinance No. 58 on May 30, 2016, to ensure the protection of natural resources while promoting sustainable and harmonious coexistence between production and conservation. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Operational controls: Environmental control measures are taken to minimize the impacts of operations on natural environments, which include containment systems, effluent collection and treatment, drainage devices, solid waste collection and disposal, and sprinkler systems for access roads. Monitoring programs, such as effluent and surface water monitoring, are conducted to ensure the effectiveness of these control systems. The Carajás Complex Action Plan presents actions implemented

or challenges related to impact mitigation. Additionally, impact mitigation actions like the Wildlife Management Program and fauna scaring tactics and eventually rescue during vegetation suppression are implemented. These involve monitoring wildlife, bioindicators, and controlling changes in the wildlife community. Restoration / Biodiversity offsets: Flora rescue is an essential mitigation measure, aiming to save individuals and seeds for future area recovery and habitat restoration. Another measure also used is planting enrichment, which consists of introducing species from the final succession stages in the forest restoration's target areas. Recovery and restoration measures are crucial to establish ecological corridors not only to compensate for habitat loss but also fragmentation, and to reestablish populations of animal and plant species impacted by the implementation of the projects.

(11.4.1.12) Maior contexto para atividades de mineração

Part of Vale S.A.'s support for the development of the conservation plan for the Conservation Units in the Carajás region is guided by the Term of Commitment No. 02/2015, signed between Vale S.A. and ICMBio to comply with the decrees creating the Carajás conservation units with the main objective of promoting the protection and developing the sustainable use of the set of units involving actions for the Protection of Conservation Units; Environmental Education and Public Use; Infrastructure and Operationalization; Sustainable Production and Dissemination. Another instrument was signed between Vale S.A. and ICMBio that celebrates the environmental conservation and development of the Carajás protected areas, but now with actions focused mainly on the areas surrounding the units, called the Horizons Project, whose main pillar is based on diversifying the sustainable use of the land in the Itacaúnas river basin, with the aim of expanding the region's economic matrix through productive activities such as agroforestry and agroextractivism.

Row 7

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Não se aplica

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Xikrin do Cateté Indigenous Reserve

(11.4.1.6) Proximidade

Selecione de:

☑ Até 25 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Itacaiúnas and Cateté rivers bathe the Xikrin of Cateté Indigenous Reserve, located on firm land of tropical forest within the jurisdiction of the municipality of Parauapebas, in Pará, Brazil. The Reserve was established by Decree No. 384 of 12/26/1991 and has an area of 439150.54. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. This information is stored in a geographic information system (GIS) tool for information management. The data serves as the basis for evaluating overlaps with high biodiversity value areas and is compared with public databases such as the World Database on Protected Areas, the World Database of Key Biodiversity Areas, Ramsar Sites Information Service (RSIS), and others. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Outro, especifique **:**Wildlife rescue

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

This protection area is located more than 25 km from the Carajás Complex, so the impacts of mining activity on this reserve are not as significant as in the protection areas directly surrounding the Carajás Complex. However, the forest maintains important ecosystem services for indigenous communities, which can suffer direct and indirect impacts from operations. Vale has a team responsible for engagement with Indigenous and Traditional Communities. They include a requirement to respect the unique characteristics and social and political organization of each community, and implement participatory processes that, to the extent possible, prioritize gender and generational equity and uphold the principles of Free, Prior, and Informed Consent (FPIC). We promote participatory processes that involve these communities in conducting impact assessments, proposing mitigating and offset measures, and developing business opportunities that support their rights. Operational controls: all the Carajas Complex Projects have implemented a noise and vibration control and monitoring plan and a Plan for the Recovery of Degraded Areas (PRDA). Restoration programs also are part of the mitigation strategy, considering species that are important for the indigenous communities. Also, biodiversity monitoring is carried out. There is also a fire prevention and firefighting programme, which has a fire brigade and a team dedicated to emergencies, as well as an educational programme focused on prevention.

(11.4.1.12) Maior contexto para atividades de mineração

In 2022 — following the revision of our Indigenous engagement strategy and the launch of our Social Ambition for Indigenous Peoples, which aims to "Support all indigenous communities neighboring our operations in the development and execution of their plans and their pursuit of rights under the United Nations Declaration on the Rights of Indigenous Peoples. (UNDRIP)"— Vale is commited to implementing a range of enabling initiatives (including Consultation Protocols, Territorial and Environmental Management Plans (PGTAs, in portuguese) and/or Life Plans) for 11 Indigenous Peoples in Brazil.

Row 8

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Serra dos Carajás

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

9821

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Carajás region is classified as an Important Bird Area, being classified as Key Biodiversity Areas (KBA) in the World Database of Key Biodiversity Areas. The Serra dos Carajás KBA comprises a group of protected areas composed of the Tapirapé Biological Reserve and the Carajás, Itacaiúnas, and Tapirapé-Aquiri National Forests, plus the Xikrin Indigenous Territory of the Cateté River, all in the Tocantins-Xingu interfluve, in central-eastern Pará. Part of the Carajás Mine Complex, inserted in the Carajás National Forest, overlaps with this KBA. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management - through forms. At the Carajás Complex iron ore production can be found at our Serra Norte, Serra Leste and Serra Sul units. Serra Norte, in the municipality of Parauapebas, have the largest open pit iron ore mine in the world and have achieved the highest level of iron purity and minimum concentration of contaminants in the product. Serra Sul, located in Canaã dos Carajás, in southeastern Pará, is composed by S11D, the largest mining complex in Vale's history. The operation integrates productivity with respect towards people, technology and environmental intelligence. The Serra Leste mine is outside of the protected areas mosaic, in the municipality of Curionópolis, started its operations in 2014 and uses the dry beneficiation process (natural moisture), ensuring lower consumption of water and energy, reducing operating costs and environmental impact.The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Criação do projeto

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

☑ Outro, especifique :Technological innovation

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Implementing mining projects leads to the suppression and reduction of forest and other open habitats, including grasslands and rupestrian fields, which can affect fauna's movement between fragments, limiting gene flow and reducing genetic variability. Also, the edge effect and conversion of natural habitats can lead to the loss of flora and fauna species. Among those affected are rare, endemic, and threatened, which may suffer direct impacts, loss of individuals, and indirect effects from fragmentation. Project design: Vale has been working with the Impact Mitigation Hierarchy, an approach to develop project adaptations, capture opportunities to prevent and mitigate impacts, and manage effectively conservation actions for biodiversity. At the S11D Mine in Carajás, the collaboration between environmental, engineering, planning, and other agencies resulted in avoidance of over 1,100 ha of impacts in natural habitat. The Project has also committed not to disturb the habitat of a key plant species until research in propagation and translocation techniques can secure "no net loss" for the species. Operational controls: Environmental control measures are taken to minimize the impacts of operations on natural environments, which include containment systems, effluent collection and treatment, drainage devices, solid waste collection and disposal, and sprinkler systems for access roads. Monitoring programs, such as effluent and surface water monitoring, are conducted to ensure the effectiveness of these control systems. The Carajás Complex Action Plan presents actions implemented or challenges related to impact mitigation. Additionally, impact mitigation actions like the Wildlife Management Program and fauna scaring tactics and eventually rescue during vegetation suppression are implemented. These involve monitoring wildlife, bioindicators, and controlling changes in the wildlife community. Additionally, exclusive viaducts for animal passage were constructed, which are situated in the southeast region of Pará and are among the 32 fauna passages established along the 101-kilometer branch line. Restoration / Biodiversity offsets: Flora rescue is an essential mitigation measure, aiming to save individuals and seeds for future area recovery and habitat restoration. Another measure also used is planting enrichment, which consists of introducing species from the final succession stages in the forest restoration's target areas. Recovery and restoration measures are crucial to establish ecological corridors not only to compensate for habitat loss but also fragmentation, and to reestablish populations of animal and plant species impacted by the implementation of the projects. Vale and ICMBio also established the "Ecosystem Restoration Project in Preservation Areas in the vicinity of the Mosaic of Protected Area of Carajás", which includes the restoration of 1,451.85 ha of Permanent Preservation Areas.

(11.4.1.12) Maior contexto para atividades de mineração

Part of Vale S.A.'s support for the development of the conservation plan for the Conservation Units in the Carajás region is guided by the Term of Commitment No. 02/2015, signed between Vale S.A. and ICMBio to comply with the decrees creating the Carajás conservation units with the main objective of promoting the

protection and developing the sustainable use of the set of units involving actions for the Protection of Conservation Units; Environmental Education and Public Use; Infrastructure and Operationalization; Sustainable Production and Dissemination. Another instrument was signed between Vale S.A. and ICMBio that celebrates the environmental conservation and development of the Carajás protected areas, but now with actions focused mainly on the areas surrounding the units, called the Horizons Project, whose main pillar is based on diversifying the sustainable use of the land in the Itacaíunas river basin, with the aim of expanding the region's economic matrix through productive activities such as agroforestry and agroextractivism.

Row 9

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Água Santa Municipal Park

(11.4.1.6) Proximidade

Selecione de:

☑ Até 10 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The area is situated within a 10 km radius of several protected areas, serving as buffer zones. It is worth noting that a portion of the Itabira Complex is located within the buffer zone of the Municipal Park Água Santa, encompassing a green area of 1.2 hectares in the downtown Itabira. The park, spanning 1.2 hectares in Itabira, boasts the scenic beauty and historical significance of Poço da Água Santa. This well is renowned for its thermal waters that emanate from rock fractures or geological faults at considerable depths. Vale's operational areas annually report this information through forms to the Sustainability Department's functional areas, specifically the Corporate Environmental Management Executive Management. The activities of Itabira Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits, including Periquito, Dois Córregos, Onça, Camarinha, and Chacrinha, are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. This process generates four products: NBCA (granulated), sinter feed, pellet feed, and PCCA (super thin), which are sent to storage silos and then loaded, through three silos, onto the railway cars. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state, and municipal levels, but we also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to mitigate and offset the impact of mining operations on biodiversity. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 10

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Intelecto Municipal Park

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Intelecto Municipal Natural Park was created on December 27, 1991, by Municipal Law No. 2.770, called Parque Municipal do Campestre at that time. In an area of 21.6 hectares, in 2003, by Municipal Decree No. 1,851, the green area called Pico do Amor was incorporated. In 2006 Municipal Law no. 4.105 changed the name from Campestre Municipal Park to Intelecto Municipal Natural Park, reiterating the incorporation of the green area of the Pico do Amor, increasing its size to 35.13 hectares. The Park boasts the last remaining vegetation of the Atlantic Forest, which includes forest remnants with diverse flora. It features a range of plant species such as Jatobá (Hymenaea courbaril), Cedar (Cedrus), Vinhático (Plathymenia), Sapucaia (Lecythis pisonis), Juçaras (Euterpe edulis), Braúnas (Melanoxylon brauna), as well as exotic fruit trees that were planted during the area's farming past. The Park is in Itabira City and offers recreational areas for the local community,

including trails, kiosks, and a playground. In addition, this Park has a Management Plan. This technical document establishes zoning and the rules that should preside over the use of the area and the management of natural resources, including implementing the structures necessary to manage the protected area. The activities of Itabira Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits, including Periquito, Dois Córregos, Onça, Camarinha, and Chacrinha, are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state, and municipal levels, but we also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to mitigate and offset the impact of mining operations on biodiversity. The analysis of the proximity between the con

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

☑ Outro, especifique **:**Wildlife and flora rescue

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The implementation of mining projects and eventual expansions result in the reduction and fragmentation of natural habitats, which can have a negative impact on the surrounding protected areas. The evasion of individuals to surrounding areas, including conservation units, can also affect the ecological balance of such areas. Additionally, the increased noise, dust, vehicle and people traffic can poise further indirect impacts on the flora and fauna of the protected areas, which also includes road kills and wildfire. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Moreover, all Vale mining projects have a fire brigade ready to act when necessary, and also partnership with environmental agencies and firefighters. Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of

species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. In the Itabira Complex we have one private natural heritage reserve created and other in process, totalling more than 700 ha of forest formations. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species in Itabira region. The projects also count on the participation of several stakeholders, whether in the implementation of the programs, licensing process, or in meetings with the communities. Among them are universities, research institutions, consulting companies, members of associations, and members of the communities. Wildlife and flora rescue: In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 11

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Ribeirão São José Municipal Park

(11.4.1.6) Proximidade

Selecione de:

☑ Até 5 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Ribeirão São José Municipal Natural Park was created by law no. 3465 of December 10, 1998. On July 16, 2003, Law 3779 was approved, which changed the name of the Municipal Park to the Municipal Natural Park of Ribeirão São José. The protected area has an area of 74.33 hectares. The Park aims to preserve the natural ecosystems of great ecological relevance and scenic beauty, promote scientific research, develop environmental education and interpretation activities, and promote recreation in contact with nature and ecological tourism. The Park is located in the place called Ribeirão São José, located more than 8km from the Cauê mine. Vale's operational areas annually report this information through forms to the Sustainability Department's functional areas, specifically the Corporate Environmental Management Executive Management. The activities of Itabira Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits, including Periquito, Dois Córregos, Onça, Camarinha, and Chacrinha, are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. This process generates four products: NBCA (granulated), sinter feed, pellet feed, and PCCA (super thin), which are sent to storage silos and then loaded, through three silos, onto the railway cars.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

☑ Outro, especifique :Wildlife and flora rescue

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The implementation of mining projects and eventual expansions result in the reduction and fragmentation of natural habitats, which can have a negative impact on the landscape. Fragmentation and reduced connectivity in the landscape can affect protected areas located in the region where developments are located, amplifying the effects of fragmentation and isolation of populations. Habitat fragmentation is one of the impacts assessed in the context of the region where developments are located, and measures are proposed and implemented to avoid or minimise this impact. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Restoration: Flora rescue programs, which aim to rescue individuals, seeds and seedlings of species, are used to produce seedlings and re-establish populations within recovery/restoration actions, conserving genetic material and restoring habitats and connectivity. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression and fragmentation. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. In the Itabira Complex we have one private natural heritage reserve created and other in process, totalling more than 700 ha of forest formations. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species in Itabira region. The projects also count on the participation of several stakeholders, whether in the implementation of the programs, licensing process, or in meetings with the communities. Among them are universities, research institutions, consulting companies, members of associations, and members of the communities.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 12

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Mata Do Bispo Municipal Biological Reserve

(11.4.1.6) Proximidade

Selecione de:

☑ Até 5 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The protected area was created as Mata do Bispo Municipal Park through Law No. 3466 of December 10, 1998. On July 16, 2003, through Law No. 3783, the category of protected area changed from Municipal Park to Municipal Biological Reserve of Mata do Bispo because of the existing natural attributes, especially concerning forest formation typical of the Atlantic Forest and water resources to be preserved. This Law also rectified the area to 691.8750 hectares. In November 2003, Law nº 3794 was approved, revising some points of the descriptive memorial of the area. Located northeast of Itabira (Minas Gerais, Brazil) in the region of Ribeirão São José, this protected area is a secure area of integral protection. It is situated more than 6km from the Cauê mine. Its primary objective is to preserve the natural attributes existing within its boundaries without direct human interference or environmental modifications, except for the measures necessary to recover and keep the natural equilibrium, biological diversity, and natural ecological processes.Vale's operational areas annually report this information through forms to the Sustainability Department's functional areas, specifically the Corporate Environmental Executive Management. The activities of Itabira Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. This process generates four products: NBCA

(granulated), sinter feed, pellet feed, and PCCA (super thin), which are sent to storage silos and then loaded, through three silos, onto the railway cars. Over the years, the Itabira Mining Complex has undergone technological advancements to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state and municipal levels, but also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to mitigate and offset the impact of mining operations.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The implementation of mining projects and eventual expansions result in the reduction and fragmentation of natural habitats, which can have a negative impact on the landscape. Fragmentation and reduced connectivity in the landscape can affect protected areas located in the region where developments are located, amplifying the effects of fragmentation and isolation of populations. Habitat fragmentation is one of the impacts assessed in the context of the region where developments are located, and measures are proposed and implemented to avoid or minimise this impact. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Restoration: Flora rescue programs, which aim to rescue individuals, seeds and seedlings of species, are used to produce seedlings and re-establish populations within recovery/restoration actions, conserving genetic material and restoring habitats and connectivity. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression and fragmentation. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. In the Itabira Complex we have one private natural heritage reserve created and other in process, totalling more than 700 ha of forest formations. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species in Itabira region. The projects also count on the participation of several stakeholders, whether in the implementation of the programs, licensing process, or in meetings with the communities. Among them are universities, research institutions, consulting companies, members of associations, and members of the communities.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 13

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Santo Antônio Municipal Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

600

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Santo Antônio Environmental Protection Area (APAM, Portuguese acronym for Area de Proteção Municipal) covers a surface area of 63,517 hectares It is situated in the western part of the municipality of Itabira, in Minas Gerais, Brazil. This area corresponds to the Rio do Tanque Watershed and aims to balance human actions and the conservation of the region's watersheds. The activities of Itabira Complex in the area are part of the extraction of iron ore in the open-cut mining of Cauê. Operating since 1957, all mines in the Itabira Complex are currently in production. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to sustainability. Environmental management studies have been conducted to mitigate and offset the impact of mining operations on biodiversity. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Seleção do local

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The impacts of mining activities on biodiversity can be significant, requiring the application mitigation measures to make projects more sustainable. The main impacts of the Itabira Complex's mining activities on biodiversity were the loss and fragmentation of habitats due to vegetation suppression activities, the loss of fauna and flora, especially rare, endemic and endangered species, increased noise pollution and particulate emissions. These impacts can have repercussions on the surrounding areas, especially those overlapped from the site. To reduce or mitigate these impacts, a series of actions are implemented. Site selection: At the Itabira Complex, side selection is carried out whenever possible, looking for less environmentally damaging locational alternatives. Although the Complex's operational area is already consolidated, possible expansions may require the suppression of new areas. For example, to continue the waste disposal activity at the Conceição Mine, it was necessary to find a new area. Three areas were analyzed, and one existing waste pile was found to be the most environmentally friendly option for it offers the possibility of reusing an already impacted area, avoiding suppression of vegetation. Operational controls are implemented. AII the equipment and vehicles used in the mining area undergo preventive maintenance to generate less noise and pollution. The main sources of atmospheric pollution include the dust generated during earth moving and the movement of machinery and equipment. To reduce the dust, water trucks wet the roads throughout the working period. The gases emitted by the vehicles are also monitored periodically. Controlling liquid effluents and solid waste also reduces the impact on biodiversity and the pollution of habitats. Restoration: Vegetation suppression actions leds to the loss or dispersal of fauna. Monitoring programs for vegetation suppression, scaring and rescuing fauna are important tools for planning and defining the best strategy for directing suppression activities, as well as selecting areas for releasing rescued individuals. Prior to suppression actions, seeds and flora specimens are rescued from the areas that will be affected and taken to seedling nurseries to be used later in actions to recover degraded areas and offset programs. The rescue of flora prioritising its reintroduction into the area and ecological restoration through reforestation in other regions or alternative actions. Flora recomposition projects using native species acquired from Rescue Projects carried out in the area reduce the impacts caused by the suppression of vegetation and improve the environmental conditions of the surroundings.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 14

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Piracicaba Municipal Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

2400

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Environmental Protection Area (APAM, Portuguese acronym for Area de Proteção Municipal) Piracicaba has an area of 38,034 ha, and it is located in the western part of the municipality of Itabira, in Minas Gerais, Brazil, which corresponds to the watershed of the Rio do Peixe and tributaries of the Rio Santa Barbara. Despite the area's extensive size and a moderate degree of human occupation, it is home to a variety of essential abiotic, biotic, scenic beauty, and cultural attributes that contribute to the quality of life and well-being of local populations and have as primary objectives to protect the biological diversity, discipline the human occupation process and assure the sustainability of the use of natural resources. The activities of Itabira Complex in the area are part of the extraction of iron ore in the open-cut mining system of Conceição mine and Itabiruçu Dam. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state, and municipal levels, but we also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to

mitigate and offset the impact of mining operations on biodiversity. There is proximity to urban centres, and to avoid a visual impact and dust, green curtains with extensive forest cover, similar to a barrier, were implemented. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Seleção do local

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The impacts of mining activities on biodiversity can be significant, requiring the application mitigation measures to make projects more sustainable. The main impacts of the Itabira Complex's mining activities on biodiversity were the loss and fragmentation of habitats due to vegetation suppression activities, the loss of fauna and flora, especially rare, endemic and endangered species, increased noise pollution and particulate emissions. These impacts can have repercussions on the surrounding conservation units, especially those overlapped from the site. To reduce or mitigate these impacts, a series of actions are implemented. Site selection: At the Itabira Complex, side selection is carried out whenever possible, looking for less environmentally damaging locational alternatives. Although the Complex's operational area is already consolidated, possible expansions may require the suppression of new areas. For example, to continue the waste disposal activity at the Conceição Mine, it was necessary to find a new area. Three areas were analyzed, and one existing waste pile was found to be the most environmentally friendly option for it offers the possibility of reusing an already impacted area, avoiding suppression of vegetation. Operational controls are implemented. All the equipment and vehicles used in the mining area undergo preventive maintenance to generate less noise and pollution. Noise control is important because noise can negatively affect protected areas, especially those whose territories overlap with mining sites. The main sources of atmospheric pollution include the dust generated during earth moving and the movement of machinery and equipment. To reduce the dust, which could spread and negatively affect the overlapping conservation areas, water trucks wet the roads throughout the working period. The gases emitted by the vehicles are also monitored periodically. Controlling liquid effluents and solid waste also reduces the impact on biodiversity and the pollution of habitats. Restoration: Vegetation suppression actions leds to the loss or dispersal of fauna. Monitoring programmes for vegetation suppression, scaring and rescuing fauna are important tools for planning and defining the best strategy for directing suppression activities, as well as selecting areas for releasing rescued individuals. Prior to suppression actions, seeds and specimens are rescued from the areas that will be affected and

taken to seedling nurseries to be used later in actions to recover degraded areas and offset programmes. The rescue of flora prioritising its reintroduction into the area and ecological restoration through reforestation in other regions or alternative actions. Restorations projects using native species acquired from Rescue Projects carried out in the area reduce the impacts caused by the suppression of vegetation and improve the environmental conditions of the surroundings.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 15

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Pureza Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:

☑ Até 5 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Municipal Law No. 3547/2000 "Declares Environmental Protection Areas for the public supply sources of the Municipality of Itabira and its tributaries and makes other provisions." This law creates Environmental Protection Areas under the name of APA (Portuguese acronym for Área de Proteção Ambiental) Pureza covering the contribution of the watershed of Córrego Candidopolis and its tributaries. The total area of the APA is 3,400.54 ha, with 18% of this area, that is, 624.76 ha, belonging to the urban perimeter. The APA is delimited by the Ribeirão Candidopolis micro basin, belonging to the sub-basin of the Piracicaba River. Law No. 3547/2000 aims to protect the watershed areas in the municipality. The creation of APA Pureza in 2000 was a way for municipal management to limit the human occupation of the area to protect the source. The activities of Itabira Complex near to the area are the extraction of iron ore in the open-cut mining system. The Itabira complex comprises two large mines, Conceição and Cauê, with the latter currently undergoing environmental recovery. The Minas do Meio pits, including Periquito, Dois Córregos, Onça, Camarinha, and Chacrinha, are also part of the complex. Operating since 1957, all mines in the Itabira Complex are currently in production. The Itabira Mining Complex currently has two ore processing plants, the Cauê and Conceição Ore Treatment Facilities. Over the years, the Itabira Mining Complex has undergone technological advancements and investments to increase mine capacity and extend its useful life while maintaining a commitment to environmental sustainability. All operations not only strictly adhere to all applicable Brazilian environmental legislation at the federal, state, and municipal levels, but we also continuously seek to enhance practices by adopting industry-leading standards and good practices. Environmental management studies have been conducted to mitigate and offset the impact of mining operations on biodiversity. Vale's operational areas report information annually to the functional areas of the Sustainability Department - specifically, the Corporate Environmental Management Executive Management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The implementation of mining projects and eventual expansions result in the reduction and fragmentation of natural habitats, which can have a negative impact on the surrounding areas. The conversion of such habitats into modified ones leads to the loss of individuals of flora and fauna and can result in reduction of regional populations. The evasion of individuals to surrounding areas can also affect the ecological balance of such areas. Additionally, the increased noise, dust, vehicle and people traffic can poise further indirect impacts on the flora and fauna of the surrounding areas, which also includes road kills and wild fire. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Moreover, all Vale mining projects have a fire brigade ready to act when necessary, and also partnership with environmental agencies and firefighters. Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. In the Itabira Complex we have one private natural heritage reserve created and other in process, totalling more than 700 ha of forest formations. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species in Itabira region. Wildlife and flora rescue: In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Itabira Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 16

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ O Homem da UNESCO e as Reservas da Biosfera

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Espinhaço Range Biosphere Reserve

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

3721.14

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Serra do Espinhaço Biosphere Reserve extends in the North-South direction, over a length of approximately 1,200 km, from the Belo Horizonte Region to the northern border of the state of Bahia with the Pernambuco and Piauí, its width varying from a few kilometers to over 100 km. It constitutes a set of territories of high relevance for biodiversity conservation, encompassing protected areas, ecological corridors, and watersheds, with the primary objective of combining environmental protection and sustainable development. The Quadrilátero Ferrífero Region, located in the southern portion of the Biosphere Reserve, is the southern continuation of the Espinhaço Range. All the mineral complexes in this region of Minas Gerais are within the Biosphere Reserve and are part of a sustainable development plan that prioritizes biodiversity conservation. Our operations bring impacts but also contribute to preserving an area approximately three times larger than the area occupied by the mines and associated structures in this region. The activities of Mariana Complex in or near to the area are the extraction of iron ore in the open-cut mining system. This region has the most significant iron ore production at the national level. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. The calculation of the affected area by each Vale's operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management in forms. It is stored in a geographic information system (GIS) tool for information management. The analysis

of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Seleção do local

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to reduction of habitats for various flora and fauna species, resulting in decreased populations and genetic variability. The reduction in connectivity between fragments is also a significant impact. In addition to the decrease in biodiversity in the forest and rupestrian grasslands, the suppression of vegetation will cause a reduction in connectivity between the remaining fragments in the area of influence, which will become less protected and suffer greater edge effects, also possibly affecting overlapping and surrounding protected areas. Site selection: Suppression of native vegetation is usually an unavoidable impact on the operation of mines, so alternative locations with the smallest suppression area are studied and selected to minimize this impact. All developments have a vegetation suppression program which main objective is to ensure that only the strictly necessary areas will be suppressed. To this end, the necessary and licensed areas are demarcated in the field, and the entire suppression process is monitored and directed. Physical controls: Environmental controls are taken to avoid and reduce impacts related to the discharge of effluents, erosive processes, and waste generation, among others that may cause alterations and impacts on biodiversity. The Mariana Complex mines undergo continuous monitoring to evaluate water quality, dust and noise levels, aiming to mitigate potential negative environmental impacts. The impact of noise levels is generally minimized by preventive maintenance of equipment and vehicles. Operational controls: A program for monitoring suppression and eventually rescuing fauna is an important tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best strategy, as well as the selection of release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue and relocate captured individuals. Restoration: Flora rescue programs are initiated before the vegetation suppression, including the rescue of seeds and specimens for the production of seedlings and germplasm conservation. The production of seedlings in nurseries focuses on the restoration of degraded areas and conservation of genetic variability.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 17

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Ouro Preto/Mariana

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

0

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

This area encompasses an expressive set of extensive forest remnants, largely still contiguous, that cover the mountains around the cities of Mariana and Ouro Preto (Minas Gerais, Brazil) at the southern limit of the Espinhaço Range. It is considered an area of extreme importance mainly because of the significant remnants of the Atlantic Forest in these locals. The forests in this region are primarily semideciduous and include montane and riparian vegetation. In some areas, clean or dirty fields replace the forest. In sectors of higher altitude, such as the Pico do Itacolomi area, there is typical rupestrian grassland. Industrial-scale mining is a common activity in several sectors of the region, being an essential threat to the preserved environments in the area. Our operations bring impacts but also contribute to conserving an area approximately three times larger than the area occupied by the mines and associated structures. Almost all the mines in the Complex overlap this Key biodiversity Area (KBA), except for the Alegria mine pit. The overlap was confirmed by the free version of Integrated Biodiversity Assessment Tool (IBAT) and geographic information system (GIS) tools, but the calculation of the overlap area is not possible because we don't have the shape. The activities of Mariana Complex are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Restauração

☑ Seleção do local

☑ Controles físicos

☑ Criação do projeto

☑ Controles operacionais

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to the reduction of habitats for various flora and fauna species, and possible decreased populations and genetic variability. The reduction in connectivity between fragments is also a potential and significant impact. A reduction in connectivity between the remaining fragments in the area of influence is also a potential impact, which can cause a greater edge effects, also possibly affecting overlapping and surrounding protected areas. Site selection: alternative locations with the smallest suppression area are studied and selected to minimize this impact. All developments have a vegetation suppression program which main objective is to ensure that only the strictly necessary areas will be suppressed. Physical controls: Environmental controls are taken in order to avoid and reduce impacts related to the discharge of effluents, erosive processes, and waste generation, among others that may cause alterations and impacts on biodiversity. The Mariana Complex mines undergo continuous monitoring to evaluate water quality, dust and noise levels, aiming to mitigate potential negative environmental impacts. Operational controls: A program for monitoring suppression and eventually rescuing fauna is an important tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. Restoration: Flora rescue programs are initiated before the vegetation suppression, including the rescue of seeds and specimens for the production of seedlings and germplasm conservation. The production of seedlings in nurseries focuses on the restoration of degraded areas and conservation of genetic variability.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 18

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Serra do Caraça

(11.4.1.6) Proximidade

Selecione de:

☑ Até 5 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Serra do Caraça, about 120 km from Belo Horizonte, stands out in the regional landscape. This mountain massif encloses a significant altitudinal gradient, along which different floristic formations can be found, including montane Atlantic Forest, high montane forest filled with bromeliads and other epiphytes, and rupestrian grassland, which blend with high altitude fields at the mountain tops. In addition to the private natural heritage reserve (RPPN Santuário Caraça), the area includes the unprotected portions of the massif until near Brumal (Santa Bárbara), at the mountain's base. The activities of Mariana Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Restauração

☑ Seleção do local

☑ Controles físicos

☑ Criação do projeto

☑ Compensações de biodiversidade

☑ Controles operacionais

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to the reduction of habitats for various flora and fauna species, and possible decreased populations and genetic variability. The reduction in connectivity between fragments is also a potential and significant impact. A reduction in connectivity between the remaining fragments in the area of influence is also a potential impact, which can cause a greater edge effects, also possibly affecting overlapping and surrounding protected areas. Site selection: alternative locations with the smallest suppression area are studied and selected to minimize this impact. All developments have a vegetation suppression program which main objective is to ensure that only the strictly necessary areas will be suppressed. Physical controls: Environmental controls are taken in order to avoid and reduce impacts related to the discharge of effluents, erosive processes, and waste generation, among others that may cause alterations and impacts on biodiversity. The Mariana Complex mines undergo continuous monitoring to evaluate water quality, dust and noise levels, aiming to mitigate potential negative environmental impacts. Operational controls: A program for monitoring suppression and eventually rescuing fauna is an important tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. Restoration: Flora rescue programs are initiated before the vegetation suppression, including the rescue of seeds and specimens for the production of seedlings and germplasm conservation. The production of seedlings in nurseries focuses on the restoration of degraded areas and conservation of genetic variability.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 19

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region

(11.4.1.6) Proximidade

Selecione de:

☑ Até 5 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Mariana Complex is located near the Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region (APA Sul RMBH, Portuguese acronym for Área de Proteção Ambiental da Região Metropolitana do Sul de Belo Horizonte), a conservation area of sustainable use according to Brazilian legislation, belonging to category V of the IUCN. With an area of 1625.32 km², it encompasses part of the municipalities of Barão de Cocais, Belo Horizonte, Brumadinho, Caeté, Catas Altas, Ibirité, Itabirito, Mário Campos, Nova Lima, Raposos, Santa Bárbara, Sarzedo and the entire municipality of Rio Acima. Mining is a permitted activity in this protected area category, being the APA's main economic activity, and was responsible for developing population centres in the region. In addition, the objective of this area is to protect and conserve natural systems essential to biodiversity, especially the water resources necessary to supply the population of the Metropolitan Region of Belo Horizonte and adjacent areas, to improve the quality of life of the local people, protect ecosystems and sustainable development. The activities of Mariana Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

☑ Outro, especifique **:**Wildlife and flora rescue

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The implementation of mining projects and eventual expansions result in the reduction and fragmentation of natural habitats, which can have a negative impact on the landscape. Fragmentation and reduced connectivity in the landscape can affect protected areas located in the region where developments are located, amplifying the effects of fragmentation and isolation of populations. Habitat fragmentation is one of the impacts assessed in the context of the region where developments are located, and measures are proposed and implemented to avoid or minimise this impact. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas.. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material e restaurando habitats e connectivity. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression and fragmentation. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 20

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:
☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Cachoeira Das Andorinhas Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:
☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Mariana Complex is located near the Cachoeira das Andorinhas Environmental Protection Area, a protected area of sustainable use belonging to category V of the IUCN. In 1989 this conservation area was established, spreading over 18.7 thousand hectares. It stretches from the border between Ouro Preto and the district of São Bartolomeu, running northward to the limits of the municipalities of Itabirito and Santa Bárbara. The activities of Mariana Complex near to the area are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to the reduction of habitats for various flora and fauna species. Coupled with that, the increased noise, dust, vehicle and human traffic may result in the dispersal of animals to similar environments, poising a potential pressure on the adjacent and surrounding protected areas, affecting the ecological balance. Further indirect impacts include road kills and wildfire. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species. Wildlife and flora rescue: In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species. Moreover, all Vale mining projects have a fire brigade ready to act when necessary, and partnership with environmental agencies and firefighters. Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 21

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Uaimii State Forest

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Created on October 21st, 2003, Uaimii State Forest covers an area of 4,398 hectares in the municipality of Ouro Preto. According to the Brazilian system of protected areas, it is a protected area of sustainable use. It is located around the Timbopeba mine, part of the Mariana Complex. It is characterized by an area with a forest cover of predominantly native species. It has the aim of the sustainable multiple uses of forest resources and scientific research, emphasizing methods for sustainable exploitation of native forests. In addition, it is a protected area model that allows public use, that is, allows public visitation conditioned to the standards established for managing the area. The activities of Mariana Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to the reduction of habitats for various flora and fauna species. Coupled with that, the increased noise, dust, vehicle and human traffic may result in the dispersal of animals to similar environments, poising a potential pressure on the adjacent and

surrounding protected areas, affecting the ecological balance. Further indirect impacts include road kills and wildfire. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species. Wildlife and flora rescue: In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species. Moreover, all Vale mining projects have a fire brigade ready to act when necessary, and partnership with environmental agencies and firefighters. Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 22

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Gandarela National Park

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Serra do Gandarela National Park was created on October 13th, 2014, and is an important environmental conservation area in the heart of the Quadrilátero Ferrífero Region and the southern part of the Espinhaço Range, just 40 km from Belo Horizonte (Minas Gerais, Brazil). The Park's vegetation is composed of continuous fragments of the Atlantic Forest in transition with cerrado (tropical savanna in eastern Brazil), such as ferruginous and quartzitic rupestrian grasslands. It is an essential source of water resources, forming large aquifers and contributing to the supply of several cities, including the capital of Minas Gerais. The Park is located around the Alegria mine and close to the Timbopeba mine (5Km), and Vale has several properties within the park, including a private natural heritage reserve (RPPN, Portuguese acronym for Reserva Particular do Patrimônio Natural), contributing to the protection and regularization of land ownership. The activities of Mariana Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The mines in the Mariana Complex are brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

☑ Outro, especifique **:**Wildlife and flora rescue

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppression of natural environments in the Mariana Complex may lead to the reduction of habitats for various flora and fauna species. Coupled with that, the increased noise, dust, vehicle and human traffic may result in the dispersal of animals to similar environments, poising a potential pressure on the adjacent and surrounding protected areas, affecting the ecological balance. Further indirect impacts include road kills and wildfire. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: The Vegetation Suppression Program, which involves clearing vegetation cover, is crucial for certain project structures, such as the pit. Its objective is to minimize the impact on biodiversity by strictly limiting the extent of suppression actions to necessary areas. Restoration: Flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species, are used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Biodiversity offsets: Several environmental compensation programs, including biodiversity offsets, have been implemented to mitigate the impact of vegetation suppression. Compensation actions based on the creation of new protected areas and investments in existing ones are also carried out. The public and private protected areas maintained by Vale are of fundamental importance to maintain endemic, rare and threatened species. Wildlife and flora rescue: In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species. Moreover, all Vale mining projects have a fire brigade ready to act when necessary, and partnership with environmental agencies and firefighters. Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Mariana Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 23

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

RPPNs Andaime

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Vale is committed to environmental conservation and maintains Private Heritage Reserves (RPPN, Portuguese acronym for Reserva Particular do Patrimônio Natural) in Minas Gerais. These reserves serve as a means of offsets and voluntary habitat and species conservation. The protected areas mentioned here are officially created and are part of the environmental compensation for the Vargem Grande Complex. This protected area has 175 ha and was implemented in 2004 in Vale's properties adjacent to the operations to facilitate their management and protection. The activities of Vargem Grande Complex near to the area are the extraction of iron ore in the open-cut mining system. Like all of Vale's complexes, the Vargem Grande complex has sustainability as a fundamental priority

andinvesting in technology and research to improve your environmental controls. The mines within the Vargem Grande Complex are classified as brownfield projects and the entire complex follows Brazilian environmental legislation based on preparing environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of Vale's mining activities on the surrounding of the Vargem Grande Complex were assessed and the most significant were habitat fragmentation, the dispersal of fauna (including endangered species) and an increase in interspecific competition in these fragments, an increase in forest fires, dispersion of effluents and dust. To minimise or compensate these impacts, the following measures have been adopted: Physical controls: Vale takes environmental control measures seriously and implements them at all its undertakings. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, programs are conducted to monitor these measures, such as effluent and surface water monitoring. Operational controls: All Vale mining projects have a fire brigade ready to act when necessary. A third party is contracted if the fire is not contained, even in partnership with environmental agencies and firefighters. The fire brigade also acts in the surrounding protected areas. Over time, Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Suppression monitoring programmes and fauna relocation and rescue programmes are important for mitigating the impact. Restoration: The aim of flora rescue activities carried out during vegetation suppression is to preserve the genetic heritage of the local flora and to conserve rare, endemic, threatened and legally protected species. In the restoration of degraded areas, seeds and specimens rescued during suppression are used, as well as plants obtained through micropropagation protocols, especially endangered species.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Vargem Grande Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival. Vale also conducts studies in its RPPNs. Updated Management Plans are drawn up for all its reserves, seeking to better understand the fauna and flora protected in these areas, as well as the impacts from mining and external activities that may affect them. The aim of the management plans is to better understand the interrelationships between fauna and flora as well as assess the presence of rare, migratory, endemic, endangered, exotic or invasive species in the protected areas. The ecosystem services provided by fauna are also assessed. A strategic analysis of each RPPN is also carried out, assessing its strengths, weaknesses, opportunities and threats. Environmental programs are also proposed for each area, according to the results obtained.

Row 24

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Estação Ecológica De Arêdes

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Arêdes Estação Ecológica, spanning 1,157 hectares in the municipality of Itabirito, Minas Gerais, was established in 2010 by Decree No. 45,397 following the National System of protected areas. The reason for its creation is the protection of flora, fauna, water resources, historical, archaeological heritage, and the development of scientific research. This protected area is located in the surroundings of the Pico mine structures in the Vargem Grande Complex, in connection with other protected area owned by Vale. The activities of Vargem Grande Complex near to the area are the extraction of iron ore in the open-cut mining system. Like all of Vale's complexes, the Vargem Grande complex has sustainability as a fundamental priority, besides investing in technology and research to improve your environmental controls. The mines within the Vargem Grande Complex are classified as brownfield projects and the entire complex follows Brazilian environmental legislation based on preparing environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in a geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of Vale's mining activities on the surrounding of the Vargem Grande Complex were assessed and the most significant were habitat fragmentation, the dispersal of fauna (including endangered species) and an increase in interspecific competition in these fragments, an increase in forest fires, dispersion of effluents and dust. To minimise or compensate these impacts, the following measures have been adopted: Physical controls: Vale takes environmental control measures seriously and implements them at all its undertakings. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, programs are conducted to monitor these measures, such as effluent and surface water monitoring. Operational controls: All Vale mining projects have a fire brigade ready to act when necessary. A third party is contracted if the fire is not contained, even in partnership with environmental agencies and firefighters. The fire brigade also acts in the surrounding protected areas. Over time, Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Suppression monitoring programmes and fauna relocation and rescue programmes are important for mitigating the impact. Restoration: The aim of flora rescue activities carried out during vegetation suppression is to preserve the genetic heritage of the local flora and to conserve rare, endemic, threatened and legally protected species. In the restoration of degraded areas, seeds and specimens rescued during suppression are used, as well as plants obtained through micropropagation protocols, especially endangered species.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Vargem Grande Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 25

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

4436

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Vargem Grande Complex is located in an area overlapping the Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region (APA do Sul RMBH, a Portuguese acronym for Área de Proteção Ambiental do Sul da Região Metropolitana de Belo Horizonte), a protected area of sustainable use according to Brazilian legislation, belonging to category V of the IUCN. With an area of 1625.32 km², it encompasses part of the municipalities of Barão de Cocais, Belo Horizonte, Brumadinho, Caeté, Catas Altas, Ibirité, Itabirito, Mário Campos, Nova Lima, Raposos, Santa Bárbara, Sarzedo and the entire municipality of Rio Acima. The APA SUL RMBH is located within the Quadrilatero Ferrífero Region of Minas Gerais, one of Brazil's most important metallogenetic provinces. While mining is a permitted activity in this category of protected area, the region's economy is primarily driven by it. As such, mining has played a significant role in developing population centres in the region. The activities of Vargem Grande Complex in or near to the area are the extraction of iron ore in the open-cut mining system. Like all of Vale's complexes, the Vargem Grande complex has sustainability as a fundamental priority, besides investing in technology and research to improve your environmental controls. The mines within the Vargem Grande Complex are classified as brownfield projects and the entire complex follows Brazilian environmental legislation based on preparing environmental impact studies and their respective environmental management programs. The calculation of the affected area by each Vale's operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental

Management in forms. It is stored in a Geographic Information System (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Seleção do local

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Site selection: The risk analysis procedure prioritizes biodiversity features that can be used as information for site selection and location definition. The study of locational alternatives is mandatory in environmental impact studies and should point out the most ecologically friendly alternatives. Physical controls: Vale takes environmental control measures seriously and implements them at all its undertakings. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, programs are conducted to monitor these measures, such as effluent and surface water monitoring. Operational controls: All Vale mining projects have a fire brigade ready to act when necessary. A third party is contracted if the fire is not contained, even in partnership with environmental agencies and firefighters. The fire brigade also acts in the surrounding protected areas. Over time, Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Suppression monitoring programmes and fauna relocation and rescue programmes are important for mitigating the impact. Restoration: The aim of flora rescue activities carried out during vegetation suppression is to preserve the genetic heritage of the local flora and to conserve rare, endemic, threatened and legally protected species. In the restoration of degraded areas, seeds and specimens rescued during suppression are used, as well as plants obtained through micropropagation protocols, especially endangered species Vale's Biofactory in the Quadrilatero Ferrífero in Minas Gerais plays a crucial role in multiplying native flora specimens using biotechnology. The Biofactory produces plantlets and seedlings of Atlantic Forest and Cerrado (tropical savanna in eastern Brazil) species, including threatened and endemic ones, for the recovery of degraded areas and compensatory measures.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Vargem Grande Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 26

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Parque Estadual Serra Do Rola Moça

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

State Park Serra do Rola Moça was created in 1994 and had an area of about 4000 ha with Atlantic Forest and Cerrado (tropical savanna in eastern Brazil), covering regions of Belo Horizonte, Brumadinho, Nova Lima, and Ibirité. Brazilian legislation states it is an integral protection area in category II of the IUCN. The activities of Vargem Grande Complex near to the area are the extraction of iron ore in the open-cut mining system. Like all of Vale's complexes, the Vargem Grande complex has environmental sustainability as a fundamental priority, besides investing in technology and research to improve your environmental controls. The mines within the Vargem Grande Complex are classified as brownfield projects and the entire complex follows Brazilian environmental legislation based on preparing environmental impact studies and their respective environmental management programs. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in a geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of Vale's mining activities areas located in the surroundings of the Vargem Grande Complex were assessed and the most significant were habitat fragmentation, the dispersal of fauna (including endangered species) and an increase in interspecific competition in these fragments, an increase in forest

fires, dispersion of effluents and dust. To minimise or compensate these potential impacts, the following measures have been adopted: Physical controls: Vale takes environmental control measures seriously and implements them at all its undertakings. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, programs are conducted to monitor these measures, such as effluent and surface water monitoring. Operational controls: All Vale mining projects have a fire brigade ready to act when necessary. A third party is contracted if the fire is not contained, even in partnership with environmental agencies and firefighters. The fire brigade also acts in the surrounding conservation units. Over time, Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. This proactive approach helps reduce biodiversity loss and itigates the impacts on the surrounding conservation units. The suppression of vegetation to implement new projects can results in the reduction of habitat and forces species to disperse and seek new territories. Suppression monitoring programmes and fauna relocation and rescue programmes are important for mitigating this impact. Restoration: The aim of flora rescue activities carried out during vegetation suppression is to preserve the genetic heritage of the local flora and to conserve rare, endemic, threatened and legally protected species. In the restoration of degraded areas, seeds and specimens rescued during suppression are used, as well as plants obtained through micropropagation protocols.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Vargem Grande Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 27

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Estação Ecológica De Fechos

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Estação Ecológica de Fechos was created in 1994, is considered category Ia by the IUCN, and covers an area of 554 hectares in the municipality of Nova Lima. It was created to protect the water source in the watershed of the ribeirão dos Fechos and the existing natural environments, composed mainly of forests. The Paraopeba Complex is situated in an area surrounding this protected area with activities like the extraction of iron ore in the open-cut mining system. The Paraopeba Complex consists of seven mines: Capão Xavier, Mutuca, Mar Azul, Jangada, Tod, Fábrica, and Viga. It also includes ten ore beneficiation plants and a pelletizing plant located at the mine site. The mines within the Paraopeba Complex are classified as brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management through forms. This information is stored and managed in a geographic information system (GIS) tool. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of Vale's mining activities on the surrounding of the Vargem Grande Complex were assessed and the most significant were habitat fragmentation, the dispersal of fauna (including endangered species) and an increase in interspecific competition in these fragments, an increase in forest fires, dispersion of effluents and dust. To minimise or compensate these impacts, the following measures have been adopted: Physical controls: Vale takes environmental control measures seriously and implements them at all its undertakings. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, programs are conducted to monitor these measures, such as effluent and surface water monitoring. Operational controls: All Vale mining projects have a fire brigade ready to act when necessary. A third party is contracted if the fire is not contained, even in partnership with environmental agencies and firefighters. The fire brigade also acts in the surrounding protected areas. Over time, Vale has continuously improved this system to ensure a rapid and well-coordinated response to fires, joining efforts to contain the fire as soon as possible. Suppression monitoring programmes and fauna relocation and rescue programmes are important for mitigating the impact. Restoration: The aim of flora rescue activities carried out during vegetation suppression is to preserve the genetic heritage of the local flora and to conserve rare, endemic, threatened and legally protected species. In the restoration of degraded areas, seeds and specimens rescued during suppression are used, as well as plants obtained through micropropagation protocols, especially endangered species Biodiversity offsets include environmental compensation actions, such as the creation of protected areas to preserve affected flora and fauna. For example, as of 2023 a total of 111.74 hectares has been recovered/restored in the Paraopeba Complex.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Paraopeba Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 28

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region

(11.4.1.6) Proximidade

Selecione de:

☑ Sobreposição

(11.4.1.7) Área de sobreposição (hectares)

1400

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Paraopeba Complex is situated in an area that overlaps with the Environmental Protection Area in the southern region of the Belo Horizonte Metropolitan Region (APA Sul RMBH, Portuguese acronym for Área de Proteção Ambiental do Sul da Região Metropolitana de Belo Horizonte). This protected area, classified as a sustainable use area according to Brazilian legislation and falling under category V of the IUCN, spans an area of 1625.32 km². It encompasses parts of several municipalities, including Barão de Cocais, Belo Horizonte, Brumadinho, Caeté, Catas Altas, Ibirité, Itabirito, Mário Campos, Nova Lima, Raposos, Santa Bárbara,

Sarzedo, and the entire municipality of Rio Acima. The APA Sul RMBH is located within the Quadrilátero Ferrífero Region of Minas Gerais, considered one of Brazil's most significant metallogenetic provinces. Although mining is a permitted activity within this protected area category, the local economy relies primarily on mining, which has played a substantial role in the developing population centres in the region. The activities of Paraopeba Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Paraopeba Complex consists of seven mines: Capão Xavier, Mutuca, Mar Azul, Jangada, Tod, Fábrica, and Viga. It also includes ten ore beneficiation plants and a pelletizing plant located at the mine site. The mines within the Paraopeba Complex are classified as brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management through forms. This information is stored and managed in a geographic information system (GIS) tool. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Seleção do local

☑ Controles físicos

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

Suppressing native vegetation cover for mining operations can result in the reduction of habitats for fauna and flora species. The fragmentation of natural habitats can disrupt the dispersal ability of flora and fauna specimens, and the conversion of habitats can force specimens to migrate to surrounding natural environments, potentially causing imbalances in the receiving communities. Coupled with increased vehicle and machinery traffic, these impacts can lead to a rise in accidents involving animals. These direct and indirect impacts resulting from vegetation removal are evaluated for all mines in the Paraopeba Complex, and specific actions are implemented to minimize, recover and compensate for them. Site selection: The study of locational alternatives is a mandatory step of the environmental impact study, which aims to evaluate different viable locations for setting up an enterprise In the planning stages of new projects and expansions, the environmental team, and engineering, evaluates possible interferences in natural heritage areas and protected areas, as well as sensitive habitats and species. The risk analysis

procedure prioritizes biodiversity features that can be used as information for this analysis and location definition. Physical controls: These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, monitoring programs are conducted to monitor these measures, such as effluent monitoring, and surface water monitoring among others, to follow up and guarantee the effectiveness of the control systems. Operational controls: To reduce impacts on wild fauna and plant species, several programs are currently in place, including flora and fauna rescue programs, which aims to preserve genetic heritage, conserve rare and threatened species of plants, monitor deforestation fronts and eventually rescue animals e relocate them to similar surrounding areas. Other operational controls include field demarcation, hiring specialized companies, determining access and storage areas, and defining procedures for vegetation removal. Restoration / Biodiversity offsets: Recovery and rehabilitation of degraded areas, soil protection, erosion control, local flora restoration, which includes planting endangered species, and visual impact minimization. Biodiversity offsets include environmental compensation actions, such as the creation of protected areas to preserve affected flora and fauna. For example, as of 2023 a total of 111.74 hectares has been recovered/restored in the Paraopeba Complex.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Paraopeba Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 29

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria Ia-III

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Parque Estadual Serra Do Rola Moça (state park)

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

Serra do Rola Moça State Park, created in 1994, spans approximately 4,000 ha and encompasses both Atlantic Forest and Cerrado (tropical savanna in eastern Brazil) biomes. It is in the municipalities of Belo Horizonte, Brumadinho, Nova Lima, and Ibirité. According to Brazilian legislation, it is classified as a category II integral protection area under the IUCN. The park is home to numerous springs that supply water to the Metropolitan Region of Belo Horizonte and boasts a diverse fauna, including endangered species such as the brown jaguar (Puma concolor), ocelot (Leopardus pardalis) and maned wolf (Chrysocyon brachyurus). Situated in the transition zone between the Cerrado and Atlantic Forest biomes, the park is known for its rare species of orchids, bromeliads, candeia trees, jacarandá trees, cedar trees, jequitibá trees, arnica plants, and Canela-de-ema (Vellozia sp.), which has become a symbol of the park. The activities of Paraopeba Complex in or near to the area are the extraction of iron ore in the open-cut mining system. The Paraopeba Complex consists of seven mines: Capão Xavier, Mutuca, Mar Azul, Jangada, Tod, Fábrica, and Viga. It also includes ten ore beneficiation plants and a pelletizing plant located at the mine site. The mines within the Paraopeba Complex are classified as brownfield projects; the entire complex follows Brazilian environmental legislation based on preparing of environmental impact studies and their respective environmental management programs. Vale's operational areas provide annual reports to the relevant departments within the Sustainability Department - Corporate Environmental Management Executive Management. These reports are stored in a GIS tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

☑ Compensações de biodiversidade

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The fragmentation of natural habitats, resultant from the suppression of habitats for mining operations, coupled with increased noise, dust, vehicle and human traffic may result in the dispersal of animals to similar environments, poising a potential pressure on the adjacent and surrounding protected areas, and potentially affecting the ecological balance. Further indirect impacts include road kills and wildfire, which can be particularly harmful for the surrounding protected areas. However, such impacts are considered reversible and can be mitigated and compensated. Operational controls: To reduce impacts on wild fauna and plant species, several programs are currently in place, including flora and fauna rescue programs, which aims to preserve genetic heritage, conserve rare and threatened species of plants, monitor deforestation fronts and eventually rescue animals e relocate them to similar surrounding areas. Other operational controls include field demarcation, hiring specialized companies, determining access and storage areas, and defining procedures for vegetation removal. A particularly important operational control is the monitoring and containment of forest fires. All Vale mining projects have a fire brigade ready to act and when the fire gets out of control third party is contracted, including partnership with environmental agencies and firefighters. This structure is already implemented in Vale's operations and has been improved over time. Vale's response to fires is known to be rapid and well-coordinated, with a concentrated effort to contain the fire as soon as possible. This is particularly important for surrounding protected areas that are susceptible to forest fires, such as Serra do Rola Moça State Park. Restoration: Flora rescue programs are initiated before the vegetation suppression, including the rescue of seeds and specimens for the production of seedlings and germplasm conservation. The production of seedlings in nurseries focuses on the restoration of degraded areas and conservation of genetic variability. Restoration / Biodiversity offsets: Recovery and rehabilitation of degraded areas, soil protection, erosion control, local flora restoration, which includes planting endangered species, and visual impact minimization. Biodiversity offsets include environmental compensation actions, such as the creation of protected areas to preserve affected flora and fauna. For example, as of 2023 a total of 111.74 hectares has been recovered in the Paraopeba Complex.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Paraopeba Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 30

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Private Natural Heritage Reserve - Lending Peti Reserve

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

This is a protected area, registered at the federal level and belongs to the category of Private Natural Heritage Reserve. It was created through Ordinance No. 99, of September 3, 2001, of the Brazilian Institute for the Environment and Renewable Natural Resources. The property belongs to Vale and has 96.42 hectares. This protected area is in São Gonçalo do Rio Abaixo (Minas Gerais) and characterized by semideciduous seasonal forest and is continuous with the Peti Environmental Station, forming an important ecological corridor for the fauna in a transition area between Atlantic Forest and Cerrado (tropical savanna in eastern Brazil). The activities of Brucutu Água Limpa Complex near to the area are the extraction of iron ore in the open-cut mining system. The mines of the Brucutu Água Limpa Complex are brownfield projects and the entire complex follows Brazilian environmental legislation, at the federal, state and municipal levels. All mines have their

environmental impact assessment and environmental management plans. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Criação do projeto

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of Vale's mining activities in areas located near the Brucutu Complex were evaluated and the most significant were related to the reduction of habitat for fauna and flora, loss of individuals and genetic diversity of fauna and flora, loss of connectivity between habitats, production of solid and liquid waste, siltation, noise pollution and dust emissions. To minimise or compensate these impacts, the following measures have been adopted: Project design: Search for more environmentally friendly locational alternatives for expansion projects, prioritising the choice of areas that have already been altered, avoiding the need to intervene in areas with higher quality native vegetation cover. Operational controls: The mines in this complex have systems for treating liquid effluents, containing erosion and sediment, and controlling dust and noise, preventing these impacts from affecting the surrounding conservation areas. Restoration: The implementation of ecological restoration projects, which are carried out using seeds and propagules of certain plant species rescued during suppression, ensure that the genetic heritage of those species, especially the rare, threatened and legally protected ones, is preserved. In the Brucutu expansion areas, which involved the suppression of native vegetation, more than 10,000 specimens (seeds and individuals) were rescued and taken to the nursery for seedling production. The Complex has flora rescue programmes with actions carried out to reduce the loss of plant species and genetic diversity. Adult individuals, seedlings and seeds are rescued from areas prior to suppression and taken to the nursery to produce seedlings, which are then used to recover degraded areas and compensatory planting areas. In this way, the genetic material returns to compose new recovery areas, positively affecting the surrounding conservation units. Rare, endemic and threatened species are particularly affected by habitat loss, loss of connectivity between fragments and edge effects (especially damaging for some plant species). In response to these impacts, the Fauna and Flora Species and Endangered Species Monitoring Programmes have been implemented in Brucutu for over 10 years. These programmes are implemented in the areas surrounding the complex.

(11.4.1.12) Maior contexto para atividades de mineração

Vale conducts fauna monitoring studies in and around the Brucutu Complex, with the aim of understanding the dynamics of the fauna communities present in the operational and surrounding areas, providing more accurate data that enables early detection and rapid action in the event of harmful changes to the fauna, as well as identifying possible changes that the fauna may be suffering as a result of the operation of the project. During monitoring studies, special attention is given to species that are endemic, threatened, gregarious or dependent on a specific environment for their survival.

Row 31

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Private Natural Heritage Reserve - Itajurú or Sobrado

(11.4.1.6) Proximidade

Selecione de:

☑ Até 10 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

This is a protected area, registered at the federal level and belongs to the category of Private Natural Heritage Reserve. It was created through Ordinance No. 102, of August 9, 2002, of the Brazilian Institute for the Environment and Renewable Natural Resources. The property belongs to Vale and has 43.06 hectares, located in Santa Barbara, Minas Gerais. The activities of Brucutu Água Limpa Complex near to the area are the extraction of iron ore in the open-cut mining system. The mines of the Brucutu Água Limpa Complex are brownfield projects and the entire complex follows Brazilian environmental legislation, at the federal, state and municipal levels. All mines have their environmental impact assessment and environmental management plans. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in a geographic information system (GIS) tool for information management. This information is the base to evaluate the overlap with high biodiversity value areas and public databases like the World Database on Protected Areas, the World Database of Key Biodiversity Areas, Ramsar Sites Information Service (RSIS), and others. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 32

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region

(11.4.1.6) Proximidade

Selecione de:

☑ Até 10 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Brucutu/Água Limpa Complex is located nearly the Environmental Protection Area to the south of the Belo Horizonte Metropolitan Region (APA Sul RMBH, Portuguese acronym for Área de Proteção Ambiental do Sul da Região Metropolitana de Belo Horizonte), about 10 km away from Brucutu mine. This is a protected area of sustainable use according to Brazilian legislation, belonging to category V of the IUCN. With an area of 1625.32 km², it encompasses part of the municipalities of Barão de Cocais, Belo Horizonte, Brumadinho, Caeté, Catas Altas, Ibirité, Itabirito, Mário Campos, Nova Lima, Raposos, Santa Bárbara, Sarzedo and the entire municipality of Rio Acima. Mining is a permitted activity within this category of protected area, and it serves as the primary economic activity in the APA. As a result, it has contributed to developing population centres in the region. The activities of Brucutu Água Limpa Complex are the extraction of iron ore in the open-cut mining system. The mines of the Brucutu Água Limpa Complex are brownfield projects and the entire complex follows Brazilian environmental legislation, at the federal, state and municipal levels. All mines have their environmental impact assessment and environmental management plans. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the GIS tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 33

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:

☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:

☑ Brasil

(11.4.1.5) Nome da área importante para a biodiversidade

Serra da Cambota Environmental Protection Area

(11.4.1.6) Proximidade

Selecione de:

☑ Até 10 km

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The Environmental Protection Area (APA, Portuguese acronym for Área de Proteção Ambiental) Serra da Cambota was created through Law No. 1102, of October 6, 1999, and it is located at Barão dos Cocais, in Minas Gerais, Brazil. Its purpose is to ensure the well-being of the human populations existing there, to conserve and improve the ecological and local conditions, ensuring, mainly, the local water wealth and to promote the sustainable development of the communities existing there. In addition, the APA comprises two private natural heritage reserve (RPPN, Portuguese acronym for Reserva Particular do Patrimônio Natural –), Cambotas I with an area of 124.85 hectares and Cambotas II with an area of 182.61 hectares. The activities of Brucutu Água Limpa Complex are located in more than 10 km of this area and configurate the extraction of iron ore in the open-cut mining system. The mines of the Brucutu Água Limpa Complex are brownfield projects and the entire complex follows Brazilian environmental legislation, at the federal, state and municipal levels. All mines have their environmental impact assessment and environmental management plans. Vale's operational areas report the information annually to the functional areas of the Sustainability Department - Corporate Environmental Management Executive Management, where this information is stored in the geographic information system (GIS) tool for information management. The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Não avaliado

(11.4.1.12) Maior contexto para atividades de mineração

This information was not accessed due to the distance from the mine to the protected area.

Row 34

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Indonésia

(11.4.1.5) Nome da área importante para a biodiversidade

KBA Feruhumpenai - Matano

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The PTVI operation is adjacent to the KBA Feruhumpenai – Matano and to Danau Matano, a Nature Recreation Park, IUCN Category V, at the provincial border of Central and South Sulawesi, Indonesia.The KBA area was created in 2019, and it has an area of 161,002 ha, with 71% of it being a protected area. PTVI extracts nickel laterite ore and processes it into the final nickel product in matte. This mine is under the legal framework of the Contract of Work, which was amended on October 17th, 2014, it is valid until December 28th, 2025, with a concession area of 118,017 hectares covering South Sulawesi (70,566 hectares), Central Sulawesi (22,699 hectares), and Southeast Sulawesi (24,752 hectares). The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management in forms. It is stored for information management, in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Sustainability Report, referring to biodiversity data (specifically MM1). The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of mining in this area are the fragmentation and the loss of individuals species of fauna and flora regarding edge effect and consequent alteration of habitats. The following measures have been adopted to minimize or mitigate these impacts: Operational controls: sediment containment structures such as lagoons and dams have been built. Restoration: Before the vegetation is suppressed, seeds are collected. These seeds are taken to nursery to produce seedlings. PTVI established a 2.5 ha nursery, which has been in operation since April 2006, to support the comprehensive land rehabilitation activities. The nursery produces an average of 700,000 seedlings and rehabilitates more than 100 ha of post-mining land every year. PTVI's nursery also produces several species of native and endemic plants as part of its biodiversity conservation programme. The entire mined area goes through a recovery process, which also considers the re-establishment of the populations of endemic and endangered species and the return of fauna. The recovered regions, as well as the surroundings of the mined areas, are monitored. Furthermore, PTVI handed over 140 hectares of critical land in a rehabilitated watershed to the Ministry of Environment and Forestry in 2022. The handed-over land was in Pongkeru sub-watershed in Ledu-Ledu and Kawata Villages, Wasuponda Sub-district, East Luwu District, South Sulawesi. Operational controls: Fauna and flora surveys are carried out and the results are used to assess impacts and plan recovery actions. Suppression actions are monitored and flora are rescued during suppression activities in order to minimise impacts. Environmental monitoring programmes, implementation and assessment of environmental management systems, environmental audits and monitoring of compliance with legislation are also carried out. PTVI also has a monitoring program of water quality and aquatic biota in Matano Lake, conducted by independence consultant. A rehabilitation border area of Matano lakeshore using freshwater mangrove is conduct in partnership with local government.

(11.4.1.12) Maior contexto para atividades de mineração

To conserve biodiversity, PT Vale has a post-mining and biodiversity management plan for 100 per cent of the mining operation areas in the Sorowako block, which refers to ESDM Minister Regulation No. 7 of 2014 on Reclamation and Post-Mining. There is also a fire prevention and firefighting program, which includes a fire brigade and a team dedicated to emergencies, as well as educational activities focused on prevention. Actions are also taken to address the impacts of changes in the landscape, changes in the structure and composition of the flora, disturbance of the fauna's habitat and a decrease in the abundance of plankton and benthos.

Row 35

(11.4.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 7

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis
☑ Áreas legalmente protegidas

(11.4.1.3) Categoria da área protegida (classificação IUCN)

Selecione de:
☑ Categoria IV-VI

(11.4.1.4) País/área

Selecione de:
☑ Indonésia

(11.4.1.5) Nome da área importante para a biodiversidade

Danau Matano Nature Recreation Park

(11.4.1.6) Proximidade

Selecione de:
☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The PTVI operation is adjacent (

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of mining in this area are the fragmentation and the loss of individuals species of fauna and flora regarding edge effect and consequent alteration of habitats. The following measures have been adopted to minimize or mitigate these impacts: Operational controls: Sediment containment structures such as lagoons and dams have been built. Restoration: Before the vegetation is suppressed, seeds are collected. These seeds are taken to nursery to produce seedlings. PTVI established a 2.5 ha nursery, which has been in operation since April 2006, to support the comprehensive land rehabilitation activities. The nursery produces an average of 700,000 seedlings and rehabilitates more than 100 ha of post-mining land every year. PTVI's nursery also produces several species of native and endemic plants as part of its biodiversity conservation programme. The entire mined area goes through a recovery process, which also considers the re-establishment of the populations of endemic and endangered species and the return of fauna. The recovered regions, as well as the surroundings of the mined areas, are monitored. Furthermore, PTVI handed over 140 hectares of critical land in a rehabilitated watershed to the Ministry of Environment and Forestry in 2022. The handed-over land was in Pongkeru sub-watershed in Ledu-Ledu and Kawata Villages, Wasuponda Sub-district, East Luwu District, South Sulawesi. Operational controls: Fauna and flora surveys are carried out and the results are used to assess impacts and plan recovery actions. Suppression actions are monitored and flora are rescued during suppression activities in order to minimise impacts. Environmental monitoring programmes, implementation and assessment of environmental management systems, environmental audits and monitoring of compliance with legislation are also carried out.

(11.4.1.12) Maior contexto para atividades de mineração

To conserve biodiversity, PT Vale has a post-mining and biodiversity management plan for 100 per cent of the mining operation areas in the Sorowako block, which refers to ESDM Minister Regulation No. 7 of 2014 on Reclamation and Post-Mining. There is also a fire prevention and firefighting program, which includes a fire brigade and a team dedicated to emergencies, as well as educational activities focused on prevention. Actions are also taken to address the impacts of changes in the landscape, changes in the structure and composition of the flora, disturbance of the fauna's habitat and a decrease in the abundance of plankton and benthos.

Row 36

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Indonésia

(11.4.1.5) Nome da área importante para a biodiversidade

KBA Danau Mahalona

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The KBA Danau Mahalona area, established in 2019, spans across 9,632 hectares, with 24% of the area designated as a protected zone, in South Sulawesi, Indonesia. PTVI extracts nickel laterite ore and processes it into the final nickel product in matte. This mine is under the legal framework of the Contract of Work, which was amended on October 17th, 2014, it is valid until December 28th, 2025, with a concession area of 118,017 hectares covering South Sulawesi (70,566 hectares), Central Sulawesi (22,699 hectares), and Southeast Sulawesi (24,752 hectares). The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management in forms. Itis stored for information management, in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Sustainability Report, referring to biodiversity data (specifically MM1). The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of mining in this area are the fragmentation and the loss of individuals species of fauna and flora regarding edge effect and consequent alteration of habitats. The following measures have been adopted to minimize or mitigate these impacts: Operational controls: sediment containment structures such as lagoons and dams have been built. Restoration: Before the vegetation is suppressed, seeds are collected. These seeds are taken to nursery to produce seedlings. PTVI established a 2.5 ha nursery, which has been in operation since April 2006, to support the comprehensive land rehabilitation activities. The nursery produces an average of 700,000 seedlings and rehabilitates more than 100 ha of post-mining land every year. PTVI's nursery also produces several species of native and endemic plants as part of its biodiversity conservation programme. The entire mined area goes through a recovery process, which also considers the re-establishment of the populations of endemic and endangered species and the return of fauna. The recovered regions, as well as the surroundings of the mined areas, are monitored. Furthermore, PTVI handed over 140 hectares of critical land in a rehabilitated watershed to the Ministry of Environment and Forestry in 2022. The handed-over land was in Pongkeru sub-watershed in Ledu-Ledu and Kawata Villages, Wasuponda Sub-district, East Luwu District, South Sulawesi. Operational controls: Fauna and flora surveys are carried out and the results are used to assess impacts and plan recovery actions. Suppression actions are monitored and flora are rescued during suppression activities in order to minimise impacts. Environmental monitoring programmes, implementation and assessment of environmental management systems, environmental audits and monitoring of compliance with legislation are also carried out.

(11.4.1.12) Maior contexto para atividades de mineração

To conserve biodiversity, PT Vale has a post-mining and biodiversity management plan for 100 per cent of the mining operation areas in the Sorowako block, which refers to ESDM Minister Regulation No. 7 of 2014 on Reclamation and Post-Mining. There is also a fire prevention and firefighting program, which includes a fire brigade and a team dedicated to emergencies, as well as educational activities focused on prevention. Actions are also taken to address the impacts of changes in the landscape, changes in the structure and composition of the flora, disturbance of the fauna's habitat and a decrease in the abundance of plankton and benthos.

Row 37

(11.4.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.4.1.2) Tipos de áreas importantes para a biodiversidade

Selecione todos os aplicáveis

☑ Áreas-chave para a biodiversidade

(11.4.1.4) País/área

Selecione de:

☑ Indonésia

(11.4.1.5) Nome da área importante para a biodiversidade

KBA Danau Towuti

(11.4.1.6) Proximidade

Selecione de:

☑ Adjacente

(11.4.1.8) Descreva brevemente as atividades da organização localizadas na área selecionada ou nas suas proximidades no ano de reporte

The KBA Danau Towuti area, established in 2019, covers an expanse of 97,733 ha, with 64% of the area designated as a protected zone, in South Sulawesi province, Indonesia. PTVI extracts nickel laterite ore and processes it into the final nickel product in matte. This mine is under the legal framework of the Contract of Work, which was amended on October 17th, 2014, it is valid until December 28th, 2025, with a concession area of 118,017 hectares covering South Sulawesi (70,566 hectares), Central Sulawesi (22,699 hectares), and Southeast Sulawesi (24,752 hectares). The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate - Executive Management of Corporate Environmental Management in forms. Itis stored for information management in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Sustainability Report, referring to biodiversity data (specifically MM1). The analysis of the proximity between the conservation unit and the mining complex was calculated using the GIS platform, which contains information on Vale's properties in its various areas of operation.

(11.4.1.9) Indique se alguma das atividades da organização localizadas na área selecionada ou nas suas proximidades pode afetar negativamente a biodiversidade

Selecione de:

☑ Sim, mas foram implementadas medidas de mitigação

(11.4.1.10) Medidas de mitigação implementadas na área selecionada

Selecione todos os aplicáveis

☑ Controles operacionais

☑ Restauração

(11.4.1.11) Explique como as atividades da organização localizadas na área selecionada ou em suas proximidades podem afetar negativamente a biodiversidade, como isso foi avaliado e descreva eventuais medidas de mitigação implementadas

The potential impacts of mining in this area are the fragmentation and the loss of individuals species of fauna and flora regarding edge effect and consequent alteration of habitats. The following measures have been adopted to minimize or mitigate these impacts: Operational controls: sediment containment structures such as lagoons and dams have been built. Restoration: Before the vegetation is suppressed, seeds are collected. These seeds are taken to nursery to produce seedlings. PTVI established a 2.5 ha nursery, which has been in operation since April 2006, to support the comprehensive land rehabilitation activities. The nursery produces an average of 700,000 seedlings and rehabilitates more than 100 ha of post-mining land every year. PTVI's nursery also produces several species of native and endemic plants as part of its biodiversity conservation programme. The entire mined area goes through a recovery process, which also considers the re-establishment of the populations of endemic and endangered species and the return of fauna. The recovered regions, as well as the surroundings of the mined areas, are monitored. Furthermore, PTVI handed over 140 hectares of critical land in a rehabilitated watershed to the Ministry of Environment and Forestry in 2022. The handed-over land was in Pongkeru sub-watershed in Ledu-Ledu and Kawata Villages, Wasuponda Sub-district, East Luwu District, South Sulawesi. Operational controls: Fauna and flora surveys are carried out and the results are used to assess impacts and plan recovery actions. Suppression actions are monitored and flora are rescued during suppression activities in order to minimise impacts. Environmental monitoring programmes, implementation and assessment of environmental management systems, environmental audits and monitoring of compliance with legislation are also carried out.

(11.4.1.12) Maior contexto para atividades de mineração

Further context for mining projects To conserve biodiversity, PT Vale has a post-mining and biodiversity management plan for 100 per cent of the mining operation areas in the Sorowako block, which refers to ESDM Minister Regulation No. 7 of 2014 on Reclamation and Post-Mining. There is also a fire prevention and firefighting program, which includes a fire brigade and a team dedicated to emergencies, as well as educational activities focused on prevention. Actions are also taken to address the impacts of changes in the landscape, changes in the structure and composition of the flora, disturbance of the fauna's habitat and a decrease in the abundance of plankton and benthos.
[Adicionar linha]

(11.5) É possível divulgar a área do projeto de mineração e a área das terras perturbadas para cada um dos projetos de mineração?

(11.5.1) Divulgando a área do projeto de mineração e a área de terras perturbadas

Selecione de:
☑ Sim

(11.5.2) Explique

The corporate area monitors the area of land disturbed at each of Vale's mining sites annually by reporting the impacted area indicator, which is related to GRI indicator 304-1 and MM1. This can be tracked in our Integrated Report. All mining projects undergo a comprehensive environmental impact study that coronate the full extent of the impact on fauna and flora, as well as social impacts. These impacts are also reported annually in relation to the GRI 304-2 indicator, and species with affected habitats are reported under the GRI 304-4 indicator. Our primary impacts involve changes in land use and vegetation cover, resulting in the localized loss of flora and a reduction or alteration of fauna habitats. The removal of native vegetation cover is a fundamental aspect of mining activity. Consequently, some of its direct impacts on flora and fauna cannot be mitigated but are addressed through recovery, restoration, and offset measures. In 2023, the total impacted area by all our operations worldwide reached 89,342 hectares. This figure includes all areas already affected by our operations, as well as those that have received formal authorization from environmental regulatory agencies for project implementation/operation.
[Linha fixa]

(11.5.1) Forneça detalhes sobre a área do projeto de mineração e a área das terras perturbadas para cada projeto de mineração.

Row 1

(11.5.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

75584.95

(11.5.1.3) Área total perturbada até o momento (hectares)

11626.64

(11.5.1.4) Área perturbada no ano de reporte (hectares)

491.04

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the area affected by each Vale operation is reported annually by the operational areas directly to the Sustainability Directorate. It is stored for information management in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Integrated Report, referring to biodiversity data (specifically 304-3 and MM1). In addition, this GIS platform also houses information about Vale's properties across its various areas of activity. The total area disturbed brings modified and natural habitats, with forest and rupestrian grassland.

Row 2

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

20626.8

(11.5.1.3) Área total perturbada até o momento (hectares)

5840.01

(11.5.1.4) Área perturbada no ano de reporte (hectares)

212.92

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually to the Sustainability Directorate by the operational areas. These figures are then stored and managed in a geographic information system (GIS) tool for information purposes. The area calculations are based on on-site measurements and shapes created using the reference coordinates of each polygon. This data and information are calculated and reported annually, aligning with GRI indicators in the Integrated Report, specifically about biodiversity data (MM1). Furthermore, this GIS platform serves as a repository for information on Vale's properties across its various operational areas. The total disturbed area encompasses modified and natural habitats, including forests and open fields.

Row 3

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

28597.21

(11.5.1.3) Área total perturbada até o momento (hectares)

3787.34

(11.5.1.4) Área perturbada no ano de reporte (hectares)

21.4

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually by the operational areas directly to the Sustainability Directorate. It is stored for information management in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI indicators in the Integrated Report, referring to biodiversity data (specifically MM1). In addition, this GIS platform also houses information about Vale's properties across its various areas of activity. The affected area total to date brings modified and natural habitats, with forest and rupestrian grassland. The total area disturbed to date brings modified and natural habitats, with forest rupestrian grassland formation.

Row 4

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

23714.64

(11.5.1.3) Área total perturbada até o momento (hectares)

4147.4

(11.5.1.4) Área perturbada no ano de reporte (hectares)

37.2

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually by the operational areas directly to the Sustainability Directorate. It is stored in a geographic information system (GIS) tool for information management. All these data and information are calculated and reported annually against the GRI indicators in the Integrated Report, referring to biodiversity data (specifically MM1). In addition, this GIS platform also houses information about Vale's properties across its various areas of activity. The total area disturbed brings modified and natural habitats, with forest and rupestrian grassland formation.

Row 5

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

24051.78

(11.5.1.3) Área total perturbada até o momento (hectares)

3733.91

(11.5.1.4) Área perturbada no ano de reporte (hectares)

4.77

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually by the operational areas directly to the Sustainability Directorate. This information is stored and managed in a geographic information system (GIS) tool for information management. These data and information are used to calculate and report the GRI indicators in the Integrated Report, specifically referring to biodiversity data (MM1). Furthermore, the GIS platform also contains information about Vale's properties across its various areas of activity. The total disturbed area to date includes both modified and natural habitats, including forested areas and rupestrian grassland.

Row 6

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

13444.63

(11.5.1.3) Área total perturbada até o momento (hectares)

3707

(11.5.1.4) Área perturbada no ano de reporte (hectares)

2.8

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually by the operational areas directly to the Sustainability Directorate and stored for information management in a geographic information system (GIS) tool. These data and information are calculated and reported annually in the Integrated Report, specifically in reference to biodiversity data (MM1) according to the GRI indicators. Additionally, this GIS platform contains information about Vale's properties across its various areas of activity. The total area disturbed to date encompasses both modified and natural habitats, including forest and rupestrian grassland formations.

Row 7

(11.5.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.5.1.2) Área total de terras possuídas/arrendadas /de área do projeto (hectares)

11802017

(11.5.1.3) Área total perturbada até o momento (hectares)

7533.21

(11.5.1.4) Área perturbada no ano de reporte (hectares)

253.6

(11.5.1.5) Tipo(s) de habitat afetado(s) no ano de reporte

Selecione todos os aplicáveis

☑ Habitat modificado

☑ Habitat natural

(11.5.1.6) Explique

The calculation of the affected area by each Vale's operations is reported annually by the operational areas directly to the Sustainability Directorate. It is stored for information management in a geographic information system (GIS) tool. All these data and information are calculated and reported annually against the GRI

indicators in the Integrated Report, referring to biodiversity data (specifically MM1). In addition, this GIS platform also houses information about Vale's properties across its various areas of activity. The total area disturbed brings modified and natural habitats, with forest and grassland formation.
[Adicionar linha]

(11.6) Há operações de mineração artesanal e em pequena escala (ASM) ativas nas áreas dos projetos de mineração ou em suas áreas de influência?

Selecione de:
☑ Dados não disponíveis

(11.7) São adotados planos de ação para a biodiversidade para gerenciar os impactos sobre a biodiversidade?

Selecione de:
☑ Sim

(11.7.1) Descreva os critérios da organização para definir quais unidades devem produzir planos de ação para a biodiversidade.

*The main requirements for preparing of management plans or biodiversity action plans are legal requirements, location in areas of high biodiversity value, and presence of sensitive and/or threatened species. Most of Vale's operational units have biodiversity management plans or programs associated with legal requirements within licensing processes, covering actions to control and mitigate impacts, as well as recovery/restoration, compensation, and impact monitoring actions. In 2015, Vale carried out an assessment at a company-wide level to map and classify the sensitivity to biodiversity arising from site operations as a result of their location and interface with nature; this was updated in 2017. The analysis included nine categories of areas with relevant biodiversity value, according to global and national organizations (KBA, Protected Areas, Wilderness Areas, Hotspots, occurrence of Endangered Species IUCN, among others). We use a score to characterize the importance and sensitivity of biodiversity, which generated risk rating. The areas with high and very high risks were considered priorities for elaborating a biodiversity management plan or action plan. In 2017, we established a partnership with The Biodiversity Consultancy to develop Guidelines for the Development of Biodiversity Action Plans, with a focus on establishing improvements in our processes, in addition to application in a pilot project that culminated in the development of an internal normative standard establishing guidelines and procedures for biodiversity management in new projects/expansions and operations. Operations generating significant impacts on areas of high biodiversity value require biodiversity management plans. Of the operational sites assessed in 2023, 50 (92.6%) have been identified as requiring biodiversity management plans. All operational units that require plans have specific biodiversity programs and actions related to the stages of the mitigation phase (controls, mitigation, recovery and compensation), with 46 (82%) having consolidated plans implemented, two units with plans being implemented (have specific programs implemented, which are being consolidated to reflect internal biodiversity standard guidelines) and two others have programs that are in implemented, but being adapted to aligned with implemented plans in operations located within the same region. *

(11.8) Dê detalhes sobre os projetos de mineração que devem produzir Planos de Ação para a Biodiversidade.

(11.8.1) Número de projetos de mineração que devem produzir um BAP

50

(11.8.2) % de projetos de mineração que devem produzir um BAP e que já implementaram um

100

(11.8.3) Formato

Selecione todos os aplicáveis

☑ Documento independente

☑ Parte do Sistema de Gestão Ambiental geral

(11.8.4) Frequência com que os BAPs são avaliados

Selecione todos os aplicáveis

☑ Regularmente

(11.8.5) Explique

In 2015, Vale conducted a company-wide assessment to map and classify the sensitivity of biodiversity resulting from site operations and their interface with nature. This assessment was updated in 2017. The analysis included nine categories of areas with significant biodiversity value, based on global and national organizations' criteria (such as Key Biodiversity Area, Protected Areas, Wilderness Areas, Hotspots, and the occurrence of Endangered Species according to IUCN, among others). We used a scoring system to determine the importance and sensitivity of biodiversity, which resulted in a risk rating. The areas identified with high and very high risks were primarily located in Brazil and Indonesia, making them top priorities for impact and risk management, as well as reporting purposes. The majority of Vale's operational units have biodiversity action/management plans or programs in place, which are associated with legal requirements within the scope of licensing processes. These plans encompass control and mitigation measures, impact recovery/restoration, compensation, and monitoring. In 2017, we formed a partnership with The Biodiversity Consultancy to develop Guidelines for the Preparation of Biodiversity Action Plans. This initiative aimed to enhance our processes, leading to the publication of our regulatory document in 2020. The document sets forth guidelines and processes for biodiversity management in new projects, expansions, and ongoing operations. The management and action plans are dynamic documents subject to regular revisions. Adjustments or new actions are implemented whenever the outcomes of existing programs and initiatives indicate the need for course corrections. The results of these actions are evaluated on an annual basis. Operations generating significant impacts on areas of high biodiversity value require biodiversity management plans. Of the operational sites assessed in 2023, 50 (92.6%) have been identified as requiring biodiversity management plans (GRI G4 MM2). All operational units that require plans have specific biodiversity programs and actions

related to the stages of the mitigation phase (controls, mitigation, recovery and compensation), with 46 (82%) having consolidated plans implemented, two units with plans being implemented (have specific programs implemented, which are being consolidated to reflect internal biodiver
[Linha fixa]

(11.9) Algum dos projetos causou ou tem o potencial para causar impacto(s) negativo(s) significativo(s) para a biodiversidade?

(11.9.1) Algum projeto causou ou tem o potencial de causar impactos negativos significativos para a biodiversidade

Selecione de:

☑ Sim

(11.9.2) Explique

Vale employs the best methods, technologies, and actions that allow for the least interference with natural resources. However, our operations still have direct and indirect impacts on biodiversity. Our primary impacts are related to changes in land use and vegetation cover, which directly result in localized loss of flora and the reduction or alteration of fauna habitats. The removal of native vegetation cover is inherent to mining activity. Therefore, some of its direct impacts on flora and fauna cannot be mitigated but are addressed with recovery, restoration, and compensatory measures. In 2023, the total impacted area by all our operations worldwide reached 89,342 hectares. This number encompasses all areas already affected by our operations, as well as areas that already have formal authorization from environmental regulatory agencies for project implementation/operation. Newly suppressed areas worldwide totaled 1408 hectares in 2023, and areas of permanent recovery totaled 815 hectares. Given the location of mining reserves, and the inherent locational rigidity of mineral occurrences, some of our operations are situated in areas with high biodiversity values, necessitating a robust management process. The impacted area may host populations of threatened and endemic species that may suffer the loss of individuals and even population due to the reduction and/or alteration of their habitats. In 2023, 4,125 species were recorded in habitats impacted by or located close to Vale's operations. Of these, 147 are considered threatened by the International Union for Conservation of Nature (IUCN): 13 are classed as Critically endangered, 59 as endangered, and 75 as vulnerable.
[Linha fixa]

(11.9.1) Com relação aos projetos de mineração reportados, dê detalhes dos impactos negativos significativos para a biodiversidade, com a respectiva resposta ao impacto.

Row 1

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Conversão e/ou degradação de habitats naturais (diferentes de florestas)

(11.9.1.4) Descrição do impacto

Implementing mining project structures involves opening pits without alternative locations, due to the locational rigidity of mineral occurrence. This process results in the suppression of native vegetation and reduction of natural habitats, including grassland habitats such as ferruginous rupestrian grassland. This type of habitat is closely associated with the presence of iron ore reserves. The conversion of natural habitats into modified ones leads to the loss of individual flora species and can also result in the loss of fauna specimens. Among the species that may be affected are those that are rare, endemic, and threatened. This includes species endemic to ferruginous rupestrian grassland, as well as birds, frogs, and snakes that rely on these habitats.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

Since the open pits don't have alternative locations in response to the impact of vegetation suppression, it became necessary to apply mitigating actions and measures, such as the flora and fauna rescue. For flora specimens, it is essential to prioritize their reintroduction in recovery and restoration areas and compensatory efforts such as the reforestation of the other regions or other actions agreed upon between the applicant and the competent environmental agency. The flora rescue removes specimens in the area that will be suppressed. The seedlings are used in recovery and restoration processes, with a view to the conservation of genetic variability, prioritizing those threatened and endemic species. It is a mitigation measure, carried out during the project's implementation phase and related to the biotic environment, with its application period considered to be short term but reflecting long-term benefits. Regarding the flora rescue carried out in 2023 during the suppression actions in S11D, 5,467 individuals belonging to 89 species were collected, as well as 235.901 kg of seeds and 301 seedlings of 32 species. In addition, 10 rare endemic or threatened species were rescued. All this material was separated, processed, weighed, identified and then taken to the Forest Nursery. A total of 368 seedlings were produced in the nursery from the vegetative material of the rare, endemic and threatened species rescued in the suppression areas. 3,498 individuals were translocated or planted. Monitoring activities were also carried out on the translocated or planted flora throughout 2023. In total, 8,383 individuals of 67 species were monitored. In addition, compensatory planting was carried out for species threatened with extinction and protected by law. Regarding the flora rescue program carried out in the Serra Norte, 12,476 individuals belonging to 111 species were collected. Of these species, 13 are considered endemic. 53.6 kg of seeds were also collected. All the material was sent to the Carajás forest nursery. 5,636 individuals were planted in forest recovery areas and the rest remained in the nursery awaiting favorable climatic conditions. Vale published the Carajás Biodiversity Management Plan, which aims to integrate sustainability sustainability into its operations in the Carajás protected area mosaic and surrounding areas.

Row 2

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Indireto

(11.9.1.3) Impacto

Selecione de:

☑ Outro, especifique **:**Wildlife scaring

(11.9.1.4) Descrição do impacto

The forced dispersal of fauna is associated with three main aspects: (i) Removal of vegetation cover, which causes habitat reduction/loss.; (ii) Mobilization of labor/ and (iii)Increased local noise levels. Although removing the vegetation itself could not cause serious harmful effects on wildlife populations, this dispersion generates

indirect impacts with more potentially undesirable effects, such as the imbalance of faunal communities in the receiving areas and the increase in the trampling rate. At the sites where the structures are installed, on access roads, and in their surroundings, the noise generated by the plant suppression task, the movement of people, and the installation processes of the project's structures causes environmental disturbances, inducing the escape of various representatives of fauna. This dispersal of individuals can alter the site's ecological interactions. Species that cannot disperse will suffer stress due to the sudden loss of their habitats, the loud noises from suppression, and the presence of workers and machinery on the site. Those dispersing specimens will be more susceptible to trampling and will induce an imbalance in the receiving fauna communities due to competition among the migrating fauna for new ecological niches. In the long term, this impact is understood to be temporary and reversible. Although certain species avoid the surroundings, others may establish themselves there

(11.9.1.5) Consequência

Selecione de:

☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

The project has implemented a noise and vibration control and monitoring plan, and a Plan for the Recovery of Degraded Areas (PRDA) to mitigate the impact of noise and vibration caused by forest suppression and recovery the degraded areas. Another essential program also carried out was the rescue of wild fauna. The captured animals are carefully packed in transport boxes specific to the different species, sizes, and distances of the transport route. The stakeholders involved in this process were a contracted company that conducted the scaring and rescue of fauna and the competent environmental agencies. According to the annual Report on Environmental Performance (in Portuguese RADA), In 2023, the total area recovered in Project 1 (N4N5, S11D and Serra Leste) was 117.75 hectares and 73.6 hectares of compensated areas. Fauna monitoring involved thorough inspection and activities that ensured 100% of intervened areas were observed. In 2023, 869 animals of 184 species were recorded in the fauna rescue and scaring programs in S11D, including 31 species of amphibians, 68 species of birds, 50 species of reptiles and 35 species of mammals. Animals captured during suppression were immediately released in adjacent areas. The animals that required veterinary care were sent to the Center for the Reception of Rescued Fauna (CRFR) and, after recovery, were released in areas adjacent to the suppression area where they were captured. Of the 869 specimens recorded, only 13 required capture and veterinary care. Animals that were unable to be released were sent to zoos or breeding centers that had been contacted in advance. Animals that were captured dead or died were sent to research institutions in the region. Two of the animals were released after recovery, two required prolonged treatment and were sent to BioParque Vale Amazônia, four died and five required euthanasia. The fauna scaring and rescue program during suppression activities carried out in the Serra Norte in 2023 recorded 1,729 animals of 220 species, including 40 species of amphibians, 57 species of birds, 81 species of reptiles and 42 species of mammals. 312 animals died or were found dead during suppression. 54 animals required veterinary care and were referred to the clinic. Of these animals, 25 were released in adjacent areas after recovery, 19 were sent to BioParque for longer treatment and 10 died.

Row 3

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Desmatamento e/ou degradação florestal

(11.9.1.4) Descrição do impacto

Implementing mining project structures and eventual expansions leads to the suppression and reduction of forest habitats. The fragmentation generated by the suppression of vegetation in mining projects is reinforced by external pressure on the Carajás National Forest, with deforested areas. This fragmentation creates borders and anthropized areas that can affect fauna's movement between fragments, limiting gene flow and reducing their genetic variability. Additionally, the edge effect can also compromise the survival of some species of flora, and according to literature, the results of exposure to wind, light, and dust can be seen at about 300 m from the edge. The conversion of natural habitats into modified habitats leads to the loss of individuals of flora species and can also lead to the loss of fauna species. Among the species that may be affected are rare, endemic, and threatened, which may suffer direct impacts, loss of individuals, and indirect effects from fragmentation. Among the impacted species, we can typically find forest species, such as primates and birds dependent on the forest understory

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

In response to the impact of vegetation suppression, it is necessary to apply mitigating actions and measures. These measures include the rescue of the flora, prioritizing its reintroduction in recovery and restoration areas, and compensatory measures such as the ecological restoration of the other areas or other actions agreed upon between the environmental agencies. The flora rescue removes specimens in the area to be suppressed. The seedlings are used in recovery and restoration processes to conserve genetic variability and prioritize those threatened with extinction. It was a preventive measure carried out during the project's implementation phase and related to the biotic environment, with its application period considered to be shortterm but will reflect long-term benefits. Vale send 98.53% of the seeds to the Carajás nursery. Although not quite 100%, the seeds contributed to germination experiments, direct sowing in restoration areas, and herbarium contributions, aligning with the program's objectives to enhance connectivity. In 2023 during the suppression actions in S11D, 5,467 individuals belonging to 89 species were collected, as well as 235.901 kg of seeds and 301 seedlings of 32 species. In addition, 10 rare, endemic or threatened species were rescued. In Serra Norte mines, 12,476 individuals belonging to 111 species were collected. Of these species, 13 are considered endemic. 53.6 kg of seeds were also collected. Rescues in regenerating anthropized areas were unique, reflecting a focus on securing plants vital for ecosystem restoration and rehabilitation of degraded areas. This project surpasses legal obligations by seeking to expand forest cover in areas once used for agriculture and enhancing landscape connectivity. Additionally, it nurtures partnerships with a local cooperative for purchasing native seeds, fostering sustainable forest utilization. Fauna rescue programs are designed to save wildlife in areas impacted by forest vegetation removal, keeping pace with deforestation to capture transient or displaced fauna. Throughout the process, projects involve multiple stakeholders, engaging them in program implementation, licensing procedures, and community meetings. The 2021 Carajás Biodiversity Management Plan aims to incorporate sustainability in Vale's activities in and around Carajás's protected area.

Row 4

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Desmatamento e/ou degradação florestal

(11.9.1.4) Descrição do impacto

The remaining areas of Seasonal Semideciduous Forest within the enterprise's vicinity were in two distinct stages of regeneration: initial and intermediate, resulting from Vale's restoration efforts 1992. The suppression of vegetation in these formations significantly impacted the reduction of biological diversity through the loss of individuals, the reduction of populations, and the loss in production and dispersion of propagules. In addition, other effects associated with suppression were considered, such as the decrease in specific fauna sites. This impact was considered harmful, relevant, and, therefore, of moderate magnitude. Its manifestation was assessed in the short term (immediately due to the elimination of individuals) and the medium to long term (because of population reduction, fragmentation, and consequent progressive loss of genetic variability in the population).

(11.9.1.5) Consequência

Selecione de:

☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:

☑ Quase certo

(11.9.1.7) Descreva a resposta

In cases where the removal of native plant species is unavoidable, as in mining projects involving pit expansion that require specific location requirements, mitigating actions and measures have become necessary. These include flora rescue efforts, prioritizing their reintroduction in the area between the pit and the access road to Itabira, and offset measures such as ecological restoration through reforestation in other regions or alternative actions agreed upon by the applicant and the relevant environmental agency. The rescue of flora provided for the removal of specimens of different species present in the forest area to be suppressed, through the collection of seeds, seedlings, and seedlings for use in the processes of plant restoration, with a view to the conservation of genetic variability, prioritizing those that are threatened with extinction. It was a preventive measure carried out during the project's implementation phase and related to the biotic environment, with its application period considered to be shortterm but will reflect long-term benefits. The goal of flora re-composition is to plant native species that will blend harmoniously with the surrounding landscape and reduce visual impact, thereby improving the area's environmental conditions. Native species should be purchased, preferably from the Flora Rescue Project. It comprises the forest restoration in an area equivalent to the site suppressed as required by law, preferably in degraded areas and subject to reclamation. Through the implantation of pioneer native species, it is expected to create an environment conducive to developing secondary species through natural succession. The main stakeholders involved are: - Vale employees. - Specialists from consultancies and universities are interested in conducting environmental studies and programs. - The environmental agencies monitor all the processes. - The surrounding communities. According to the results obtained in 2023, the Itabira Complex had 212.92 hectares of suppressed areas, 151.63 hectares of recovered areas and 92.3 hectares of compensated areas.

Row 5

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Fragmentação de ecossistemas

(11.9.1.4) Descrição do impacto

Although the operational area of the Complex is already consolidated, eventual expansions may require suppression of the new areas that may still have native vegetation cover. As a result of suppression, natural areas that remain continuous may suffer from the process of habitat fragmentation. This impact is reduced because most of the environmental matrix that characterizes the region is modified, with native habitats presenting low quality. The environmental impact can be classified as harmful and relevant.

(11.9.1.5) Consequência

Selecione de:

☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

Vegetation suppression is monitored to reduce the impact of habitat fragmentation, and a monitoring system is in place, which includes the rescue of flora before to any deforestation activities and, when necessary, the rescue and relocation of fauna. It is particularly relevant for certain species that may have difficulty moving from the area to be cleared. It should be noted that the actions of rescue, translocation, relocation, or destination during deforestation occurred only in case of need, in other words, when the conditions verified did not allow the animal to move by its means. This program was licensed by IBAMA (federal environmental agency) in

compliance with the guidelines of Normative Instruction No. 146 of January 10, 2007, which establishes the criteria and standards for the request for granting authorization for capturing, collecting, and transporting fauna in the country, while specific legislation for mining projects is not being prepared. In order to minimize the impacts caused by forest suppression and fragmentation, fauna rescue and scaring programs have been implemented. In 2023, 34 animals of 14 species were recorded in the fauna rescue and scaring programs, including 2 species of amphibians, 6 species of reptiles and 6 species of mammals. Of these animals, 18 were scared away from the suppression areas, 2 were rescued and later released in adjacent areas and 6 were found dead or died. We also monitored animals that were accidentally run over during the removal of vegetation and the implementation of the project. Seventeen records of animals hit by vehicles were obtained, of which 15 were wild animals and two were domestic animals.

Row 6

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Indireto

(11.9.1.3) Impacto

Selecione de:

☑ Outro, especifique :Fauna scaring

(11.9.1.4) Descrição do impacto

The impacts caused by the increase in noise, dust, and the traffic of vehicles and people, are like those described and evaluated as a consequence of the vegetation suppression actions; that is, they cause evasion of individuals from the areas surrounding the enterprise and loss of biodiversity. But it is classified as reversible, as it was intense only during the implementation phase; local, as it reached the limits of the indirectly affected area; moderately relevant, as it came from a small portion of the mammal community and expected the situation to return to the previous levels. The classification in these valuation criteria makes this impact of moderate magnitude.

(11.9.1.5) Consequência

Selecione de:

☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To mitigate the impact of vegetation suppression on the environment and its fauna, Vale has implemented the Program for Monitoring Suppression and Fauna Rescue. This program aims to minimize the effect of vegetation suppression by ensuring that only the necessary areas are affected. These actions are accompanied by programs for disturbance and rescuing fauna, which aim to reduce the impacts of suppression on fauna species, as well as flora rescue programs, which have as their objective the rescue of individuals, seeds, and seedlings of species that will be used to produce seedlings and re-establish populations within the recovery/restoration actions, conserving genetic material. Fauna rescue was licensed by IBAMA (federal environmental agency) in compliance with the guidelines of Normative Instruction No. 146 of January 10, 2007, which establishes the criteria and standards for the request for granting authorization for capturing, collecting, and transporting fauna in the country. In 2023, 34 animals of 14 species were recorded in the fauna rescue and scaring programs, including 2 species of amphibians, 6 species of reptiles and 6 species of mammals. Of these animals, 18 were scared away from the suppression areas, 2 were rescued and later released in adjacent areas and 6 were found dead or died. We also monitored animals that were accidentally run over during the removal of vegetation and the implementation of the project. Seventeen records of animals hit by vehicles were obtained, of which 15 were wild animals and two were domestic animals.

Row 7

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Perda de espécies raras e ameaçadas

(11.9.1.4) Descrição do impacto

The implementation of mining project structures and eventual expansions lead to the reduction of natural habitats. The fragmentation generated by the suppression of vegetation in mining projects is reinforced by external pressure, with t deforestation and urbanization. The conversion of natural habitats into modified habitats leads to the loss of individuals of flora species and can also lead to the loss of fauna specimens. Among the species that may be affected are those that are rare, endemic, and threatened, which may suffer indirect impacts from the effects of fragmentation. Some of the species that are particularly vulnerable to these impacts include the threatened Hydromedusa maximiliani (reptile), Aplastodiscus cavicola (amphibian) Spizaetus tyrannus, Urubitinga coronata, Sporophila frontalis, Sporophila falcirostris, Sporophila angolensis (birds), Trinomys moojeni, Chrysocyon brachyurus, Lycalopex vetulus, Leopardus pardalis, Leopardus wiedii e Leopardus guttulus (mammals).For these species, the loss of habitat is a negative impact that can lead to a reduction of populations in the region.

(11.9.1.5) Consequência

Selecione de:

☑ Extremo

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

In response to the impact of fragmentation, the Flora rescue programs actions are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on fauna species, as well as flora rescue programs. Compensation actions based on investments in protected area and the creation of new protected areas are also carried out. In 2023 the compensation area projected for the Itabira Complex was 177.53 hectares, however the compensation carried out was 196.80 hectares. In the Itabira Complex we have one private natural heritage reserve created and other in process, totalling more than 700 hectares of forest formations. The different public protected area in the municipality as well as the private protected areas maintained by Vale and habitat restoration areas are of fundamental importance to maintain endemic, rare, and threatened species in Itabira region. Throughout this process, the projects also count on the participation of several stakeholders, whether in the implementation of the programs, in the licensing process, or in meetings with the communities. Among them are universities, research institutions, consulting companies, members of associations, and members of the communities

Row 8

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Conversão e/ou degradação de habitats naturais (diferentes de florestas)

(11.9.1.4) Descrição do impacto

The semideciduous seasonal forest and the rupestrian grassland are the primary natural environments in the Complex. Any suppression of vegetation in these formations will lead to the loss or reduction of habitats for various flora and fauna species, resulting in decreased populations and genetic variability within the affected areas. This negative impact is considered significant and of high magnitude. As the suppression of native vegetation is an unavoidable impact on the implementation and operation of mines, it is necessary to apply mitigating measures, such as monitoring of suppression, with the rescue of flora and fauna, reclamation and offset measures, such as the creation of a forest nursery, restoration or other action agreed between the applicant and the environmental agency focused on the compensation of impacts.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

The locational alternatives with the smallest suppression area are selected to minimize this impact. For the implementation of the project, the suppression areas are restricted to avoid additional effects. Before the suppression action, seeds, plantlets, and specimens are rescued to produce seedlings and germplasm conservation. The production of seedlings in nurseries supports the restoration of degraded areas and the conservation of genetic variability. During suppression, fauna specimens

that have difficulty moving are rescued and relocated. The Complex has been conducting integrated fauna monitoring for more than ten years, which accompanies the communities in the face of the different environmental alterations resulting from the implantation and operation of the projects. The main stakeholders involved are: - Vale employees. - Specialists from consultancies and universities are interested in conducting environmental studies and programs. - The environmental agencies monitor all the processes. - The surrounding communities. According to the 2023 results, the Mariana Complex had 21.4 hectares of suppressed area, 82.3 hectares of recovered area and 196.17 hectares of compensated areas. In 2023, Vale continued the environmental compensation program carried out in two of the company's areas, looking after the planted seedlings. This program began in 2018, when 107,337 seedlings were planted on 97.49 hectares at Fazenda Sinhana Moreira and 30,320 seedlings on 30.47 hectares at Fazenda Macaquinho. The seedlings used in these plantings were produced by Vale at the Fazendão Nursery. At the Fábrica Nova Mine, activities were carried out to recover degraded areas by hydro-seeding an area of 18.13 hectares.

Row 9

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Fragmentação de ecossistemas

(11.9.1.4) Descrição do impacto

The reduction in connectivity between fragments is a significant impact on the habitat. Fragmentation introduces several new factors in the evolutionary history of natural populations of plants and animals. These changes affect the demographic parameters of mortality and birth rates of different species and, therefore, the structure and dynamics of ecosystems. In the case of arboreal species, the abundance of pollinators, dispersers, predators, and pathogens alters seedling recruitment rates; fires and microclimate changes, which affect the edges of the fragments more intensely, alter the mortality rates of trees. These factors are related to biological phenomena that affect plant birth and mortality, such as the edge effect, genetic drift, and interactions between plants and animals. In the area where the enterprise is located, in addition to the decrease in biodiversity in the forest, the suppression of vegetation will cause a reduction in connectivity between the remaining fragments in the area of influence, which will become less protected and suffer greater edge effects. Given the importance of maintaining habitat connectivity, the reduction caused by habitat fragmentation is considered a relevant negative impact of high magnitude

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

The locational alternatives with the smallest suppression area are selected to minimise this impact. The project also conducts restoration efforts for flora and habitats for fauna species. Rescuing flora includes removing specimens and seeds of different species belonging to the vegetation present in the enterprise area. Its general objective is to collect seeds and seedlings for restoration, to conserve genetic variability. Priority is given to rescuing species threatened with extinction as a preventive measure during the project's implementation phase. It is the entrepreneur's responsibility, with the application term considered to be short-term but with long-term benefits. The forest restoration project is an offset measure that aims to reintroduce the species rescued during the implementation of the enterprise, and others produced in the seedling nursery, aiming to improve environmental conditions of areas close to the enterprise that is altered. In this project, the main goal will be the implantation of native plant species, which will form fragments, aiming at decreasing the impact and improving the conditions of the environment in the area and offering the formation of a habitat that can shelter the fauna locally. It will be an offset measure, with the term of application remaining longterm, reflecting long-term benefits. In addition, investment in existing or new protected areas as compensatory measures is planned to maintain and protect habitat and species, besides creating ecological corridors. The main stakeholders involved are: -Vale employees -Specialists from consultancies and universities are interested in conducting environmental studies and programs. -The environmental agencies monitor all the processes. -The surrounding communities. According to the 2023 results, the Mariana Complex had 21.4 hectares of suppressed area, 82.3 hectares of recovered area and 196.17 hectares of compensated areas.

Row 10

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Indireto

(11.9.1.3) Impacto

Selecione de:

☑ Outro, especifique **:**Fauna scaring

(11.9.1.4) Descrição do impacto

The impacts of increased noise, dust, vehicular, and human traffic can cause the displacement of individuals from the surrounding areas, leading to a loss of biodiversity. However, this impact is considered reversible as it was only intense during the implementation phase. It is also classified as local, reaching the limits of the indirectly affected area. In terms of relevance, it is moderately significant as it affects only a small portion of the community and is expected to return to previous levels. Based on these evaluation criteria, this impact is of moderate magnitude. In terms of environmental assessment parameters, the increase in traffic, noise, and dust is temporary, discontinuous, real, direct, occurring in the short term, and of a negative nature.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

The Program for Monitoring Plant Suppression and Fauna Rescue has been implemented to address this impact. This program is licensed by IBAMA (the federal environmental agency) in compliance with the guidelines of Normative Instruction No. 146, issued on January 10, 2007. This instruction establishes the criteria and standards for requesting authorization to capture, collect, and transport fauna in Brazil. In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on fauna species. In 2023 three animals from two species were rescued. One was released in adjacent areas and the other two animals were young birds that remained in the nest until they were fully grown. The nest area was marked and isolated.

Row 11

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Perda de espécies raras e ameaçadas

(11.9.1.4) Descrição do impacto

Implementation mining project structures and expansions lead to the suppression of native vegetation and the reduction of natural habitats. The fragmentation generated by the suppression of vegetation in mining projects is reinforced by external pressure, with deforestation and urbanization. The creation of borders and anthropized areas can affect fauna's movement between fragments, limiting gene flow and reducing their genetic variability. Additionally, the edge effect caused by wind, light, and dust exposure can negatively impact on animal survival up to approximately 300 meters from the edge. The conversion of natural habitats into modified habitats leads to the loss of individuals or fauna specimens. Among the species that may be affected are rare, endemic, and threatened, which may suffer indirect impacts from fragmentation. Some of the species that are particularly vulnerable to these impacts include the threatened Hydromedusa maximiliani (reptile), Spizaetus tyrannus, Pseudastur polionotus, Amadonastur lacernulatus, Sporophila frontalis and Sporophila falcirostris (birds), Dicotyles tajacu, Chrysocyon brachyurus, Lycalopex vetulus, Leopardus pardalis, Leopardus tigrinus, Puma concolor, Alouatta caraya, Sapajus nigritus, Callicebus nigrifrons and Tapirus terrestris (mammals).

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

In response to the impact of vegetation suppression, mitigation actions and environmental compensation programs are implemented to restore habitats and invest in protected areas. The Vegetation Suppression Program, which involves eliminating vegetation cover, is an unavoidable activity for certain project structures, such as the pit, due to their fixed location. This program aims to closely monitor all suppression actions and ensure they are limited to the necessary area, minimizing the impact on vegetation. Additionally, Flora Rescue Programs are in place to rescue individuals, seeds, and seedlings of species affected by vegetation suppression. These rescued individuals are used for seedling production and population restoration within recovery and restoration actions, with a focus on conserving genetic material. To further mitigate the impact of vegetation suppression, compensation actions are implemented through investments in protected areas and the creation of new protected areas. These measures contribute to the preservation and enhancement of natural habitats. Throughout this process, various stakeholders, including universities, research institutions, consulting companies, associations, and community members, actively participate in program implementation, the licensing process, and community meetings. Their collaboration and expertise play a crucial role in the success of these initiatives. The combined efforts of these programs and actions aim to minimize the loss of rare and threatened species, promoting the restoration and conservation of biodiversity in the affected areas. Throughout the process, various stakeholders, including universities, research institutions, consulting companies, associations, and community members, actively participate in program implementation, the licensing process, and community meetings.

Row 12

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Conversão e/ou degradação de habitats naturais (diferentes de florestas)

(11.9.1.4) Descrição do impacto

Supressing native vegetation cover for mining operations and associated infrastructure, can result in the loss and reduction of habitats for fauna and flora species. The fragmentation of natural habitats can disrupt the dispersal ability of flora and fauna specimens, and the conversion of habitats can force specimens to migrate to surrounding natural environments, potentially causing imbalances in the receiving communities. This movement, coupled with increased vehicle and machinery traffic, can lead to a rise in accidents involving animals. These direct and indirect impacts resulting from vegetation removal are assessed for all mines in the Vargem Grande Complex, and specific measures are implemented to minimize, restore, and compensate for them.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To minimise environmental impacts, the Vargem Grande Complex implements various programs and procedures for vegetation and material removal. These include field demarcation, hiring specialized companies, determining access and storage areas, and defining procedures for vegetation removal. To reduce impacts on animal and plant species, several programs are currently in place: - Flora Rescue Program: Preserving genetic heritage, conserving rare and threatened species, acquiring scientific knowledge, and rehabilitating degraded areas. Regarding flora rescue, 1.866 individuals were recovered in 2023, including seedlings and epiphytes. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas - Fauna Rescue Program: Monitoring deforestation fronts and rescuing displaced animals. - In 2023, the Fauna Rescue and Relocation Programme was carried out in the areas to be suppressed in the Vargem Grande Complex. Biologists and veterinarians accompanied the deforestation, but no animals were observed during the activities. Recovery of Degraded Areas: Rehabilitating degraded areas, protecting soil, controlling erosion, restoring local flora, and minimizing visual impact. – Environmental Compensation Actions: Restoring areas, planting endangered species, and creating protected areas to preserve affected flora and fauna. The main stakeholders involved include Vale employees, specialists from consultancies and universities, environmental agencies, and the surrounding communities.

Row 13

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Perda de espécies raras e ameaçadas

(11.9.1.4) Descrição do impacto

Removing native vegetation cover can have severe consequences for both flora and fauna species, resulting in the loss or reduction of habitats and even the extinction of certain rare, endemic, or threatened species. These include species such as the threatened Micropygia schomburkgii, Sporophila angolensis, Sporophila falcirostris (birds), Leopardus pardalis, Puma concolor, Dicotyles tajacu, Chrysocyon brachyurus (mammals)

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

TVale implements programs to minimise the impact on fauna and flora species, with specific initiatives that include: - Flora Rescue Program: This program aims to preserve the genetic heritage of local flora, conserve rare and threatened species, acquire scientific knowledge about affected environments, and rehabilitate degraded areas. - Regarding flora rescue, 1.866 individuals were recovered, including seedlings and epiphytes. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas. Recovery of Degraded Areas: This program focuses on rehabilitating areas affected by the project, including soil protection, erosion control, recovery of local flora, and minimizing visual impact on the landscape. - Environmental Compensation Actions: These actions involve restoring areas and planting endangered and legally protected species, as well as creating protected areas to preserve the flora and fauna impacted by the project. Vale's Biofactory in the Quadrilátero Ferrífero in Minas Gerais plays a crucial role in multiplying native flora specimens using biotechnology. The Biofactory produces plantlets and seedlings of Atlantic Forest and Cerrado (tropical savanna in eastern Brazil) species, including threatened and endemic ones, for the recovery of degraded areas and compensatory measures. In 2023, using the technological processes developed at the Biofactory, 25,993 seedlings of 18 key species for restoration were produced and 760 seedlings were planted in the field. By the traditional method, not using the Biofactory's technology, 28,433 seedlings of 37 key species for restoration were produced and 12,347 seedlings were planted in the field. Vale is a signatory to the principles of conservation/compensation, which aim to avoid a net loss of species because of its activities. In this sense, in addition to meeting a condition of the Abóboras Mine Expansion Project, Vale proposed to develop protocols for obtaining viable seedlings for the conservation of endangered plant species, such as the cactus Arthrocereus glaziovii. This plant occurs naturally in ferruginous rupestrian fields and is in danger of extinction. The aim of the project was to develop an in vitro propagation and acclimatization protocol, contributing to the conservation of the species.

Row 14

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Conversão e/ou degradação de habitats naturais (diferentes de florestas)

(11.9.1.4) Descrição do impacto

Supressing native vegetation cover for mining operations and associated infrastructure can result in the loss and reduction of habitats for fauna and flora species. The fragmentation of natural habitats can disrupt the dispersal ability of flora and fauna specimens, and the conversion of habitats can force specimens to migrate to surrounding natural environments, potentially causing imbalances in the receiving communities. This movement, coupled with increased vehicle and machinery traffic, can lead to a rise in accidents involving animals. These direct and indirect impacts resulting from vegetation removal are evaluated for all mines in the Paraopeba Complex, and specific actions are implemented to minimize, recover and compensate for them.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To minimise environmental impacts, the Paraopeba Complex implements various programs and procedures for vegetation and material removal. These include field demarcation, hiring specialized companies, determining access and storage areas, and defining procedures for vegetation removal. To reduce impacts on wild fauna and plant species, several programs are currently in place: - Flora Rescue Program: Preserving genetic heritage, conserving rare and threatened species, acquiring scientific knowledge, and rehabilitating degraded areas. Regarding flora rescue, 292 individuals were recovered in 2023, including seedlings and epiphytes, as well as 300 grams of seeds belonging to five different species. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas. - Fauna Rescue Program: Monitoring deforestation fronts and rescuing displaced animals. In 2023, the Fauna Rescue and Relocation programme carried out at the Paraopeba Complex scared away two reptiles (Tropidurus itambere) to an adjacent area and relocated two stingless bees (Trigona spinipes and Tetragonisca angustula) to Vale's meliponary. There were no sightings of injured animals or those with locomotion difficulties.- Recovery of Degraded Areas: Rehabilitating degraded areas, protecting soil, controlling erosion, restoring local flora, and minimizing visual impact. - Environmental Compensation Actions: Restoring areas, planting endangered species, and creating protected areas to preserve affected flora and fauna. The main stakeholders involved include Vale employees, specialists from consultancies and universities, environmental agencies, and the surrounding communities. The results of the restoration and protection actions implemented in 2023 include a total of 111.74 hectares of permanently recovered areas, all of which are inserted in wilderness and hotspots.

Row 15

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Perda de espécies raras e ameaçadas

(11.9.1.4) Descrição do impacto

Removing native vegetation to create space for mining operations and associated structures can harm the natural environment. It may result in the loss and reduction of habitats for fauna species and the suppression of native forest vegetation and grassland areas, ultimately reducing biodiversity. The fragmentation of natural habitats can affect the ability of flora and fauna specimens to disperse, and the conversion of habitats can lead to the migration of specimens to the surrounding natural environments, which can cause an imbalance in the receiving communities. This movement associated with the increased traffic of vehicles and machinery can lead to an increase in cases of accidents with animals. These direct and indirect impacts resulting from vegetation removal are evaluated for all mines in the Paraopeba Complex, and specific actions are implemented to minimize, recover and compensate for them. Some of the species that are particularly vulnerable to these impacts include the threatened Scytalopus iraiensis, Spizaetus tyrannus, Culicivora caudacuta (birds), Chrysocyon brachyurus, Leopardus pardalis and Puma concolor (mammals)

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To minimise environmental impacts, the Paraopeba Complex implements various programs and procedures for vegetation and material removal. These include field demarcation, hiring specialized companies, determining access and storage areas, and defining procedures for vegetation removal. To reduce impacts on animal and plant species, several programs are currently in place: - Flora Rescue Program: Preserving genetic heritage, conserving rare and threatened species, acquiring scientific knowledge, and rehabilitating degraded areas. Regarding flora rescue, 292 individuals were recovered, including seedlings and epiphytes, as well as 300 grams of seeds belonging to five different species. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas. - Fauna Rescue Program: Monitoring deforestation fronts and rescuing displaced animals. In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species. In 2023, the Fauna and Rescue and Relocation programme carried out at the Paraopeba Complex scared away two reptiles (Tropidurus itambere) to an adjacent area and relocated two stingless bees (Trigona spinipes and Tetragonisca angustula) to Vale's meliponary. There were no sightings of injured animals or those with locomotion difficulties. - Recovery of Degraded Areas: Rehabilitating degraded areas, protecting soil, controlling erosion, restoring local flora, and minimizing visual impact. - Environmental Compensation Actions: Restoring areas, planting endangered species, and creating protected areas to preserve affected flora and fauna. The main stakeholders involved include Vale employees, specialists from consultancies and universities, environmental agencies, and the surrounding communities.

Row 16

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Desmatamento e/ou degradação florestal

(11.9.1.4) Descrição do impacto

The complex's natural habitat consists of forest formations and rupestrian grassland. The suppression of vegetation in these areas can lead to the loss and reduction of habitats for both flora and fauna, resulting in a decrease in populations and a reduction in the production and dispersal of propagules. This reduction can also lead to a decrease in genetic variability in areas of direct influence, which is considered a highly relevant and negative impact. As the suppression of native vegetation is sometimes an unavoidable impact on the implementation and operation of mines, since we have structures with locational rigidity it is necessary to apply mitigating measures, such as monitoring of suppression, with the rescue of flora and fauna, and recovery and offset measures, such as the creation of a forest nursery, reforestation or other action agreed between the applicant and the competent environmental authority focused on the compensation of impacts.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

The Flora Rescue Project aims to minimise the resulting acts of the suppressing natural habitats. As flora recovery activities in areas of natural suppression environments are important, in the sense of safeguarding a portion of the genetic heritage of the plant species occurring there. Notably, the intrinsic carrying out a complete flora rescue program is conducted to establish priority actions, based on a selection of plant species to be covered by the program so that the effort be directed towards the rescue and conservation of these. The actions undertaken in this program are carried out to preserve genetic resources and can subsidise ecological restoration projects, through the availability of seeds and propagules of some plant species. The species selection is based on various factors, including proposed indications and regional occurrences. These factors arise from the rescue of flora, which Vale has carried out. In 2023 there was no demand for flora rescue in the Brucutu Complex areas. In the Água Limpa Complex areas, 123 seedlings of fifteen plant species were recovered, as well as 273 grams of Hymenaea courbaril seeds and 300 grams of Euterpe edulis seeds. The material collected was sent to the nursery. The complex has a nursery for producing and maintaining seedlings of native species that are used in restoration projects and environmental compensation. Seeds are processed there, and seedlings of various flora species are produced, including rare, endemic and endangered species. The results of the restoration and protection actions implemented in 2023 include a total of 43.54 hectares of recovered areas, all of which are inserted in wilderness and hotspots and 21.30 hectares of compensated areas.

Row 17

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Fragmentação de ecossistemas

(11.9.1.4) Descrição do impacto

The main impact of the implementation and operation of the complex is related to the suppression of vegetation for the implementation and maintenance of structures. This results in reduced connectivity between the remaining fragments of habitat, which is a significant issue for the local ecosystem. Fragmentation introduces new factors into the evolutionary history of natural populations of plants and animals. Different species are affected in different ways, which can alter the demographic parameters of mortality and birth rates, and ultimately impact the structure and dynamics of the ecosystem. However, the region where the complex is located is characterized by a long history of anthropic intervention in its ecosystems, with the remaining forests currently fragmented and at various stages of

succession. Thus, the removal of vegetation will lead to a reduction in connectivity between the remaining fragments in the area of influence, and the negative impact is significant, but of moderate magnitude when considered in the current context.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To minimize the negative effects of habitat fragmentation, it is crucial to monitor vegetation suppression and rescue any flora before suppression of vegetation activities take place. In some cases, it is also necessary to rescue and relocate fauna, particularly for species that have difficulty moving from the area to be deforested. The fauna rescue and relocation actions are pertinent for some groups of fauna species, especially those that have difficulty moving from the area to be deforested. Actions of rescue, translocation, relocation or destination, during deforestation, occurred only in case of need, in other words, when the conditions verified did not allow the animal to move by its own means. This program executed both in Brucutu and Água Limpa mines, the program's primary objectives are to plan construction activities while monitoring deforestation activities, as well as execute actions to rescue, sort, and relocate captured fauna. In Brucutu the Program for Monitoring Threatened Fauna Species is being carried out in the mine's areas of influence, to monitor the species against the changes caused by the operation and expansions of the mine. In addition, in the Complex the monitoring of invertebrates, fish, reptiles, amphibians, birds and mammals has been going on for almost 10 years. The main stakeholders involved in the project are: -Vale employees. -Specialists from consultancies and universities are interested in conducting environmental studies and programs. -The environmental agencies monitor all the processes. -The surrounding communities. The results of the restoration and protection actions implemented in 2023 include a total of 43.54 hectares of recovered areas, all of which are inserted in wilderness and hotspots and 21.30 hectares of compensated areas.

Row 18

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Outro, especifique :Fauna scaring

(11.9.1.4) Descrição do impacto

The impacts resulting from the increased levels of noise, dust, and traffic caused by the enterprise lead to the displacement of individuals from the areas surrounding the enterprise and a loss of biodiversity. But is classified as reversible, as it will be intense only during the implementation phase; local, as it reaches the limits of the indirectly affected area; moderately relevant as it is expected to reach the fauna community and the situation will return to previous levels. The classification in these valuation criteria makes this impact of moderate magnitude. As for the environmental assessment parameters, the increase in traffic, noise and dust will have a temporary duration; discontinuous; real; direct; occurring in the short term and of a negative nature

(11.9.1.5) Consequência

Selecione de:

☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

To address the negative impact of vegetation suppression, our project undertook careful planning and analysis of locational and technological alternatives to minimize the impact on areas with high biodiversity. In addition, there are mitigation actions and environmental offset programs in execution related to the monitoring of suppression, flora rescue, fauna scaring and rescue, habitat restoration and investment in protected areas. The Vegetation Suppression Program, since the elimination of vegetation cover, is an unavoidable activity for the operation of some project's structures, such as the pit, which has locational rigidity. This program aims to accompany all suppression actions and ensure that they extend only to the area strictly necessary, minimizing as much as possible the impact on the vegetation. Before the suppression, we implement flora rescue actions to rescue individuals, seeds, and seedlings of species that will be used to produce seedlings and re-establish populations during the recovery and restoration actions, thus conserving genetic material. The suppression is accompanied by programs for scaring and rescuing fauna. In response to the impact of suppression and fragmentation, the rescue programs are accompanied by programs for scaring and rescuing fauna, which aim to reduce the impacts of suppression on flora and fauna species. In 2023, 23 animals from 12 species were registered, including six species of reptiles, five

species of mammals and one bird. Of these animals, 13 were scared away from the suppression areas, three were rescued and later released in adjacent areas and three were found dead or died.

Row 19

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Perda de espécies raras e ameaçadas

(11.9.1.4) Descrição do impacto

The implementation of mining project structures and eventual expansions lead to the suppression of native vegetation and the reduction of natural habitats. The suppression of native vegetation leads to the reduction or loss of flora individuals, which can affect rare, endemic and threatened species. The edge effect can also compromise the survival of some species of plants, and according to the literature, the effects of exposure to wind, light and dust can be seen at about 300 m from the edge. Among the species that occur in the region that may be affected are threatened species such as Dalbergia nigra (jacaranda).

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

In response to the impact of vegetation suppression, during the planning of the project and its expansions, analyses of locational and technological alternatives were carried out, to avoid impacts in areas or fragments of natural vegetation with greater relevance to biodiversity. In addition, there are mitigation actions and environmental compensation programs in execution related to monitoring suppression, flora rescue and investment in protected areas. The Vegetation Suppression Program is an unavoidable activity for the operation of mining. However, its goal is to minimize the impact on vegetation by ensuring that suppression actions are limited to the necessary area. Before any suppression, flora rescue actions are implemented to save individuals, seeds, and seedlings of the species that will be used to produce seedlings and re-establish populations in recovery/restoration actions. This approach helps conserve genetic material. Additionally, programs are in place to scare and rescue fauna during the suppression. Rescued seeds and plantlets are used to produce seedlings, used in the recovery of degraded areas and in offset plantings. In addition, compensation actions based on investments in protected areas and the creation of new protected areas are also carried out. The Fauna Monitoring Program has been in place at the Complex for more than 10 years, monitoring invertebrates, fish, amphibians, reptiles, birds, and mammals. At the Brucutu mine, endangered species are also monitored, including species such as Hydromedusa maximiliani (reptile), Sporophila frontalis, Sporophila falcirostris, Sporophila angolensis, Spizaetus tyrannus, Urubitinga coronata, Scytalopus iraiensis, Biatas nigropectus (birds), Alouatta guariba clamitans Leopardus pardalis, Puma concolor, Herpailurus yagouaroundi, Chrysocyon brachyurus, Dicotyles tajacu, Tapirus terrestris, Lycalopex vetulus, Lontra longicaudis and Priodontes maximus (mammals).

Row 20

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Fragmentação de ecossistemas

(11.9.1.4) Descrição do impacto

PTVI's mining operations primarily focus on forest regions characterized by predominantly tropical forests that house a diverse range of tree species and serve as habitats for endangered and endemic species. The deforestation process created a fragmentation of forest area which affects the natural habitatsA survey was conducted of the diversity of flora and fauna at the site to be impacted. The survey results were used as a baseline for assessing impacts and planning reclamation actions.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

Baseline studies for flora and fauna have been conducted throughout the area of interest to establish a parameter or impact assessments. Vegetation suppression is monitored to reduce the impact of habitat fragmentation, with the rescue of flora before the actions PTVI has taken corrective action to encourage continuous improvements, such as environmental monitoring activities, reporting, evaluation, implementation of environmental management systems, environmental audits, monitoring of compliance with laws and regulations, and reclamation of post-mining land for environmental management. The main stakeholders involved in the project are: -Vale employees. -Specialists from consultancies and universities are interested in conducting environmental studies and programs. -The environmental agencies monitor all the processes. -The surrounding communities.

Row 21

(11.9.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.9.1.2) Tipo de impacto

Selecione de:

☑ Direto

(11.9.1.3) Impacto

Selecione de:

☑ Desmatamento e/ou degradação florestal

(11.9.1.4) Descrição do impacto

Significant impacts are expected to occur during the implementation and operational phases of mining activities, mainly related to the removal of vegetation cover, acting directly and indirectly on flora and fauna, including the loss of modified and natural habitats, disturbance of existing flora populations, with structural changes and changes in the composition of flora and fauna communities, including aquatic communities and priority and threatened species. The removal of vegetation cover also causes changes in the landscape. The suppression of habitats leads to the loss of flora and fauna specimens, among them endangered and endemic species.

(11.9.1.5) Consequência

Selecione de:

☑ Grave

(11.9.1.6) Probabilidade

Selecione de:

☑ Provável

(11.9.1.7) Descreva a resposta

Baseline studies for flora and fauna have been conducted throughout the area of interest to establish a parameter for impact assessments. Seeds are collected and taken to a nursery, where they are grown into seedlings for subsequent use in the recovery process of the mined areas to mitigate the impact of vegetation suppression actions. Seedlings of various species are produced, including endemic and endangered species. The entire mined area goes through a recovery process, which also considers the re-establishment of the populations of endemic and endangered species and the return of fauna. The recovered regions, as well as the surroundings of the mined areas, are monitored. Research is also conducted for this monitoring. The main stakeholders involved in the project are: -Vale employees. -Specialists from consultancies and universities are interested in conducting environmental studies and programs. -The environmental agencies monitor all the processes. -The surrounding communities. Furthermore, PTVI handed over 140hectares of critical land in a rehabilitated watershed to the Ministry of Environment and Forestry in 2022. The handed-over land was in Pongkeru sub-watershed in Ledu-Ledu and Kawata Villages, Wasuponda Sub-district, East Luwu District, South Sulawesi. PTVI has taken corrective action to encourage continuous improvements, such as environmental monitoring activities, reporting, evaluation, implementation of environmental management systems, environmental audits, monitoring of compliance with laws and regulations, and reclamation of post-mining land for environmental management. PTVI also has a monitoring program of water quality and aquatic biota in Matano Lake, conducted by independence consultant. A rehabilitation border area of Matano lakeshore using freshwater mangrove is conduct in partnership with local government.

Row 22

(11.9.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 7

(11.9.1.2) Tipo de impacto

Selecione de:
☑ Indireto

(11.9.1.3) Impacto

Selecione de:
☑ Outro, especifique **:**Fauna scaring

(11.9.1.4) Descrição do impacto

The generation of dust and noise can generate indirect impacts on habitats, flora, and fauna.

(11.9.1.5) Consequência

Selecione de:
☑ Moderado

(11.9.1.6) Probabilidade

Selecione de:
☑ Provável

(11.9.1.7) Descreva a resposta

Baseline studies for flora and fauna have been conducted throughout the area of interest to establish a parameter for impact assessments. PTVI has taken corrective action to encourage continuous improvements, such as environmental monitoring activities, reporting, evaluation, implementation of environmental management

systems, environmental audits, monitoring of compliance with laws and regulations, and reclamation of post-mining land for environmental management. The main stakeholders involved in the project are: -Vale employees. -Specialists from consultancies and universities are interested in conducting environmental studies and programs. -The environmental agencies monitor all the processes. -The surrounding communities.
[Adicionar linha]

(11.10) As questões de biodiversidade estão integradas em algum aspecto do plano de negócios estratégico de longo prazo? Em caso afirmativo, de que modo?

Objetivos de negócios de longo prazo

(11.10.1) As questões relacionadas à biodiversidade estão integradas?

Selecione de:
☑ Sim, as questões relacionadas à biodiversidade estão integradas

(11.10.2) Horizonte de longo prazo (anos)

Selecione de:
☑ 21-30

(11.10.3) Explique

Focused on maximizing societal value, Vale has made strides in risk reduction and asset review over the past four years, fulfilling our 2019-2022 strategic plan. Having accomplished these objectives, we've restructured our strategic planning, recognizing the need for innovative business practices to shape Vale's future — a company aspiring for more sustainable mining, low-carbon solutions, and disciplined capital allocation. Consequently, Vale has established new strategic pillars for the future, with 'contributing to nature-positive outcomes' being one.Vale recognizes that sustainable solutions, innovative practices, and nature-based solutions integrated into our business model and plans are essential. We understand that nature provides vital services for our operations, such as water supply and climate regulation. However, our activities also impact these services, necessitating that we view our business as a part of nature and integrate our actions with its components — biodiversity, water, climate, and communities — for long-term business continuity.We acknowledge the critical role of biodiversity in sustainable business practices. A long-term goal is to neutralize impacts on biodiversity in new projects and expansions. To this end, Vale issued an internal standard in 2020 that governs its biodiversity management efforts across all business areas, operations, and projects. This standard delineates our risk and impact management approach, which includes comprehensive diagnoses from new project planning stages. These assessments gauge possible interference with protected areas, sensitive habitats, and globally significant species.Our commitment to biodiversity conservation is mirrored in our compliance with local and regional environmental impact regulations. We conduct environmental impact studies before initiating expansions or new projects, ensuring adherence to each region's laws where we operate.Lastly, our ambition to achieve carbon neutrality by 2050 aligns with our biodiversity and forest strategy, specifically the Forest Target, our voluntary commitment to recover and protect 500,000 hectares beyond our borders. This strategy aims to generate positive outcomes for biodiversity, climate, and people.

Estratégia para objetivos de longo prazo

(11.10.1) As questões relacionadas à biodiversidade estão integradas?

Selecione de:

☑ Sim, as questões relacionadas à biodiversidade estão integradas

(11.10.2) Horizonte de longo prazo (anos)

Selecione de:

☑ 5-10

(11.10.3) Explique

The Forest Target within our 2030 Agenda commits to fostering positive impacts for climate, biodiversity, and people. Vale pledges to restore 100k hectares and protect an additional 400k hectares, aligning with global climate and restoration targets. We're focusing on recovery, enhancing vegetation cover, carbon sequestration, and social benefits, through sustainable businesses, primarily agroforestry. With Vale Fund's support, five agroforestry ventures restored over 7k hectares by 2022.In 2022, the Fund contributed to the forestry target through various initiatives, including an Acceleration Program with CERTI Foundation, Darwin Startups, and Palladium, reinforcing five businesses in the 100k hectares recovery portfolio.For the protection aspect, preserving native vegetation cover and carbon stocks, we're collaborating with third-party protected area and exploring Reducing Emissions from Deforestation and forest Degradation (REDD) projects. We have partnerships with the Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio) and other environmental agencies, jointly protecting over 115k hectares of Brazil's Atlantic Forest. Also, Vale is studying new protective strategies, learning, and innovating. A REDD project added in 2022 contributed to safeguarding an additional 50k hectares.Vale commits to preventing and neutralizing significant impacts from new projects and expansions in high-biodiversity-value areas, aiming for no net loss and, if possible, yielding positive impacts. To achieve this, we developed an internal norm standard that regulates biodiversity management—risks and impacts—across our business. In 2022, we continued to implement guidelines and processes through training, project risk analyses, research prioritization, management system requirements, and risk scenario construction. The Carajás Biodiversity Management Plan, published in 2021, exemplifies these strategies.

Planejamento financeiro

(11.10.1) As questões relacionadas à biodiversidade estão integradas?

Selecione de:

☑ Sim, as questões relacionadas à biodiversidade estão integradas

(11.10.2) Horizonte de longo prazo (anos)

Selecione de:

☑ 5-10

(11.10.3) Explique

Our governance model aims to realize the principles of clarity of roles, transparency, and stability that guide our actions. In this sense, in addition to the forums that are established in our governance model, such as the Advisory Committees to the Board of Directors (focused on different areas such as Sustainability and Finance), we have multi-disciplinary thematic groups, with the participation of members from outside Vale, which function as a sounding panel, and which support us on strategic themes. Planning and execution monitoring is carried out for the entire sustainability agenda (and 2030 Sustainability Agenda) to meet the long-term goals established. The 2030 agenda is a priority investment.In 2022, USD 140.5 million was earmarked for voluntary socio-environmental and institutional expenditures with own resources, including those related to Brumadinho. The main actions were in infrastructure and mobility, social protection, health, environmental liabilities, water resources and atmospheric emissions. Vale also allocated USD 94.3 million in incentive funds through contributions to Rights Funds and support to projects of civil society organizations based on four federal tax incentive laws: Fund for Children and Adolescents; Fund for the Elderly; Sports Law and Culture Incentive Law.This strategic aspect encompasses all of Vale's operations.
[Linha fixa]

(11.11) Foi especificada alguma meta mensurável e calendarizada relacionada aos compromissos de redução ou prevenção de impactos para a biodiversidade?

Selecione de:

☑ Sim

(11.11.1) Dê detalhes sobre as metas relacionada(s) ao(s) compromissos de redução ou prevenção de impactos para a biodiversidade e os progressos feitos.

Row 1

(11.11.1.1) Número de referência da meta

Selecione de:

☑ Meta 1

(11.11.1.2) Designação da meta

Recover and protect 500,000 hectares of areas by 2030.

(11.11.1.3) Ano-base

2019

(11.11.1.4) Ano final

2030

(11.11.1.5) Porcentagem da meta alcançada

Selecione de:
☑ 31-40%

(11.11.1.6) Explique

In 2018, Vale announced its 2030 Agenda, aligning with the UN Sustainable Development Goals. One of the targets focuses on the recovery of degraded areas. Building upon our existing conservation initiatives, we have set a more ambitious goal: the Forest Target - to recover and protect 500,000 hectares of areas beyond our borders by 2030. This voluntary target will have positive impacts on biodiversity, climate, and communities. It is also in line with our ambition to achieve net-zero emissions (Scope 1 and Scope 2) by 2050. This goal is also in alignment with and can contribute to Brazil's commitment to restore 12 million hectares of native vegetation, as outlined in the National Policy for the Recovery of Native Vegetation. The target is divided into two components: recovering 100,000 hectares and protecting 400,000 hectares. Regarding the recovery component, which aims to increase vegetation cover and carbon sequestration, we are utilizing mapping and supporting sustainable business models as strategies to reach the 2030 target. Initially, our focus is on agroforestry systems. As for the protection component, which aims to maintain and ensure the quality of native vegetation cover and carbon stocks, we are collaborating with third-party protected areas and Reducing Emissions from Deforestation and forest Degradation (REDD) projects. Vale has already recovery over 12,000 hectares through investments in agroforestry businesses with positive socio-environmental impacts. We have also protected over 115,000 hectares through agreements with seven protected areas. Additionally, in 2022, Vale acquired its first REDD Carbon Credits in partnership with Fundo Vale and Grupo Algar, resulting in the conservation of an equivalent of 50,000 hectares of forests. Furthermore, Vale's 2030 agenda includes goals related to water and climate change, which are interconnected with biodiversity, as they aim to reduce pressures and impacts on nature. In 2023, 177,705 hectares were recovered, of which 165,093 were protected and 12,612 recovered.
[Adicionar linha]

(11.12) A organização adotou a prevenção e/ou a minimização como estratégias para prevenir ou mitigar impactos negativos significativos para a biodiversidade?

Selecione de:

☑ Sim

(11.12.1) Dê exemplos relevantes específicos para a empresa da implementação de ações de prevenção e minimização para gerenciar impactos negativos para a biodiversidade.

Row 1

(11.12.1.1) ID do projeto de mineração

Selecione de:
☑ Projeto 1

(11.12.1.2) Abordagem e tipo de medida

Prevenção
☑ Criação do projeto

(11.12.1.3) Descrição

The first stage of impact mitigation hierarchy (HMI, in Portuguese acronym para hierarquia de mitigação de impacto) is impact avoidance. Studying, knowing, and understanding important environmental attributes (species of interest for conservation, species and critical environments, and protected areas) is the basis for assessing risks and impacts on biodiversity in areas of interest for expansions and new projects. It is essential to involve environmental teams along with engineering, planning, and project teams in short, medium, and long-term planning to avoid impacts within the scope of actions, such as "Working together with project engineering to minimize current and future areas of intervention" and the "Vegetation Suppression Minimization Subprogram," which are already implemented by the operational environmental teams. Avoiding unnecessary interventions and specific impacts can directly affect licensing terms and costs with studies and programs related to licensing conditions. Vale has been seeking to work with the Impact Mitigation Hierarchy (HMI) approach in pilot projects to develop adaptations, capture opportunities to prevent and mitigate impacts, and plan increasingly effective impact management and conservation actions for biodiversity. Working with the biodiversity management strategy against the background of HMI is an opportunity to rethink the management process, focusing on organizing and improving performance, making it more effective and efficient to obtain a neutral or positive balance of impacts. At the S11D Mine in Carajás, the collaboration between environmental, engineering, planning, and other agencies resulted in several changes to the master plan, which avoided impacts on over 1,100 hectares of natural habitat. The Project has committed not to disturb the habitat of a key plant species within the mine footprint until research in propagation and translocation techniques are proven to enable the project to achieve no net loss for the species. In addition, Vale's Biodiversity Management Plan in Carajás has a team dedicated to collecting seeds and propagules from Serra Norte. This team has been systematically collecting seeds (twice a month) in N3 and sending them to the “Banco Ativo de Germplasma” from the National Center for Genetic Resources. This activity is expected to be continued in the N3 Plant Germplasm Saving Program.

Row 2

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

Once efforts have been made to avoid impacts, it is necessary to identify, analyse and evaluate any remaining effects. Control and mitigation actions are established to minimize impact on biodiversity during implementation and operation. Environmental controls must be installed, vegetation suppression, monitored, and actions to drive away, rescue and relocate fauna and flora specimens, among other mitigation measures, are implemented. The Carajás Complex Action Plan presents actions implemented or challenges related to impact mitigation. Among these actions, environmental control measures are implemented to minimize the impacts of work and operations on natural environments. These measures include containment systems, effluent collection and treatment, drainage devices, solid waste collection and disposal and sprinkler systems for access roads. Monitoring programs, such as effluent and surface water monitoring, are conducted to ensure the effectiveness of these control systems. Additionally, impact mitigation actions like the Wildlife Management Program and fauna scaring tactics during vegetation suppression are implemented. These initiatives involve monitoring wildlife, bioindicators and controlling changes in the wildlife community, among other measures. In 2023, 869 animals of 184 species were recorded in the fauna rescue and scaring programs in S11D, including 31 species of amphibians, 68 species of birds, 50 species of reptiles and 35 species of mammals. Additionally, exclusive viaducts for animal passage were constructed, a first in Brazil, to minimize the impact. Both viaducts were built by Vale in compliance with IBAMA's requirement for the implementation of the S11D Railway Branch. These viaducts are situated in the southeast region of Pará and are among the 32 fauna passages established along the 101kilometer branch line. Rescuing flora is an essential mitigation measure aiming to save individuals and seeds for future area recovery and habitat restoration. This action helps preserve genetic heritage. In 2023 during the suppression actions in S11D, 5,467 individuals belonging to 89 species were collected, as well as 235.901 kg of seeds and 301 seedlings of 32 species. In addition, 10 rare endemic or threatened species were rescued. All this material was separated, processed, weighed, identified and taken to the for Forest Nursery.

Row 3

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

The complexity of environmental licensing in Carajás poses a bottleneck for the company's strategic planning. The endemic and threatened species of the Carajás Flora are important part of this process. The absence of studies and specific conservation measures for these species could limit future operational areas and negatively impact the company's environmental and sustainability agenda. Vale Institute for Sustainable Development is undertaking the Rare, Endemic, and Threatened Plants of the Carajás National Forest initiative. This project focuses on ecological and evolutionary studies applied to conservation, exploring factors that influence the protection of populations of rare, endemic, and endangered plant species in the Carajás National Forest. The aim is to identify vulnerabilities in populations impacted directly or indirectly by mining and provide essential data to support licensing processes, monitoring, management, mitigation, and compensation actions. Accurate information collected through this project contributes to the consolidation of biodiversity data in the company's influence areas, enhancing understanding of natural ecosystems. The findings will inform decision-makers about operational risks and guide efforts to manage endangered species, as well as identify alternatives for conserving and restoring priority areas. Ultimately, the results can contribute to cost reduction, optimize licensing processes, and ensure compliance with conditions set by Brazilian environmental agencies for Vale's mining activities.

Row 4

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.12.1.2) Abordagem e tipo de medida

Prevenção

☑ Seleção do local

(11.12.1.3) Descrição

The study of locational alternatives is a mandatory step of the environmental impact study, which aims to evaluate different viable locations for setting up an enterprise to select the place with the most negligible socio-environmental impact. For example, to continue the waste disposal activity at the Conceição Mine, there was a need to find a new area to dispose of the waste for the next few years. Three areas were analysed, located within a radius of approximately 15 km from the project to meet this new demand for waste disposal. The southeastern expansion alternative of the Canga Sterile Disposal Pile was found to be the most environmentally advantageous option because it offers the possibility of reusing the area already impacted by the existing pile (Canga Leste), and it requires the second smallest size for suppressing native vegetation. Additionally, it has the most negligible impact on drainages, and is entirely situated in an area owned by Vale.

Row 5

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

The Environmental Impact Statement has a series of Programs that work in conjunction with the project's control systems to minimize negative impacts and maximize positive ones: Noise emissions: During the works, the noise will be restricted to that which arises from the machines and vehicles used in preparing the ground next to the new open areas. All the equipment and vehicles at the service of the enterprise pass preventive maintenance according to Vale standards, aiming at the proper operation that generates less noise and pollution. Atmospheric Emissions: During the works, the primary sources of air pollution include dust generated mainly during earth handling, machinery and equipment movement, and civil works, as well as gases generated by vehicle exhaust and machines used in the results. Water trucks wet the roads and work fronts for the entire work period, in addition to the constant maintenance of equipment that uses fuels so that there is no excessive consumption and that it releases gases above the permitted limits. Liquid Effluents: Chemical toilets are used in work and hydraulics at construction sites and on the main fronts of service. The effluents are transported to a plant sewage treatment of the mine in operation through sucking trucks. Regarding oily effluents, it is essential to note that the maintenance of the equipment is carried out in the workshops that the Mining Complex of Itabira has already licensed and dedicated systems for the treatment of these effluents properly. Solid Waste: Solid waste is adequately managed according to the Waste Management Program Solids of the Mining Complex of Itabira. Thus, the mitigation of the impacts caused by the generation of waste will consist of implementing of a management program based on the establishment of management measures involving handling, packaging, transportation, temporary storage, and final destination. Controlling of atmospheric emissions, liquid effluents, and solid waste reduces in the impact on biodiversity about the pollution of habitats. And noise control enables a reduction in scaring of fauna.

Row 6

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**Reducing the impact for fauna and flora species

(11.12.1.3) Descrição

The suppression of vegetation and consequent loss/reduction of habitat will cause the spontaneous escape of fauna specimens or harm their dispersion. The Program for Monitoring the Suppression, scaring, and Eventual Rescue of Fauna is a vital tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best action strategy and suppression direction, as well as the selection of release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue, and relocate captured individuals. In 2023, 34 animals of 14 species were recorded in the fauna rescue and scaring programs, including two species of amphibians, six species of reptiles and six species of mammals. Of these animals, 18 were scared away from the suppression areas, two were rescued and later released in adjacent areas and six were found dead or died. The Flora Rescue Project is another essential tool that operates in the areas to be suppressed. This project saves the genetic heritage and enriches the recovery and restoration actions. Before the acts to suppress native vegetation, specimens, and seeds are rescued in the areas to be impacted, taken to the nursery and, later, the seedlings produced are used in actions to recover degraded areas and restore habitats and offset programs.

Row 7

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**Reducing the impact of vegetation suppression

(11.12.1.3) Descrição

The proposed mitigating measures were aimed at reducing the actual or potential adverse environmental impacts resulting from the action of removing the vegetation necessary for the implementation of the project. Thus, it constitutes an element of planning, as well as guidance for the company's operations, in order to reduce its environmental impact. The preparation of mitigation measures was based on the impact matrix. In project implementation, the suppression of native and planted vegetation of different types is planned. All developments have a vegetation suppression program whose main objective is to ensure that only the strictly necessary areas will be suppressed. To this end, the necessary and licensed areas are demarcated in the field, and the entire suppression process is monitored and directed. The alteration of the natural environment with the removal of vegetation produces significant changes in the diversity and abundance of plants and animals, generating ecological and genetic effects. The main impact is the loss of biodiversity. Considering the importance of vegetation for the conservation of biodiversity, maintaining the integrity of the soil and water resources, in addition to the interaction with wildlife, it is considered pertinent to adopt measures to mitigate the impacts related to the reduction of local biodiversity in different types of vegetation, resulting from the suppression of vegetation necessary for the expansion of enterprises. The loss of genetic variability in plant populations could be mitigated through measures such as flora rescue and reintroduction of plant species, contemplated in the flora program through flora rescue and restoration projects. Endangered species are prioritized in the flora rescue and later, these and other species are reintroduced during the implementation, operation and closure of the projects

Row 8

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

Several environmental controls are implemented in order to avoid and reduce impacts related to the discharge of effluents, erosive processes, and waste generation, among others that may cause alterations in the physical environment that lead to impacts on biodiversity. The Mariana Complex mines undergo thorough environmental impact assessments and continuous monitoring to evaluate water quality and noise levels, aiming to mitigate potential negative environmental impacts.

Neglecting water quality monitoring can lead to the loss of aquatic species or species dependent on the water source for drinking. And the noises, if not monitored, can in wildlife scaring away. The impact of noise levels is generally minimized by preventive maintenance of equipment and vehicles. And through this, it also allows fewer gases to be emitted which results in better air quality

Row 9

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**Reducing the impact on fauna and flora species

(11.12.1.3) Descrição

The Rescue Flora Programs are initiated before the vegetation suppression actions, the rescue of seeds and specimens aiming the production of seedlings and germplasm conservation. The production of seedlings in nurseries favors the production of those rescued, focusing on the restoration of degraded areas and conservation of genetic variability. An example of this Program, in mining projects 4 and 5, in the preparation of the Protocol Cattleya milleri micropropagation in partnership with Vale Institute of Sustainable Development (ITV-DS). Cattleya milleri is an endemic species from the canga ecosystems (rupestrian grassland) of Quadrilátero Ferrífero (Minas Gerais, Brazil) that is currently classified as a critically endangered species because of its restricted occurrence and habitat loss and degradation. In this Protocol, the in vitro propagation technique proved to be a viable alternative for production in large-scale of seedlings for this species. A high number of seedlings were generated, later these seedlings were acclimatized and rustified successfully, which allowed the reintroduction of plants in a natural environment. The results obtained provide subsidies for conservation programs and expansion of the production of seedlings and introduction into a natural environment. The suppression of vegetation and consequent loss/reduction of habitat will cause the spontaneous escape of fauna specimens or harm their dispersion. The Program for Monitoring the Suppression, Disappearance and Eventual Rescue of Fauna is an extremely important tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best action strategy and suppression direction, as well as the selection of release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue and relocate captured individuals. In 2023 three animals from two species were rescued. One was released in adjacent areas and the other two animals were young birds that remained in the nest until they were fully grown. The nest area was marked and isolated.

Row 10

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.12.1.2) Abordagem e tipo de medida

Prevenção

☑ Seleção do local

(11.12.1.3) Descrição

Effective management of risks and impacts requires a thorough diagnosis from initial entry into new territories to final project design. In the planning stages of new projects and expansions, the environmental team, and engineering, evaluates possible interferences in natural heritage areas and protected areas, as well as sensitive habitats and species. According to Brazilian legislation, world Heritage Site areas and protected areas of IUCN categories I to IV are always avoided, the latter being considered a fatal flaw of the projects. The risk analysis procedure prioritizes biodiversity features that can be used as information for this analysis and location definition. It is one of the processes of biodiversity's internal normative standard. The study of locational alternatives is a mandatory step of the environmental impact study, which aims to evaluate different viable locations for setting up an enterprise to select the location with the most negligible socio-environmental impact.

Row 11

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**Reducing the impact for fauna and flora species

(11.12.1.3) Descrição

The suppression of vegetation and consequent loss/reduction of habitat will cause the spontaneous escape of fauna specimens or harm their dispersion. The Program for Monitoring the Suppression, scaring, and Eventual Rescue of Fauna is a vital tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best action strategy and suppression direction, as well as the selection of release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue, and relocate captured individuals. In 2023, the Fauna Rescue and Relocation Programme was carried out in the areas to be suppressed in the Vargem Grande Complex. Biologists and veterinarians accompanied the deforestation, but no animals were observed during the activities. The Flora Rescue Project is another essential tool that operates in the areas to be suppressed. This project saves the genetic heritage and enriches the recovery and restoration actions. Before the acts to suppress native vegetation, specimens, and seeds are rescued in the areas to be impacted, taken to the nursery and, later, the seedlings produced are used in actions to recover degraded areas and restore habitats and offset programs. Regarding flora rescue, 1.866 individuals were recovered, including seedlings and epiphytes. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas

Row 12

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles físicos

(11.12.1.3) Descrição

Vale takes environmental control measures seriously and implements them at all its undertakings. These measures focus on minimizing work and operations' impacts on natural environments. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, monitoring programs are conducted to monitor these measures, such as effluent monitoring, and surface water monitoring among others, to follow up and guarantee the effectiveness of the control systems.

Row 13

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.12.1.2) Abordagem e tipo de medida

Prevenção

☑ Seleção do local

(11.12.1.3) Descrição

Effective management of risks and impacts requires a thorough diagnosis from initial entry into new territories to final project design. In the planning stages of new projects and expansions, the environmental team, and engineering, evaluates possible interferences in natural heritage areas and protected areas, as well as sensitive habitats and species. According to Brazilian legislation, world Heritage Site areas and protected areas of IUCN categories I to IV are always avoided, the latter being considered a fatal flaw of the projects. The risk analysis procedure prioritizes biodiversity features that can be used as information for this analysis and location definition. It is one of the processes of biodiversity's internal normative standard. The study of locational alternatives is a mandatory step of the environmental impact study, which aims to evaluate different viable locations for setting up an enterprise to select the location with the most negligible socio-environmental impact.

Row 14

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**Reducing the impact for fauna and flora species

(11.12.1.3) Descrição

The suppression of vegetation and consequent loss/reduction of habitat will cause the spontaneous escape of fauna specimens or harm their dispersion. The Program for Monitoring the Suppression, scaring, and Eventual Rescue of Fauna is a vital tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best action strategy and suppression direction, as well as the selection of

release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue, and relocate captured individuals. In 2023, the Fauna and Flora Rescue and Relocation programme carried out at the Paraopeba Complex scared away two reptiles (Tropidurus itambere) to an adjacent area and relocated two stingless bees (Trigona spinipes and Tetragonisca angustula) to Vale's meliponary. There were no sightings of injured animals or those with locomotion difficulties. The Flora Rescue Project is another essential tool that operates in the areas to be suppressed. This project saves the genetic heritage and enriches the recovery and restoration actions. Before the acts to suppress native vegetation, specimens, and seeds are rescued in the areas to be impacted, taken to the nursery and, later, the seedlings produced are used in actions to recover degraded areas and restore habitats and offset programs. Regarding flora rescue in 2023, 292 individuals were recovered, including seedlings and epiphytes, as well as 300 grams of seeds belonging to five different species. The rescued individuals were replanted at Vale's Native Seedling Production Centre. In the future they will be reintroduced through programmes to restore degraded areas.

Row 15

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles físicos

(11.12.1.3) Descrição

Vale takes environmental control measures seriously and implements them at all its undertakings. These measures focus on minimizing work and operations' impacts on natural environments. These measures consist of containment systems, collection and treatment of effluents, drainage devices, collection and disposal of solid waste, and sprinkler systems for access roads. In parallel, monitoring programs are conducted to monitor these measures, such as effluent monitoring, and surface water monitoring among others, to follow up and guarantee the effectiveness of the control systems.

Row 16

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.12.1.2) Abordagem e tipo de medida

Prevenção

☑ Seleção do local

(11.12.1.3) Descrição

Effective management of risks and impacts requires a thorough diagnosis that spans from initial entry into new territories to final project design. In the planning stages of new projects and expansions, the environmental team, together with engineering, evaluates possible interferences in natural heritage areas and protected areas, as well as sensitive habitats and species. World Heritage Site areas and protected areas of IUCN categories I to IV are always avoided, the latter being considered a fatal failure of the projects, according to Brazilian legislation. In the evaluation of locational alternatives for the expansion of the waste, rock dumps (PDE, in Portuguese, pilha de disposição de estéril) South and PDE 03, it was considered as a premise the prioritization of expansions in more altered areas about vegetation cover and within the limits of Vale's properties, avoiding the need for intervention in areas of higher quality native vegetation cover.

Row 17

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

The mines, as well as their expansion projects, have environmental control systems in place to treat liquid effluents, contain sediments, dispose of generated solid residues, and control dust. As part of these systems, sumps are built as basins in the ground to trap sediments carried by rainwater, an example of a control system implemented in the tailings pile and in the waste rock dump piles that minimize impacts on water courses and soil around the mine, reducing interference in the surrounding natural habitats. The mines also have monitoring and measurement procedures, including visual checks, to evaluate the performance of environmental control systems.

Row 18

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Outra medida de minimização, especifique **:**reducing the impact on fauna and flora species

(11.12.1.3) Descrição

The suppression of vegetation and consequent loss/reduction of habitat will cause the spontaneous escape of fauna specimens or harm their dispersion. The Program for Monitoring the Suppression, scaring, and Eventual Rescue of Fauna is a vital tool that aims to remove and scare away the animals from the area to be suppressed, seeking to reduce the impacts on them. The program operates on two fronts: planning of activities and actions to accompany suppression and fauna management, including field visits, satellite image analysis, and regional maps to define the best action strategy and suppression direction, as well as the selection of release areas for rescued species. The second stage includes monitoring suppression and actions to scare away, rescue, and relocate captured individuals. In 2023, 23 animals from 12 species were registered, including six species of reptiles, five species of mammals and one bird. Of these animals, 13 were scared away from the suppression areas, three were rescued and later released in adjacent areas and three were found dead or died. The Flora Rescue Project is another essential tool that operates in the areas to be suppressed. This project saves the genetic heritage and enriches the recovery and restoration actions. Before the acts to suppress native vegetation, specimens, and seeds are rescued in the areas to be impacted, taken to the nursery and, later, the seedlings produced are used in actions to recover degraded areas and restore habitats and offset programs. In 2023 there was no demand for flora rescue in the Brucutu Complex areas. In the Água Limpa areas, 123 seedlings of fifteen plant species were recovered, as well as 273 grams of Hymenaea courbaril seeds and 300 grams of Euterpe edulis seeds. The material collected was sent to the nursery. The complex has a nursery for producing and maintaining seedlings of native species that are used in restoration projects and environmental compensation. Seeds are processed there, and seedlings of various flora species are produced, including rare, endemic and endangered species.

Row 19

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

PT Vale collects seeds before vegetation suppression actions are carried out to support the complete rehabilitation of the mined areas. The seeds are then taken to the nursery to produce seedlings for the subsequent recovery process of the mined areas. Seedlings of various species are made, including endemic and endangered species. PT Vale has established a 2.5-hectare nursery operating since April 2006 to support full-land rehabilitation activities. The nursery produces an average of 700,000 seedlings and rehabilitates more than 100 ha of post-mining land annually. PT Vale's nursery also produces various native and endemic species of plants as part of the biodiversity conservation program. Local plants include betao, bitti, nyatoh, and forest mangosteen. While for the endemic plants, there are ebony and dengen fruit. The local plant seeds are collected from the land to be mined or in cooperation with the local community. Besides that, PT Vale ensured no protected fauna or flora species were found at the mining site before mining activities. To conserve biodiversity, PT Vale has a post-mining plan and biodiversity management for 100% of mining operation areas in the Sorowako block that refers to 2014 ESDM Minister Regulation No. 7 on Reclamation and Post-Mining. We collaborate with the Indonesia Business Council for Sustainable Development (IBCSD) in compiling the Guide for Sustainable Biodiversity Management. The document was released in 2017 and became the first ever in the Indonesian mining business for biodiversity conservation activities.

Row 20

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using

helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 21

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 22

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 23

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 24

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 25

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.

Row 26

(11.12.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.12.1.2) Abordagem e tipo de medida

Minimização

☑ Controles operacionais

(11.12.1.3) Descrição

All Vale mining projects have a fire brigade ready to act when necessary. If the fire is not contained even in partnership with environmental agencies and firefighters, a third party is contracted. This structure is already implemented in Vale's operations and over time it has been improved. Vale also carries out aerial monitoring using helicopters and drones. The response to fires is believed to be rapid and well-coordinated, joining efforts to be able to contain the fire as soon as possible. In this way, impacts on biodiversity and even social impacts will be minimized.
[Adicionar linha]

(11.13) Os impactos significativos para a biodiversidade foram mitigados por meio da restauração?

	Os impactos significativos para a biodiversidade foram mitigados por meio da restauração?	Explique
	Selecione de: ☑ Sim	*n.a.*

[Linha fixa]

(11.13.1) Dê detalhes sobre as ações de restauração em vigor nas unidades da organização.

Row 1

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

As the suppression of native vegetation is often an unavoidable impact for the implementation of projects and expansions, especially for structures with rigid locations, such as pits, it is necessary to apply compensatory actions and measures, such as the conservation and recovery of other areas or other activities agreed between the applicant and the competent environmental agency. The impact on biodiversity to be recovered is the suppression of vegetation, loss/reduction of habitat and loss of individuals of plant species.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Outros ecossistemas

(11.13.1.4) Área total restaurada até o momento (hectares)

100.17

(11.13.1.5) Área total a ser restaurada (hectares)

98.7

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

The restoration actions involve seed collection and production or acquisition of native seedlings of the Amazon in local cooperatives, the preparation of the area, planting of seedlings, induction of natural regeneration, and control of invasive alien species. Essential procedures used in the forest restoration process involve protecting the site with fencing to prevent cattle access, creating and maintaining firebreaks, promoting natural regeneration by creating patches of trees to attract dispersers and enriching the area by planting seedlings, transplanting seedlings from the soil seed bank, direct seeding, and natural regeneration. For monitoring the performance of actions, the extension of the restored area, the number of native species, the number of seedlings and the survival rate in the field, and the number of replanted species are used as indicators. More than 500,000 seedlings of different native forest species with high floristic diversity have been planted in restoration projects. These areas have been systematically monitored. The actions work on two complementary fronts: re-establishing forest connectivity by creating ecological corridors in the mine's area of influence and restoring supplementary forest patches on purchased properties near the mine site, which also form a part of the

ecological corridors. The first front is part of an environmental offsets program required under the environmental license for the mine, in which land is being purchased to offset the disturbance of the natural environment caused by mining. Ecological corridors are being established surrounding the Complex through forest restoration on Vale-owned properties. Some properties have been excluded from formal reporting of the total area recovered due to operational issues related to land ownership. According to the results obtained in 2023, the Carajás Complex had 117.75 hectares of recovered areas and 73.6 hectares of compensated areas.

Row 2

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

The project's impact occurs in the Atlantic Forest biome, related to reducing and suppressing forest and rupestrian grassland habitats. It generates intervention in threatened and immune-cutting species. The restoration action is justified by the need to comply with legal provisions and, primarily, by the environmental importance concerning the adequate protection and restoration of environments, aiming to enhance connectivity between remnants of native vegetation through the establishment of ecological corridors, promote forest restoration, increase the local capacity to support fauna and flora, and foster environmental gains. Besides, the process of evaluating environmental impacts is based on prior knowledge of the environmental scenario where the suppression will take place, obtained through the development of an environmental diagnosis. It is an analytical process that aims to understand the environmental effects of suppression activities, considering the possibilities of avoiding, reducing, and controlling these effects at acceptable and sustainable levels. By doing so, it enables conclusions to be drawn regarding the feasibility of the project.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

197.17

(11.13.1.5) Área total a ser restaurada (hectares)

177.53

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

Under the operations of the Itabira Complex, two restoration mechanisms are used: Natural and artificial regeneration. Natural regeneration: consists of the fact that the vegetation regenerates through biological processes, through the germination of naturally dispersed seeds, and, to a lesser extent, by sprouting stumps and roots. This method depends on a viable seed source, a suitable environment for germination, and an appropriate environment for plant establishment and initial growth. It is a low-cost alternative, generally recommended for areas that present near remnants and already have some tree species. Artificial regeneration: improves establishment conditions for species without relying on natural dispersal or seed sources. Success depends on planting models, species selection, soil preparation, and pest control. Methodology for Recovery of degraded areas: -Selection of species (native species. For offsetting for intervention in threatened and immune-cut species, those species that have undergone intervention are selected and planted). -Planting model (composition, spacing, arrangement). - Quality of the seedlings. -Pre-planting (Isolation of the area, fire protection, control of leaf-cutting ants, soil preparation, pit opening, control of invasive species, segregation). -Planting. -Maintenance (insulation and protection against fire, ant control, cover fertilization, control of invasive species. The unique flora of the Quadrilátero Ferrífero region harbors several endemic species and even some threatened with extinction. In this context, Law 12.651/2012 establishes the protection and compensation of directly impacted threatened species for the installation of new enterprises. Additionally, among the significant phytophysiognomies of this region, the Seasonal Semideciduous Forest (FES) and the Rupestrian Grassland (CR) stand out, both being part of the Mata Atlântica biome - considered a priority for conservation and protected by Law No. 11.428, dated December 22, 2006, regulated by Decree No. 6.660, dated December 21, 2008.

Row 3

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

The project's impact occurs in the Atlantic Forest biome, related to reducing and suppressing forest and field habitats. It generates intervention in threatened and immunecutting species. The restoration action is justified by the need to comply with legal provisions and, primarily, by the environmental importance concerning the adequate protection and restoration of environments, aiming to enhance connectivity between remnants of native vegetation through the establishment of ecological corridors, promote forest restoration, increase the local capacity to support fauna and flora, and foster environmental gains. Besides, the process of evaluating environmental impacts is based on prior knowledge of the environmental scenario where the suppression will take place, obtained through the development of an environmental diagnosis. It is an analytical process that aims to understand the environmental effects of suppression activities, considering the possibilities of avoiding, reducing, and controlling these effects at acceptable and sustainable levels. By doing so, it enables conclusions to be drawn regarding the feasibility of the project.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

1008

(11.13.1.5) Área total a ser restaurada (hectares)

1021

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

Natural regeneration involves the vegetation regrowing through biological processes, including the germination of naturally dispersed seeds and, to a lesser extent, the sprouting of stumps and roots. Its success relies on the availability of viable seeds, suitable germination conditions, and a conducive environment for plant establishment and initial growth. This method is a cost-effective option typically recommended for areas near existing remnants and characterized by high resilience. In contrast, artificial regeneration is a restoration approach that provides optimal conditions for species introduced to the site, without relying solely on dispersers and seed sources. However, the success of this method depends on various factors, such as selecting appropriate species, implementing suitable planting models, preparing the soil, controlling pests and diseases, among others. Priority is given to using seedlings from rescued specimens in suppressed areas to preserve genetic diversity during these actions. The methodology for restoration includes species selection (native species for compensation and intervention), planting models (composition, spacing, arrangement), seedling quality, pre-planting preparation (area isolation, fire protection, control of leaf-cutting ants, soil preparation, pit opening, invasive species control), planting, and maintenance (fire protection, ant control, cover fertilization, invasive species control. Besides, the actions are monitored and evaluated by monthly reports of the activities made in the complex with results, goals, and the relation of executed area to the proposed area.). In 2023, restoration actions were conducted on a total of 1021 hectares. Furthermore, the impact is being mitigated in accordance with the following legal and regulatory aspects: Intervention in Permanent Preservation Areas (APP) under Resolution of the Brazilian National Environment Council No. 369/2007and Atlantic– Forest Intervention - Article 32 of Law No. 11.428/2006.

Row 4

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

Iron ore mining, as well as the associated structures for processing and production, relies on land clearing and may lead to the suppression of native vegetation. The areas with ore occurrence have locational rigidity, and deforestation cannot be avoided entirely or minimized. However, suppression can significantly impact biodiversity, such as the loss and reduction of habitats for fauna species, loss of flora specimens (including rare, endemic, or threatened species), and destabilization of communities in the affected areas. Despite constantly working to avoid impacts and reduce as much as possible the impacts of its operations and new projects, the suppression of natural habitats is still necessary for implementing and expanding mining projects in our areas of operation. Therefore, restoration actions are essential for rehabilitating degraded areas and restoring habitats and populations of impacted species. Besides, the process of evaluating environmental impacts is based on prior knowledge of the environmental scenario where the suppression will take place, obtained through the development of an environmental diagnosis. It is an analytical process that aims to understand the environmental effects of suppression activities, considering the possibilities of avoiding, reducing, and controlling these effects at acceptable and sustainable levels. By doing so, it enables conclusions to be drawn regarding the feasibility of the project.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

21

(11.13.1.5) Área total a ser restaurada (hectares)

21.86

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

Various techniques are used to restore degraded areas, which are chosen based on the characteristics of the site and the available resources. Generally, the following techniques are employed: Restoration in forest areas: isolation of the area that must be done before planting; selective manual weeding; ant control; initial planting that must be done with the direct opening of pits with adequate size and spacing; base fertilization; planting model in rows of cover diversity to be carried out

in the rainy season; choice of plant species according to function; Restoration in rupestrian grassland areas: deposition of "topsoil" essential to creating a suitable substrate; planting seeds of rupestrian species; transplanting of rupestrian plants from the flora rescue program. In the first stage, the revegetation should use species grass and legume species should be used in the revegetation, aiming to provide coverage and improve soil characteristics. The grasses have a great capacity to cover the soil. At the same time, the legumes provide soil enrichment, thanks to their capacity to fix nitrogen, which contributes to the establishment of native species at a later stage. In the next step, the revegetation process will seek to meet other objectives, such as the landscaping of the area and the increase of biodiversity and faunal support. To this end, specific native species are used to take advantage of their adaptive characteristics to the region and favour natural succession. These species should be obtained from the flora rescue program and the nurseries. The rehabilitation actions of the degraded areas are periodically monitored to follow the events of colonization of the flora to adjust habitat management actions when necessary. These can maximize the processes of ecological succession and recovery of the areas being rehabilitated. Besides, the restoration actions of the project meet the premises of Article 32 of the Atlantic Forest Law (No. 11,428/2006), in addition to presenting the methodology to be used to restore the altered areas. The results of the restoration and protection actions implemented in 2023 include a total of 21.89 hectares of compensated areas.

Row 5

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

Vale recognizes the extreme importance of biodiversity and its evaluation in its business operations. Biodiversity plays a vital role in sustaining life and ecosystem services, and its significance and value cannot be underestimated. Specific assessments are conducted as part of the risk and impact management process to evaluate potential interferences in areas of natural heritage, protected areas, and sensitive habitats and species. These assessments occur at various stages, from initial territory planning to final project design. Environmental impact studies are carried out prior to any expansion or new project, adhering to the regulations and guidelines of each country and region of operation. The process of evaluating environmental impacts relies on prior knowledge of the environmental scenario where the suppression will take place, obtained through the development of an environmental diagnosis. It is an analytical process that aims to understand the environmental effects of suppression activities, considering the possibilities of avoiding, reducing, and controlling them at acceptable and sustainable levels. And so, it is possible to determine the feasibility of the project. Iron ore mining activities, including associated processing and production structures, require land clearance, resulting in the suppression of native vegetation. The areas with ore deposits have inherent spatial constraints, making complete avoidance or minimalization of deforestation unfeasible. Vegetation suppression directly and indirectly affects biodiversity, leading to habitat reduction and loss, decreased flora and fauna populations, dispersal to surrounding environments, and disruption of local communities. Despite striving to prevent and minimize impacts in operations and new projects, the suppression of natural habitats remains necessary for the implementation and expansion of mining projects in our operational areas. Hence, restoration measures are crucial for rehabilitating degraded areas and restoring habitats and populations of affected species. contributing to the conservation and restoration of ecosystems.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

0

(11.13.1.5) Área total a ser restaurada (hectares)

0

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

Various techniques are employed to restore ecosystems, which are selected based on site characteristics and available resources. The following techniques are commonly utilized: Restoration of forest areas: Before planting, the area is isolated. Selective manual weeding and ant control are performed. Initial planting involves opening pits of appropriate size and spacing. Base fertilization is carried out. Planting follows a model of rows with a cover diversity, done during the rainy season. Plant species are chosen based on their intended function. Restoration of rupestrian grassland areas: "Topsoil" deposition is necessary to create a suitable substrate. Seeds of rupestrian species are planted, and rupestrian plants from the flora rescue program are transplanted. The first stage of revegetation focuses on grass and legume species, which provide soil coverage and enrichment. Grasses effectively cover the soil, while legumes enrich the soil through nitrogen fixation, facilitating the establishment of native species. Subsequent stages aim to enhance biodiversity and support fauna, utilizing specific native species known for their adaptability to the region and their ability to promote natural succession. These species are obtained from the flora rescue program and nurseries. The restoration areas is regularly monitored to adjust habitat management actions as needed, maximizing the processes of natural succession and recovery. Periodic monitoring ensures that the colonization of flora is monitored, allowing for adjustments to habitat management actions when necessary. This approach enhances the natural succession and habitat restoration. These actions are monitored and evaluated by monthly reports of the activities made in the complex with results, goals, and the relation of executed area to proposed area. In addition, the monitoring is carried out through photographic records of the actions taken. Besides, the restoration actions of the project meet the premises of Article 32 of the Atlantic Forest Law (No. 11,428/2006), in addition to presenting the methodology to be used for the restoration of the altered areas. In 2023 we don't have restoration actions in this complex.

Row 6

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

The project's impact occurs in the Atlantic Forest biome, related to reducing and suppressing forest and field habitats. It generates intervention in threatened and immunecutting species. The restoration action is justified by the need to comply with legal provisions and, primarily, by the environmental importance concerning the adequate protection and restoration of environments, aiming to enhance connectivity between remnants of native vegetation through the establishment of ecological corridors, promote forest restoration, increase the local capacity to support fauna and flora, and foster environmental gains. Besides, the process of evaluating environmental impacts is based on prior knowledge of the environmental scenario where the suppression will take place, obtained through the development of an environmental diagnosis. It is an analytical process that aims to understand the environmental effects of suppression activities, considering the possibilities of avoiding, reducing, and controlling these effects at acceptable and sustainable levels. By doing so, it enables conclusions to be drawn regarding the feasibility of the project.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

44.69

(11.13.1.5) Área total a ser restaurada (hectares)

44.34

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

In natural regeneration, the vegetation regenerates through natural processes, by the germination of naturally dispersed seeds, and to a lesser extent, by sprouting stumps and roots. This method depends on a viable seed source, an appropriate environment for germination, establishment and initial growth of plants. It is a low-cost alternative, generally recommended for areas that present near remnants and already have some tree species, besides being characterized by high resilience. On the other hand, artificial regeneration is a recovery process by providing better conditions of establishment for the species that are brought to the site and not initially relying on dispersers and seed sources. The success of this method, however, depends on the definition of several aspects, such as planting models;

selection of appropriate species; methods of soil preparation and planting; methods of pest and disease control, among others. The methodology for restoration consists of these actions: Selection of species; (native species) for compensation for intervention in threatened and immune cut species (those species that have undergone intervention are selected and planted); Planting model (composition, spacing, arrangement); Quality of the seedlings; Pre-planting; (Isolation of the area, fire protection, control of leaf-cutting ants, soil preparation, pit opening, control of invasive species, segregation); Planting and Maintenance. (Isolation and protection against fire, ant control, cover fertilization, control of invasive species. Some relevant legal/regulatory aspects are included in these actions, such as Intervention in APPs (Areas of Permanent Preservation) – as regulated by Resolution of the Brazilian National Environment Council No. 369/2007, Intervention in the Atlantic Forest – as governed by Article 32 of Law No.11.428/06, and Intervention in threatened and protected species through cutting or removal. Besides, the actions are monitored and evaluated by monthly reports of the activities made in the complex with results, goals, and the relation of executed area to the proposed area. In addition, the monitoring is carried out through photographic records of the actions taken. The results of the restoration and protection actions implemented in 2023 include a total of 44.69 hectares of recovered areas.

Row 7

(11.13.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.13.1.2) Descrição do impacto que está sendo mitigado pela restauração

It is not always possible to avoid all impacts, especially for structures that have locational rigidity according to the occurrence of the mineral, such as pits. Restoration and reclamation actions are essential for these residual impacts, related to the loss and reduction of habitats, including habitats of endemic and threatened species, changes in communities, and loss of flora individuals.

(11.13.1.3) Tipo de ecossistema restaurado

Selecione de:

☑ Ecossistemas florestais

(11.13.1.4) Área total restaurada até o momento (hectares)

222.4

(11.13.1.5) Área total a ser restaurada (hectares)

260

(11.13.1.6) Ano final

2023

(11.13.1.7) Descreva as ações de restauração

As part of Vale's commitment to environmental sustainability, we are dedicated to rehabilitating post-mining and cross-border lands, particularly in critical areas. PT Vale Indonesia (PTVAI) actively participates in post-mining rehabilitation efforts, implementing a gradual revegetation process. The PTVI restoration program includes a sequential approach to revegetation. The initial stage involves restoring pioneer vegetation, followed by enrichment planting using local and endemic species, typically carried out two years after the pioneer planting. Reclamation activities are closely monitored and reported to the relevant authorities. Upon completion, the reclaimed land is handed back to the Government for evaluation based on the key performance indicators set by the Department of Environment and Permit Management (EPM). The reclamation activities involve various stakeholders, including Vale's employees, as well as the central government's Ministry of Energy and Mineral Resources (ESDM), Ministry of Environment and Forestry (LHK), local governments, communities, and non-governmental organizations. The (ESDM, LHK, and local governments play a vital role in providing technical guidance, establishing a supervisory framework, and assessing the success of post-mining reclamation and revegetation activities. Typically post-mining reclamation measures involve several steps, including: -Recontouring/landscaping to get a stable landform which conducive to the growth of vegetation - Planting of cover crops/ground cover to minimize erosion and enhance soil fertility - Planting of pioneer trees to provide an initial trees canopy to accommodate the local trees species - Planting of native/local trees species under the pioneer trees canopy Some fertilizer is applied to the soil to support the growth of the planted vegetation. Vegetation maintenance is carried out for up to three years to ensure a consistent increase. After three years, the natural soil regeneration is reestablished and allows self-sustained vegetation grows. The monitoring program was carried out to measure the reclamation success rate. Some additional vegetation maintenance activities took place if required. Probably after 4 -5 years, the natural forest recolonization will be established.
[Adicionar linha]

(11.14) Os impactos residuais significativos dos projetos foram compensados por meio de compensação de biodiversidade?

	Os impactos residuais foram compensados por meio de compensações de biodiversidade?	Explique
	Selecione de: ☑ Sim	*n.a.*

[Linha fixa]

(11.14.1) Dê detalhes sobre as compensações de biodiversidade em vigor.

Row 1

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.14.1.2) Descrição do impacto que está sendo compensado

To quantify this impact, we monitor the total area of vegetation that has been removed. Avoiding the impacts of natural habitat conversion was only possible for some of the structure projects. However, mitigation is likely through monitoring suppression, installing control measures and rescuing flora and fauna. Recovery and restoration measures are essential to establish ecological corridors not only to compensate for the habitat loss but the fragmentation of habits too, and to reestablish populations of animal and plant species impacted by the implementation of the projects. The impact is characterized in environmental impact studies, and its magnitude is quantified based on the size of the suppressed area, the type of vegetation, and the successional stage (habitat quality)

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Compensação de restauração (florestas)

(11.14.1.5) Área (Hectares)

1451.85

(11.14.1.6) Descreva a compensação

On March 13, 2017, Vale and the Chico Mendes Institute for Biodiversity Conservation (ICMBio) signed a Term of Commitment for the execution of the project called "Ecosystem Restoration Project in Preservation Areas in the vicinity of the Mosaic of Protected Area of Carajás". This program includes the restoration of 1,451.85 ha of Permanent Preservation Areas. The initiative aims to comply with current legislation and meet the environmental conditions of the Vegetation Suppression

Authorizations (In Portuguese, Autorização de Supressão de Vegetação - ASV) issued by the competent environmental agency, within the Carajás National Forest, in the Carajás Mining Complex. The area to be offset is based on the Vegetation Authorizations. The offset is done by the ecological restoration technique, mainly by planting seedlings. But also, for natural regeneration, in this context, means applying mechanical methods that aim to eliminate or control unwanted plant species (example: exotic grasses) and simultaneously favour the development of native species of interest in forest restoration. Another way also used is planting enrichment, which consists of introducing species from the final succession stages in the forest restoration's target areas. This method is used when the vegetation in the region has low species diversity. For these plantations, methods such as introducing seedlings and seeds and introducing individuals produced from sources of species already present in the area, collected in other regional fragments - genetic enrichment are most used. And one way to control the netting area is by using a fence, which is an object of isolation to prevent the entry of bovine and equine animals into the areas under restoration. Brackets are placed strategically along the perimeter of the fence, allowing teams to enter to carry out the work. According to the Environmental Compensation Plan, the history of quantitative forest planting areas in the S11D Complex is approximately 807,952 hectares of planted areas and more than one million seedlings native to the Amazon inserted in the surrounding areas of the undertaking, which can contribute to the connectivity between the forest fragments, which is the main objective of this Program.

Row 2

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.14.1.2) Descrição do impacto que está sendo compensado

Implementing of the S11D Complex resulted in the direct intervention of 2,610.80 hectares, with approximately 1,725.33 hectares a being natural areas. It has led to significant losses in forest habitats and ferruginous rocky outcrops and has also impacted caves and the plant and animal species associated with these ecosystems. By Art. 36 of the Federal Law No. 9.985/2000 and provided for in the Basic Environmental Plan Carajás Iron Ore Project, the Program for the Creation of a Protected Area in the Bocaina and Tarzan Mountains, where occur remnants of forest and ferruginous rupestrian grassland. This area is relevant regarding location to expand conservation and connection between representative environments of the Carajás National Forest. The impact is characterized in environmental impact studies, and its magnitude is quantified based on size of the suppressed area, type of vegetation and successional stage (habitat quality).

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

79000

(11.14.1.6) Descreva a compensação

The priority area for the UC's creation was determined based on the provisions outlined in Decree No. 99,556/1990, per the objectives of Law 9.985/2000. The priority was given to areas of speleological interest, covering forest habitats and ferruginous rocky outcrops (ferruginous rupestrian grassland) whenever possible in the project region. Since 2013, Vale in partnership with the Instituto Chico Mendes de Conservação da Biodiversidade ICMBIO, has been designing the creation of the Campos Ferruginosos National Park by the legal requirements in the definition of priority area for conservation. In this context, on July 5, 2017, the PARNA was officially created through a specific decree. The park is formed mainly by portions of land of the Carajás National Forest - Flona Carajás (Tarzan Mountain) and adjacent areas in the Bocaina Mountains. This protected area (IUCN Category II) has been established to manage and safeguard Bocaina and Tarzan rocky outcrops, as well as forest and cavities habitats, as well as guaranteeing the continuity of ecosystem services, ensuring the protection of the speleological heritage of ferruginous formation, of the vegetation of rustic rupestrian grassland, contributing to the environmental stability of the region. Vale has forgone exploration rights to enable the long-term protection of these essential habitats for endemic species. Today this protected area is managed for ICMBio with Vale support for ecosystem protection, fire prevention and fighting, landholding regularization, research, and education actions. These support actions are recorded in an agreement between Vale and ICMBio to protect all the protected areas in Carajás, revalidated every two years.

Row 3

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.14.1.2) Descrição do impacto que está sendo compensado

As the suppression of native vegetation is often an unavoidable impact, for the implementation of the enterprise and expansions, it is necessary to apply compensatory actions and measures such as the reforestation of other areas or other activities agreed upon between the applicant and the competent environmental agency. The impact is characterized in environmental impact studies, and its magnitude is quantified based on the size of the suppressed area, the type of vegetation, and the successional stage (habitat quality). An example of selected area is the Itabiruçu Dam, that is part of the Itabira Mining Complex, owned by Vale S.A., inserted in the central portion of the municipality of Itabira, northeast of the Quadrilátero Ferrífero (QF), in the main part of the state of Minas Gerais. From an ecological point of view, the Quadrilátero Ferrífero is located south of the Espinhaço mountain range, within the perimeter of the Espinhaço Biosphere Reserve, which aims to prioritize the conservation of biodiversity, sustainable development, and scientific knowledge. In addition, all of it is indicated as a Priority Area for the Conservation of Flora and Fauna, situations that influence the State's decision regarding the granting of environmental licensing, currently regulated by the Ecological Economic Zoning, established by Decree 4,297/02, strengthening the measures of controls aimed at the conservation and recovery of biodiversity. Therefore, it is a region of extreme ecological importance due to the lithological variety found in it, which shelters different ecosystems close to each other, leading researchers to

classify it as having great biological diversity. Compensation for the Complex was provided for in accordance with Articles 17 and 32 of the Atlantic Forest Law (11.428 / 2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species (State Decree 47.749/2019) and Immune from Cutting (State Law No. 20.308/2012), Article 75 of State Law 20.922/2013, and SNUC Law 9.985/2000.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

5367.99

(11.14.1.6) Descreva a compensação

To recompose the native flora vegetation suppressed in the projects that had their licenses granted in this complex, the company seeks to delimit compensation/conservation based on landscape analysis, taking into consideration the formation of ecological corridors by promoting connectivity between the fragments of natural areas, allowing the free movement of animals, seed dispersal and increased vegetation cover. The company owns some areas in the Iron Quadrangle region, including Private Natural Heritage Reserves (RPPN), areas inside protected areas, properties for conservation/ restoration, and future compensation. These areas are essential witnesses of regional biodiversity, constituting remnants for conserving sensitive habitats and endemic and endangered species of flora and fauna. The areas selected for the compensation of APP and endangered species are called Fazenda Caieiros and Sítio Córrego das Cobras, located in the municipality of Itabira-MG. The compensation in these Permanent Preservation Areas (APP) will allow the resumption of environmental functions, contributing to the preservation of water resources, landscape, geological stability, and biodiversity, ease of gene flow of fauna and flora, and soil protection. In the Itabira complex, the environmental agency approved 5,367.99 hectares of protected areas, including RPPNs and compensation proposals from enterprises. The offset was predicted in compliance with Article 32 of the Atlantic Forest Law No.11,428 / 2006, Resolution of the Brazilian National Environment Council No. 369, of March 28, 2006, and Compensation for Intervention in Endangered Species - Annex I of the Normative Instruction Ministry of the Environment No. 06 of September 23, 2008. In addition, the delimitation of compensation/conservation/recovery areas is carried out based on landscape analysis, considering connectivity between fragments of natural areas, allowing the free movement of animals, seed dispersal, and increased vegetation cover. In addition, the area considers the approved compensation proposals and the approved RPPN, disregarding overlaps. In 2023, the Itabira Complex approved 4,624.23 ha of compensation and the maintenance of 743.76 ha in the protected areas of RPPN Mata São José and RPPN Itabiruçu.

Row 4

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.14.1.2) Descrição do impacto que está sendo compensado

To open new pits, it is not possible to choose another site due to the location of the iron ore, and the suppression of the vegetation present on the site is inevitable. The suppression of native vegetation for the implementation of these projects has a negative impact on biodiversity and it is necessary to apply compensatory actions and measures, such as the conservation and recovery of other areas or other activities agreed between the applicant and the competent environmental agency. The implementation of the Mariana Complex mines resulted in the fragmentation of habitats due to the suppression of vegetation in the region. The region is in the phytogeographic domain of the Atlantic Forest, which has a high number of endemic and endangered species, in addition to being subject to great anthropogenic pressure. During the environmental impact studies, several endangered species were identified in the area, such as the Hydromedusa maximiliani (reptile), Spizaetus tyrannus, Pseudastur polionotus, Amadonastur lacernulatus, Sporophila frontalis and Sporophila falcirostris (birds), Dicotyles tajacu, Chrysocyon brachyurus, Lycalopex vetulus, Leopardus pardalis, Leopardus tigrinus, Puma concolor, Alouatta caraya, Sapajus nigritus, Callicebus nigrifrons and Tapirus terrestris (mammals). These species can be harmed by habitat loss and forest fragmentation, which demonstrates the importance of compensation actions. Compensation for the Complex was provided in accordance with Articles 17 and 32 of the Atlantic Forest Law (11.428 / 2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species (State Decree 47.749/2019) and Immune from Cutting (State Law No. 20.308/2012), Article 75 of State Law 20.922/2013, and SNUC Law 9.985/2000.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

2589.72

(11.14.1.6) Descreva a compensação

Vale seeks to determine compensation / conservation / recovery areas based on landscape analysis studies. These studies take into account the possibility of forming ecological corridors between fragments, promoting the connectivity between areas, which guarantees the free movement of fauna, increased gene flow, increased seed dispersal and vegetation cover effectively protected. The company has protected areas in the Iron Quadrangle region, including Private Natural Heritage Reserves (RPPN), areas within Conservation Units, properties for conservation/restoration and future compensation. These areas are important testimonies of regional biodiversity, constituting significant remnants for the conservation of sensitive habitats and endemic and endangered species of flora and fauna. Compensation actions are monitored and evaluated in monthly reports. At the Mariana Complex, there are 2,589.72 hectares of protected areas approved by the environmental agency, including RPPNs and project compensation proposals. Compensation for the Complex was planned in accordance with articles 17 and 32 of the Atlantic Forest Law (Law No. 11.428/2006), National Environment Council Resolution No. 369 of March 28, 2006, and Compensation for Intervention in Endangered Species - Annex I of the Ministry of the Environment's Normative Instruction No. 06 of September 23, 2008, article 75 of State Law No. 20.922/2013, State Decree 47.749/2019 and the National System of Conservation Units Law No. 9.985/2000.

Row 5

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.14.1.2) Descrição do impacto que está sendo compensado

A range of compensatory measures have been implemented to mitigate the impacts of the complex. These include creating compensatory planting areas to restore habitats and populations of endangered and legally protected species in compliance with legal requirements. Additionally, Vale has established protected areas to conserve habitats and associated endangered and endemic species. The main residual impacts offset relates to the loss of forest and rupestrian grassland habitats and populations of endemic and threatened species associated with these habitats. Besides, the impact is characterized in environmental impact studies and quantified from the size of the suppressed area, type of vegetation, and successional stage. Compensation for the Complex was established in accordance with Articles 17 and 32 of the Atlantic Forest Law (11.428 / 2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species (State Decree 47.749/2019) and Immune from Cutting (State Law No. 20.308/2012), Article 75 of State Law 20.922/2013, and SNUC Law 9.985/2000.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

3046.24

(11.14.1.6) Descreva a compensação

To restore the vegetation suppressed in the projects licensed in the complex, the company adopts an approach based on landscape analysis. This approach aims to create ecological corridors to connect fragmented natural areas, facilitating the movement of animals, seed dispersal, gene flow and the establishment of more extensive vegetation cover. In the Iron Quadrangle region, the company has several areas that have a vital role to play in preserving the region's biodiversity. These include Private Natural Heritage Reserves (RPPN), areas within conservation units, properties earmarked for conservation and restoration and future compensation areas. These areas serve as important refuges for endemic and endangered species of flora and fauna. The Vargem Grande complex, for example, has 3,046.24 hectares of protected areas approved, including RPPNs and compensation proposals from other projects. Compensation actions in the complex follow the guidelines of the Atlantic Forest Law (11.428/2006), National Environment Council Resolution No. 369 (March 28, 2006), Compensation for Intervention in Endangered Species (Annex I of the Ministry of the Environment's Normative Instruction No. 06, of September 23, 2008), Article 75 of State Law No. 20.922/2013, State Decree No. 47.749/2019 and the National System of Conservation Units Law No. 9.985/2000. The progress of compensation actions in the complex is monitored and evaluated through monthly reports, which document the actions implemented and their corresponding results and objectives.

Row 6

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.14.1.2) Descrição do impacto que está sendo compensado

As the suppression of native vegetation is often an unavoidable impact, for the implementation of the enterprise and expansions, it is necessary to apply compensatory actions and measures such as the reforestation of other areas or other actions agreed upon between the applicant and the competent environmental agency. The impact is characterized in environmental impact studies, and its magnitude is quantified based on the size of suppressed area, type of vegetation, and successional stage (habitat quality). Compensation for the Complex was established in accordance with Articles 17 and 32 of the Atlantic Forest Law (11.428 / 2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species (State Decree 47.749/2019) and Immune from Cutting (State Law No. 20.308/2012), Article 75 of State Law 20.922/2013, and SNUC Law 9.985/2000.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

1704.24

(11.14.1.6) Descreva a compensação

In order to restore the native vegetation suppressed in the licensed developments of this complex, the company is implementing compensation and conservation measures based on landscape analysis. The aim is to establish ecological corridors that promote connectivity between natural fragments, facilitating animal movement, seed dispersal, increased gene flow and the expansion of vegetation cover. Vale owns several areas in the Iron Quadrangle region, including Private Natural Heritage Reserves (RPPN), areas within conservation units, properties earmarked for conservation and restoration and future compensation areas. These areas play a crucial role in preserving regional biodiversity, acting as important refuges for endemic and endangered species of flora and fauna. An illustrative example related to the Fábrica Mine is Stephanopodium engleri, an herbaceous plant endemic to Minas Gerais found in Seasonal Forests. Its population was negatively affected by the implementation of a waste disposal site, but Vale rescued its seeds and produced seedlings, which were used in the recovery of the impacted areas. In addition, Vale has established protected populations of this species in its RPPNs, such as Andaime. The protected areas of the Paraopeba Complex cover an area of 1,704.24 hectares, approved by the environmental agency, including RPPNs and compensation proposals for the projects. The compensation measures for the complex comply with the relevant regulations, including the Atlantic Forest Law (11.428/2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species - Annex I of the Ministry of the Environment's Normative Instruction No. 06 of September 23, 2008, Article 75 of State Law 20.922/2013, State Decree 47.749/2019 and SNUC Law 9.985/2000.

Row 7

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.14.1.2) Descrição do impacto que está sendo compensado

As the suppression of native vegetation is often an unavoidable impact, for the implementation of the enterprise and expansions, it is necessary to apply compensatory actions and measures such as the reforestation of other areas or other actions agreed upon between the applicant and the competent environmental agency. The impact is characterized in environmental impact studies, and its magnitude is quantified based on the size of the suppressed area, the type of vegetation, and the successional stage (habitat quality). Besides, the impact is characterized in environmental impact studies and quantified from the size of the

suppressed area, type of vegetation and successional stage. Compensation for the Complex was established in accordance with Articles 17 and 32 of the Atlantic Forest Law (11.428 / 2006), CONAMA Resolution No. 369 of March 28, 2006, Compensation for Intervention in Endangered Species (State Decree 47.749/2019) and Immune from Cutting (State Law No. 20.308/2012), Article 75 of State Law 20.922/2013, and SNUC Law 9.985/2000.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Acordos de compensação

(11.14.1.5) Área (Hectares)

5736.41

(11.14.1.6) Descreva a compensação

To restore the native vegetation suppressed in the projects that have been granted licenses in this complex, the company seeks to delimit compensation/conservation/restoration areas, based on landscape analysis, taking into account the formation of ecological corridors to promote connectivity between fragments of natural areas, allowing the free movement of animals, seed dispersal and increased vegetation cover. The company owns some of these areas in the Iron Quadrangle region, including Private Natural Heritage Reserves (RPPN), areas within Conservation Units, properties for conservation/restoration and future compensation. These areas are important testimonies of regional biodiversity, constituting remnants for the conservation of sensitive habitats and endemic and endangered species of flora and fauna. In the Brucutu/ Água Limpa Complex, there are 5,736.41 ha of preserved areas approved by the environmental agency, which include RPPNs and proposals for compensation for the projects. In addition, compensation for the Complex was provided for in accordance with articles 17 and 32 of the Atlantic Forest Law (11.428/2006), CONAMA Resolution No. 369 of March 28, 2006, and Compensation for Intervention in Endangered Species - Annex I of the Normative Instruction of the Ministry of the Environment No. 06 of September 23, 2008, article 75 of State Law 20.922/2013, State Decree 47.749/2019 and SNUC Law 9.985/2000.

Row 8

(11.14.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.14.1.2) Descrição do impacto que está sendo compensado

It is not always possible to avoid or mitigate all impacts, especially for structures that have locational rigidity according to the occurrence of the mineral, such as pits. However, after recovery and reclamation actions, it's crucial to address any residual impacts resulting from the loss or reduction of habitats, including those of endemic and endangered species, changes in communities, and loss of individual flora. PTVI maintains vegetation after pioneer planting and Plant enrichment until the percentage grows to 80%. Besides, the impact is characterized in environmental impact studies and quantified from the size of the suppressed area, type of vegetation, and successional stage.

(11.14.1.3) Motivação

Selecione de:

☑ Exigências legais

(11.14.1.4) Tipo de compensação

Selecione de:

☑ Compensação de restauração (florestas)

(11.14.1.5) Área (Hectares)

10435

(11.14.1.6) Descreva a compensação

PTVI is committed with land rehabilitation and reforestation beyond mining operation areas, particularly in critical lands and watersheds as mandated by Ministry of Environment and Forestry Regulation No. 59 of 2019 regarding Planting for Watershed Rehabilitation. Specifically, watershed rehabilitation is conducted in 13 regencies in South Sulawesi Province and 3 regencies in West Java Province. This initiative represents a total of 10.000 ha to be recover in South Sulawesi and 435 ha in West Java. The initiative aim to restore, maintain, and enhance watershed functions, including environmental conservation. In 2023, the rehabilitation conducted by PT Vale entered the second-year planting and maintenance phase (P2). To ensure the success of the program, the Company, together with stakeholders, conducted field visits to Lappa Laona Village, one of the watershed rehabilitation sites in Barru Regency to discuss measures to improve the actions. The watershed rehabilitation program in West Java Province conducted by PT Vale will continue until 2025. As of the end of 2023, the planting realization covered an area of 435 Ha, including regions in West Java Province, comprising 191 Ha in Sumedang Regency, 209 Ha in Tasikmalaya Regency, and 35 Ha in Pangandaran Regency. In addition to the planting realization by the end of 2023, there was also the implementation of second-year plant maintenance (P2) covering an area of 10,000 ha, spanning across 13 regencies in South Sulawesi Province.
[Adicionar linha]

(11.15) A organização está implementando ou dando suporte a ações adicionais de conservação?

	Implementa ou dá suporte a ações adicionais de conservação?	Explique
	Selecione de: ☑ Sim	*n.a.*

[Linha fixa]

(11.15.1) Forneça detalhes sobre os principais ACAs que estão sendo implementadas ou que recebem o suporte da organização.

Row 1

(11.15.1.1) Título do projeto

Conservation of Quadrilátero Ferrífero Region Species

(11.15.1.2) Tema do projeto

Selecione de:
☑ Espécies ameaçadas

(11.15.1.3) País/área

Selecione de:
☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2016

(11.15.1.8) Ano de término

2025

(11.15.1.9) Descrição do projeto

This project seeks to increase knowledge about the plant species of the rupestrian grasslands of the Iron Quadrangle region, in the state of Minas Gerais (Brazil), in Vale's conservation units and other public protected areas. Its actions involved modeling and predictive mapping of rare, endemic and/or threatened species, as well as collecting genetic material and propagules to develop propagation protocols. This is a voluntary initiative.

(11.15.1.10) Descrição dos resultados até o momento

Three books have been published to disseminate the results. In the last year, some results obtained are Unpublished Propagation Protocols, Programs to Accelerate the Development of Endemic Rock Species, Bioreactors, Expansion of the Distribution of Critical Species, Phenology of Rock Species, Study with Species considered potentially extinct from Nature (gathering individuals and working on their propagation), Species new to science, Molecular Identification of endemic species.

Row 2

(11.15.1.1) Título do projeto

Forest Goal – Support and protection of areas in Atlantic Forest

(11.15.1.2) Tema do projeto

Selecione de:

☑ Áreas protegidas

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2020

(11.15.1.8) Ano de término

2026

(11.15.1.9) Descrição do projeto

Vale announced in 2019 its "New Pact with Society", a voluntary initiative aiming to lead the transition to net zero mining by 2050. This aligns with UN Sustainable Development Goal 15 and global biodiversity strategies, with focus on Aichi's targets. One of the pillars of the pact is to recover and protect 500,000 ha by 2030, of which 400,000 are devoted to protection, mainly through partnerships with protected areas via Cooperation Agreements, including donations and the provision of services.

(11.15.1.10) Descrição dos resultados até o momento

By 2023, Vale helped to protect over 115,000 ha in seven public protected areas. Over 390 environmental education events were held, with more than 79,000 people attending. The protected areas also received several materials and equipment, such as drones and Eco-Counters, advanced technology sensors that can help conservation actions. Environmental monitors were hired to oversee the areas and support environmental education and research. The first REDD Carbon Credits were acquired.

Row 3

(11.15.1.1) Título do projeto

Vale and ICMBio Cooperation Agreement - Sooretama Biological Reserve (Rebio)

(11.15.1.2) Tema do projeto

Selecione de:

☑ Conservação florestal

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

1999

(11.15.1.8) Ano de término

2026

(11.15.1.9) Descrição do projeto

The Rebio covers the 4 municipalities in Espírito Santo state. Together with the Vale Natural Reserve and two Private Reserves of Natural Heritage of Suzano S/A, it makes up the largest forest complex in the North of Espírito Santo, totaling 50,000 ha of Atlantic Forest of Tabuleiro. The protected area is also part of the Atlantic Forest Reserves of the Discovery Coast, housing great biodiversity.

(11.15.1.10) Descrição dos resultados até o momento

The SGIAP module has been used as a tool to monitor threats to the fauna and flora of the Sooretama Biological Reserve. Guidance and environmental education activities were also carried out in the surroundings of Rebio and with drivers on the highway that cuts through the protected area. Other activities included the Big October event and the Birding Photo Challenge, encouraging birdwatching and contributing to knowledge of the biodiversity in the Unit and to citizen science.

Row 4

(11.15.1.1) Título do projeto

Environmental Education Projects - Vale Natural Reserve

(11.15.1.2) Tema do projeto

Selecione de:

☑ Áreas protegidas

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Não definido

(11.15.1.7) Ano de início

2000

(11.15.1.9) Descrição do projeto

The Vale Nature Reserve (RNV) develops environmental education projects and actions to bring it closer to neighboring communities and visitors, promoting awareness among social actors, converging towards the common goal of sustainability and biodiversity conservation. RNV promotes environmental education events, involving lectures, workshops and dynamics, addressing topics such as preservation of the environment and its biodiversity, conscious use of natural resources, health and well-being.

(11.15.1.10) Descrição dos resultados até o momento

Throughout 2023, more than 36,477 people participated in 46 environmental education events, including courses, workshops and lectures on topics such as the preservation of the environment and its biodiversity, the conscious use of natural resources, promoting changes with sustainable attitudes.

Row 5

(11.15.1.1) Título do projeto

Enviromental Regularization Program

(11.15.1.2) Tema do projeto

Selecione de:

☑ Restauração (florestas)

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2023

(11.15.1.8) Ano de término

2030

(11.15.1.9) Descrição do projeto

The Program is the result of partnership between Vale S.A, the State Forests Institute and State Secretariat of the Environment and Sustainable Development. Vale has been supporting this Program through design, funding, and technical support. The Program is located in the region of Environmental Protection Area Cachoeira das Andorinhas, Atlantic Forest biome, in Minas Gerais. The main objective of this Program is to support the restoration of small properties and and make them legally regular.

(11.15.1.10) Descrição dos resultados até o momento

The partnership, signed in 2023, has been implemented in 2024 and will last until 2030. The expected outcomes are to support rural landowners in restoring their properties and regularizing their legal status in relation to the Rural Environmental Registry through participatory process; to collaborate with IEF and SEMAD in developing of Payments for Environmental Services for Minas Gerais; to offer training to landowners in restoration practices; and to develop an app for monitoring restoration.

Row 6

(11.15.1.1) Título do projeto

Inclusive Restoration

(11.15.1.2) Tema do projeto

Selecione de:

☑ Restauração (outros)

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2023

(11.15.1.8) Ano de término

2027

(11.15.1.9) Descrição do projeto

In 2022 Vale has signed an agreement with Chico Mendes Institute for Biodiversity Conservation for the Inclusive Restoration Project. The agreement aims to plan and structure large-scale restoration processes in 150 hectares of Protected Areas under ICMBio's management. The Protected Areas targeted by this project are Mata Escura, in Minas Gerais, in the Atlantic Forest biome, and comprising 50 hectares of restoration; the mosaic of Protected Areas of Carajás, located in Pará, in Amazonia.

(11.15.1.10) Descrição dos resultados até o momento

The agreement started in December 2022, and it will last until December 2027. One of the actions provided for this project is the training of key stakeholders. In 2023, 21 people were trained in the broad theme of ecological restoration. The other actions provided for this project are currently being implemented.

Row 7

(11.15.1.1) Título do projeto

Vale Amazon BioPark

(11.15.1.2) Tema do projeto

Selecione de:
☑ Espécies ameaçadas

(11.15.1.3) País/área

Selecione de:
☑ Brasil

(11.15.1.4) Localização

Selecione de:
☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:
☑ Voluntária

(11.15.1.6) Prazo

Selecione de:
☑ Não definido

(11.15.1.7) Ano de início

1985.0

(11.15.1.9) Descrição do projeto

The Vale Amazon BioPark is in the Carajás National Forest and is home to native species of Amazonia. It occupies an area of 30 hectares of preserved forest, which allows the free movement of animals in the visiting areas. It receives more than 100,000 visitors a year and supports various studies and surveys that aim to conserve Amazonian species. The park receives animals confiscated by government inspection agencies and participates in exchange programs between zoos.

(11.15.1.10) Descrição dos resultados até o momento

Approximately 360 animals are kept there, including some that are rare or endangered. One of the main activities carried out at the Biopark is the Reproductive Management Program for the Conservation of Endangered and Biologically Relevant Species, aimed at the captive reproduction of endangered species from the Amazon biome. The space contributes to the conservation of species, serving as a genetic stock and training professionals to work for the preservation of the Amazon's fauna and flora.

Row 8

(11.15.1.1) Título do projeto

Vale Natural Reserve

(11.15.1.2) Tema do projeto

Selecione de:

☑ Espécies ameaçadas

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Não definido

(11.15.1.7) Ano de início

1978

(11.15.1.9) Descrição do projeto

The Vale Nature Reserve (RNV) is one of the most important protected areas maintained by Vale, sheltering rare, endemic and endangered species, as well as possessing one of the largest seedling nurseries in Brazil. Located in Linhares, Espírito Santo, it has approximately 23,000 haectares which, together with the Sooretama Biological Reserve, with 27,000 haectares, make up the largest continuous remnant of Atlantic Forest in the southeastern tablelands of the country.

(11.15.1.10) Descrição dos resultados até o momento

The RNV has developed more than 300 research projects, 117 new species of flora described research into endangered species and environmental education projects. The Reserve protects around 5,000 species of plants and animals from the Atlantic Rainforest, including 190 endangered species (2023). The seedlings produced in the RNV nursery are used in forest restoration projects, helping to re-establish populations and conserve the genetic heritage, as well as in environmental education campaigns.

Row 9

(11.15.1.1) Título do projeto

The Private Natural Heritage Reserve (RPPN) Mata do Jambreiro

(11.15.1.2) Tema do projeto

Selecione de:

☑ Áreas protegidas

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Não definido

(11.15.1.7) Ano de início

1998

(11.15.1.9) Descrição do projeto

The Mata do Jambreiro RPPN is the largest private protected area in the Belo Horizonte Metropolitan Region, in the state of Minas Gerais, Brazil. It covers 912 hectares of forests and rupestrian fields in the transition between two biomes considered to be of global importance for conservation: the Atlantic Forest and the Cerrado. The work started by Vale two decades ago proves that economic development can take place in harmony with the preservation of green areas.

(11.15.1.10) Descrição dos resultados até o momento

The area protects essential ecosystem services for the surrounding communities, contributing to the climate balance in the region, preserving 33 springs and watercourses, and contributing to the formation of ecological corridors. Several research projects have registered 180 bird species, 62 mammal species, and more than 100 plant species protected in the area, including endemic and endangered species.

Row 10

(11.15.1.1) Título do projeto

Lake Matano Rehabilitation Project

(11.15.1.2) Tema do projeto

Selecione de:
☑ Restauração (outros)

(11.15.1.3) País/área

Selecione de:
☑ Indonésia

(11.15.1.4) Localização

Selecione de:
☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:
☑ Exigências legais

(11.15.1.6) Prazo

Selecione de:
☑ Definido

(11.15.1.7) Ano de início

2021.0

(11.15.1.8) Ano de término

2023.0

(11.15.1.9) Descrição do projeto

The project envolves monitoring the water quality of Matano Lake and and the biota of Matano, conducted by independent consultants every 3 months and 2 years respectivelly, and rehabilitation of the shore of Matano Lake using freshwater mangrove. Other project actions include the rehabilitation of the river's edge area as the entrance to Lake Matano and the recomposition of the vegetation cover along the stream by planting trees, in collaboration with the local government.

(11.15.1.10) Descrição dos resultados até o momento

PT Vale together with the Government and the communities planted 1,000 tembeuwa seedlings in Muara Tapolemo, on the shores of Lake Matano, East Luwu Regency, to rehabilitate and maintain the lake ecosystem, especially on the shoreline.

Row 11

(11.15.1.1) Título do projeto

Sawerigading Wallacea Biodiversity (Kehati) Park

(11.15.1.2) Tema do projeto

Selecione de:

☑ Áreas protegidas

(11.15.1.3) País/área

Selecione de:

☑ Indonésia

(11.15.1.4) Localização

Selecione de:

☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Não definido

(11.15.1.7) Ano de início

2023

(11.15.1.9) Descrição do projeto

As part of PT Vale's commitment to biodiversity conservation, the Company has established the Sawerigading Wallacea Biodiversity (Kehati) Park, serving as a conservation area for flora and fauna, an educational hub for biodiversity, a recreational space, and a jogging track. The park was inaugurated on March 30, 2023, by President Joko Widodo. The facilities of the Sawerigading Wallacea Biodiversity Park cover an area of 15 Ha and are integrated with a nursery center.

(11.15.1.10) Descrição dos resultados até o momento

In addition to providing a new habitat for plant species, the Sawerigading Wallacea Biodiversity Park is home to 30 deer and serves as a breeding ground for endemic butterflies.These are part of a ex-situ conservation for Rusa Timor (Rusa timorensis) in collaboration with MoEF (natural conservation berau-BKSDA) and a butterfly conservation programm, consisting of: - Larva and nectar plan along some segment of SWP (established) - Developing butterfly dome (in progress)

Row 12

(11.15.1.1) Título do projeto

SustentaBio

(11.15.1.2) Tema do projeto

Selecione de:

☑ Conservação florestal

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2023

(11.15.1.8) Ano de término

2027

(11.15.1.9) Descrição do projeto

Vale, ICMBio and Fundo Vale have teamed up to seek solutions to the biggest bottlenecks facing extractive communities and strengthen its productive activities. The projects developed involve seven civil society organizations, 14 Sustainable Use Conservation Units and one Indigenous Land. The program covers 10 million hectares of forests in the Amazon, strengthening the bioeconomy in these territories and supporting the socio-productive development of traditional peoples and communities.

(11.15.1.10) Descrição dos resultados até o momento

Contracting of six projects that began execution in 2023. Seventh project in the contracting phase. Governance between Fundo Vale and ICMBio defined. Program Communication Guidelines developed. Program monitoring strategy defined and being implemented. Cooperation agreement in the final phase of formalization.

Row 13

(11.15.1.1) Título do projeto

Environmental DNA Project

(11.15.1.2) Tema do projeto

Selecione de:

☑ Conservação florestal

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Fora da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2022

(11.15.1.8) Ano de término

2027

(11.15.1.9) Descrição do projeto

Environmental DNA, a partnership between Vale Institute of Technology for Sustainable Development and Chico Mendes Institute for Biodiversity Conservation (ICMBio), has the aim to develop the genetic and genomic mapping of fauna and flora species endangered, exotic or that have the potential to generate income in bioeconomy projects, especially in the Amazon. Investments in the project amount to R111 million over five years and the research is being carried out in federal conservation units.

(11.15.1.10) Descrição dos resultados até o momento

Throughout 2023, workshops were held involving members of Vale Institute of Technology for Sustainable Developm and ICMBIO, with the aim of defining species priorities for genomic investigation, training in environmental DNA methods and capacity building in genomic methodologies. This collaboration promises to be a pioneering effort in biodiversity conservation, and the scientific community, as well as the general public, are eagerly awaiting the insights that will emerge from this research.

Row 14

(11.15.1.1) Título do projeto

Natural Capital of the Carajás Forests

(11.15.1.2) Tema do projeto

Selecione de:

☑ Conservação florestal

(11.15.1.3) País/área

Selecione de:

☑ Brasil

(11.15.1.4) Localização

Selecione de:

☑ Dentro da área de influência do projeto de mineração

(11.15.1.5) Motivação principal

Selecione de:

☑ Voluntária

(11.15.1.6) Prazo

Selecione de:

☑ Definido

(11.15.1.7) Ano de início

2019

(11.15.1.8) Ano de término

2023

(11.15.1.9) Descrição do projeto

Vale Institute of Technology for Sustainability began a study to assess the natural capital of tropical forests in the Amazon, 2019. The project demonstrated the link between ecosystem functions and services, reinforcing the bond between nature and people in a tropical forest context. Among the results were the mapping of 121 bee species, 54 butterfly species, 292 bird species and 358 plant species. The information was published in the book "Natural Capital of the Carajás Forests".

(11.15.1.10) Descrição dos resultados até o momento

The study found that 83% of the species in the Carajás Forests must be preserved to ensure resilience and that functional diversity depends on 63% of non-replaceable species. Carbon storage in the soil and vegetation is 41.6 and 173 MgC/ha respectively. 66% of plantations depend on pollinating bees and the value of the annual pollination service is US 4.5 million. The presence of forests generates a 21% increase in evapotranspiration and a decrease in temperature of 0.3 C.

[Adicionar linha]

(11.16) Os projetos de mineração têm planos de fechamento em vigor?

(11.16.1) Há planos de fechamento em vigor?

Selecione de:

☑ Sim

(11.16.2) Explique

The process of planning for asset closure should occur simultaneously with operations to minimize risks and maximize opportunities, thus generating value for the territories. Currently, we operate on an annual cycle to plan and execute the progressive closure of assets while studying the aptitudes and potential of our territories. All projects in the mining title application phase, or those already granted but not initiated by Vale, have closure plans. Provisions totalling approximately US 3,466 million have been made.These plans align with the best practices adopted by the ICMM and national legislation.
[Linha fixa]

(11.16.1) Dê detalhes sobre as minas com planos de fechamento.

(11.16.1.1) % de minas com planos de fechamento

100.0

(11.16.1.2) % de planos de fechamento que levam em consideração aspectos da biodiversidade

100.0

(11.16.1.3) Há uma provisão financeira para as despesas com o fechamento de minas?

Selecione de:

☑ Sim, para todas as minas

(11.16.1.4) Frequência com que os planos de fechamento são revisados

Selecione todos os aplicáveis

☑ Ocasionalmente (todos os projetos)

(11.16.1.5) Explique

The guidelines for asset decommissioning and mine closure incorporate good corporate practices and procedures, which include the establishment of provisions for asset decommissioning. This is in accordance with the guidelines of both the Brazilian Securities and Exchange Commission (CVM) and the U.S. Securities and Exchange Commission (SEC), complying with IAS 37 and the Sarbanes-Oxley Act, and is implemented throughout the project's life cycle. The future use of each unit is determined in the Mine Closure Plan, taking into account environmental, social, and economic aspects, in accordance with specific operational procedures. Every Vale operation has a Mine Closure Plan.A provision is set aside for the anticipated costs of mine closures and deactivating related mining assets. In 2022, due to changes in discount rates and updates to the mine closure plans, which take into account new legal requirements related to decommissioning, the provision stood at US 3.466 billion.Regarding Closure Plans, they are prognostic and conceptual during the implementation and early stages of an operational unit. As operations continue and the closure timeline is defined, studies and designs develop into more detailed stages.Thus, as the project progresses through its lifecycle, varying degrees of knowledge and control become available, reducing risks and uncertainties related to Mine Closure. This process details future usage vocations and contributes to the value chain. In addition, all closure plans undergo a routine update every five years.
[Linha fixa]

(11.17) É possível divulgar a área reabilitada (no total e no ano de reporte) para cada um dos projetos de mineração?

	Está sendo divulgada uma área reabilitada (no total e no ano de reporte)	Explique
	Selecione de: ☑ Sim	*n.a.*

[Linha fixa]

(11.17.1) Dê detalhes sobre a área reabilitada (total/ano de reporte) para cada um dos projetos de mineração, incluindo o uso da terra após a mineração.

Row 1

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 1

(11.17.1.2) Área total reabilitada (hectares)

1786.94

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

117.75

(11.17.1.4) Descreva o uso da terra após a mineração

Due to the insertion of a large part of the project (excavations, piles of waste, and sediment containment dikes) in the Flona de Carajás, the future use of environmental conservation was considered for these areas. The areas of the pits, waste piles, and sediment containment dikes should be subjected to rehabilitation aiming at integration with the local environment based on measures that will initially be developed within the scope of the Degraded Area Recovery Plan. For the areas of the project located outside of Flona, such as the processing plant and part of the administrative structures, agrosilvo-pastoral use is proposed as the current land use. It is indicated that in future revisions/updates of the conceptual closure plan, a study of alternatives for future, more in-depth use will be carried out. This study should also consider stakeholders 's expectations (surrounding communities, environmental agencies) about the end of the area. The proposed future use necessitates that the industrial areas will be dismantled and removed, and the remaining space will be rehabilitated. Some structures may remain if they do not represent environmental risks. However, as the definition of the remaining structures will only be carried out at a time close to the closure of the mine, in this conceptual closure plan, it was considered that all administrative structures would be removed. Finally, the total rehabilitated area was calculated from the reporting of the last seven years related to GRI indicator MM1, being reported here the permanent and temporary rehabilitation of mined areas. Similarly, the area rehabilitated in the reporting year corresponds to that reported against GRI indicator MM1, referring to permanent and temporary restoration.

Row 2

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 2

(11.17.1.2) Área total reabilitada (hectares)

11830.1

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

151.63

(11.17.1.4) Descreva o uso da terra após a mineração

Itabira is Vale's birthplace, where was founded in 1942. To responsibly and sustainably wind down operations in the area, Vale is beginning a gradual closure process and transitioning to post-mining activities. The total rehabilitated area was calculated from the reporting of the last 6 years related to GRI indicator MM1, being reported here the permanent and temporary rehabilitation of mined areas. Similarly, the area rehabilitated in the reporting year corresponds to that reported against GRI indicator MM1, referring to permanent and temporary rehabilitation. To improve environmental quality and meet the conditions, Vale carries out rehabilitation actions in degraded areas in the Mining Complex of Itabira to make these areas suitable for new uses in conditions of environmental balance. For the rehabilitation to occur, agronomic techniques and practices are used that promote the vegetation cover, aiming at restoring and stabilizing the relief and improving the productive potential. In addition to planting techniques for rehabilitating degraded areas, these were also used in implementing the physical barriers and tree curtains in the Mining Complex of Itabira. These green belts have several environmental functions, such as: - Protecting the area of the enterprise by blocking the access of people in risk areas; -Softening the visual impact of the landscape and noise on the surrounding communities, and; - Reducing the spread of dust and wind to the city and public roads. The rehabilitation of degraded areas and the installation and maintenance of the green curtain sought to meet the conditions stipulated by the environmental agency. The Environmental Mine Closure Plan, which will contemplate the future use of the rehabilitated area, will be presented by Vale to the competent bodies, as determined by DN No. 127/2008 in its article 5: "At least two years before the closure of the mine, the entrepreneur must file the Environmental Mine Closure Plan at the unit of the environmental agency responsible for licensing the project.

Row 3

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 3

(11.17.1.2) Área total reabilitada (hectares)

1845.19

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

70.6

(11.17.1.4) Descreva o uso da terra após a mineração

The Environmental Rehabilitation services are a crucial stage of Vale's Environmental Rehabilitation Program, which includes approved rehabilitation plans from the environmental licensing processes of its projects. The planning process involves identifying stable surfaces with proper drainage for re-vegetation. The rehabilitation planning aligns with the company's internal normative standard to promote re-vegetation in all areas cleared by mining activities, including land structures unchanged for six months or more. Environmental rehabilitation services are performed by contracted and specialized companies with technically qualified professionals. The execution methods are communicated to the contractors through technical recommendations and specifications, including the required quantities of seeds, fertilizers, and corrective measures for planting. The rehabilitation process consists of sowing forages, planting tree species, and reintroducing plants rescued from the native flora. The total rehabilitated area is calculated based on the reporting of the past 5-6 years, specifically related to the GRI indicator MM1. Similarly, the area rehabilitated in the reporting year corresponds to the data reported for the GRI indicator MM1, specifically referring to permanent and temporary rehabilitation in the Mariana Complex.

Row 4

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 4

(11.17.1.2) Área total reabilitada (hectares)

3014.01

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

148.51

(11.17.1.4) Descreva o uso da terra após a mineração

The total area rehabilitated over the past six years has been calculated based on the GRI indicator MM1, which includes both permanent and temporary rehabilitation of mined areas. The reported area corresponds to the same indicator and encompasses both permanent and temporary rehabilitation. These reports are compiled by the directorate, and the figures presented here represent the combined rehabilitated area in hectares for the Vargem Grande Complex. The actions undertaken to rehabilitate degraded areas, which have resulted in these numbers, encompass efforts to restore physical stability in temporary rehabilitation areas as well as permanent actions aimed at reestablishing the physical, chemical, and biological conditions necessary for habitat recovery. The main objective of permanent rehabilitation is to reintegrate these habitats into the natural landscape, allowing them to regain their primary ecological functions. The restoration of degraded areas

is an inherent process in mining operations and is planned by Vale throughout the various stages of its ventures, from initial planning and ongoing operations to the eventual closure of activities.

Row 5

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 5

(11.17.1.2) Área total reabilitada (hectares)

2818.17

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

111.74

(11.17.1.4) Descreva o uso da terra após a mineração

The total area rehabilitated over the past six years has been calculated based on the GRI indicator MM1, which includes both permanent and temporary rehabilitation of mined areas. The reported area corresponds to the same indicator and encompasses both permanent and temporary rehabilitation. These reports are compiled by the directorate, and the figures presented here represent the combined rehabilitated area in hectares for the Paraopeba Complex. The actions undertaken to rehabilitate degraded areas, which have resulted in these numbers, encompass efforts to restore physical stability in temporary rehabilitation areas as well as permanent actions aimed at reestablishing the physical, chemical, and biological conditions necessary for habitat recovery. The main objective of permanent rehabilitation is to reintegrate these habitats into the natural landscape, allowing them to regain their primary ecological functions. The restoration of degraded areas is an inherent process in mining operations and is planned by Vale throughout the various stages of its ventures, from initial planning and ongoing operations to the eventual closure of activities.

Row 6

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 6

(11.17.1.2) Área total reabilitada (hectares)

1691.18

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

43.54

(11.17.1.4) Descreva o uso da terra após a mineração

Alternatives for the future use of the area will be presented in accordance with the Normative Deliberation of State Council for Environmental Policy (in Portuguese, Conselho Estadual de Política Ambiental - COPAM) No. 127/2008, at least two years before the deactivation of the enterprise. These alternatives will be reported in the Mine Closure Plan. It should be noted that, due to possible changes in legislation and/or in the estimated useful life of the project, the referred plan may be anticipated or extended. However, Vale has been carrying out environmental rehabilitation actions in its mining projects, as the company believes that the execution of environmental rehabilitation works concurrently with the operation of the project contributes to the complex process of closing the mine. Since taking over the operation of the Brucutu Mine in 1994, Vale has been carrying out environmental rehabilitation work in its areas, from the moment they are released by the operation. The environmental rehabilitation actions of the Brucutu mine pit are aimed at stabilizing the banks of the Waste Rock Pile and minimizing the carrying of sediments. The finished banks have been stabilized, reconfigured and restored. As the banks are finalized and stabilized, the process of environmental rehabilitation of the pile takes place through the revegetation procedures of these banks. At the end of the disposition in a given bank, erosions and irregularities are reconfigured; liming is carried out by incorporating dolomitic limestone into the soil and then digging holes over the entire surface, which provides the soil with sufficient roughness to allow the fixation of agricultural inputs. After digging, the input cocktail is prepared, consisting of fertilizers and grass and legume seeds, to be applied in the area. The total rehabilitated area has been calculated based on the reporting of the last 6 years related to GRI indicator MM1, being reported here the permanent and temporary rehabilitation of mined areas. Similarly, the area rehabilitated in the reporting year corresponds to that reported against GRI indicator MM1, referring to permanent and temporary rehabilitation. These reports are made by directorate, and the numbers presented here refer to the Brucutu/Agua Limpa Complex representing the rehabilitated area in hectares.

Row 7

(11.17.1.1) ID do projeto de mineração

Selecione de:

☑ Projeto 7

(11.17.1.2) Área total reabilitada (hectares)

3773.54

(11.17.1.3) Área reabilitada no ano de reporte (hectares)

231.22

(11.17.1.4) Descreva o uso da terra após a mineração

The project brings the concept of land rehabilitation and reclamation simultaneously to the opening of new areas as the mining areas are cleared. The stages of land rehabilitation in the post-mining area include land surface arrangement/formation with standard slope rehabilitation terrain, topsoil restoration using collected topsoil, erosion control, drainage construction, revegetation road construction, reforestation, plant maintenance - including weed clearing, pest control, manipulation of stunted plant roots, and fertilization - until they can grow naturally in a sustainable manner. PT Vale has a post-mining plan and biodiversity management for 100% of mining operation areas in the Sorowako block to conserve biodiversity. PT Vale aims to restore 15,000 hectares of land to become forest by 2025 through Vale's post-mining rehabilitation activities, as well as the rehabilitation of critical land and watersheds. We are targeting more than 10,000 ha of land for reclamation and rehabilitation by 2024.
[Adicionar linha]

(11.18) A organização colabora ou estabelece parcerias com organizações não-governamentais para promover a implementação dos seus objetivos e compromissos relacionados à biodiversidade?

(11.18.1) Colaborando ou fazendo parcerias com ONGs

Selecione de:
☑ Sim

(11.18.2) Explique

Vale's ambition is to promote sustainable mining and to become a global reference in practices that minimise negative impacts and maximize positive results for nature and people. Vale cannot achieve this alone; partnerships are essential to collectively shape the future we want for mining and nature. Keeping this in mind, we have established partnerships with various organizations to improve our management, leverage innovative actions, and support us in achieving the goals of the 2030 Agenda, including our Forest Goal.The Vale Fund is spearheading the implementation of our Forest Goal, with support from the Vale Natural Reserve and the Vale Institute of Technology. The Vale Fund's mission is to promote solutions that have positive social and environmental impacts, and that strengthen a sustainable, fair, and inclusive economy. It works closely with organizations and businesses across different territories to maintain standing forests while promoting development and strengthening businesses. Partnerships established by the Fund with various NGOs contribute to achieving strategic goals and expected results. Some examples are presented below, with a notable highlight being the Acceleration Program, in partnership with the CERTI Foundation.The Vale Natural Reserve undertakes various projects related to the conservation and management of protected areas and endangered species, in partnership with different institutions. The Vale Institute of

Technology (ITV-DS) establishes multi-sector partnerships that mobilize and maintain knowledge, expertise, technology, and financial resources for research development.Examples of these partnerships will be presented below.
[Linha fixa]

(11.18.1) Dê detalhes sobre as principais colaborações e/ou parcerias com organizações não-governamentais ativas durante o ano de reporte.

Row 1

(11.18.1.1) Organização

AMDA - Associação Mineira de Defesa do Ambiente

(11.18.1.2) Escopo da colaboração

Selecione de:
☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis
☑ Projeto 2
☑ Projeto 3
☑ Projeto 4
☑ Projeto 5
☑ Projeto 6

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis
☑ Outro, especifique :Fire prevention and combat

(11.18.1.5) Descreva a natureza da colaboração

One of the greatest threats to the protection of biodiversity in the region that encompasses municipalities located in the Quadrilátero Ferrífero Region is forest fires that, annually, degrade extensive areas of natural vegetation in the dry months. The forest types in the valley and slopes are certainly the most impacted due to the lower resilience of their species than those of rural and savanna formations. In the stretches where the fires were more severe, the forest vegetation was fragmented, leaving isolated capons with highly negative consequences for the function of ecological corridors and fauna recolonization. Due to their operational characteristics, the Brigades Amda/Vale play a crucial role in protecting the area's biodiversity. They are directly involved in combatting forest fires and work to prevent and mitigate the damage caused by these events. Their efforts are essential for the conservation of biodiversity in the region. In 2023, the Brigades fought 121 fire incidents, which affected an area of 1,519.22773 hectares. Most of the fires fought (34%) occurred in Vale areas. There were 27 incidents (22%) in the surroundings of conservation units, followed by 21 incidents (17%) in conservation units (PESRM, MONA Estadual da Serra da Moeda, ESEC Estadual de Fechos, ESEC Estadual do Cercadinho and RPPN Cora Funil). The type of vegetation most affected in terms of the size of the burned area was the campestre natural formation, with 949.3539 hectares, representing 62% of the burned areas in which the Brigades operated in 2023.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 2

(11.18.1.1) Organização

COEX - (Carajás National Forest Extractive Cooperative)

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Áreas protegidas

☑ Espécies ameaçadas

☑ Restauração

(11.18.1.5) Descreva a natureza da colaboração

Vale's partnership with the Carajás National Forest Extractive Cooperative (in Portuguese Cooperativa de Extrativistas de Carajás - COEX) has resulted in the direct purchase of native plant seeds for use in seedling development, area recovery, and species conservation. This purchase mechanism generates income for local communities during months when collecting jaborandi leaves is impossible. The partnership is also vital for species diversity and the preservation of endangered species. Sustainable collection techniques have been adopted to mitigate the risks that extractive activities pose to the conservation of jaborandi (Pilocarpus microphyllus). One of the main techniques is pruning plants instead of uprooting them, as used to happen. The collectors received training and learned to handle it correctly. And this partnership is not limited to COEX but also involves an environmental governmental agency (ICMBio), the Federal Rural University of the Amazon, and ITV-DS, thus composing the Jaborandi Project. Thus, research is carried out to produce knowledge about the plant's ecosystem, and the leaf collectors themselves become allies of the project and guardians of the species. This will enable the conservation of the species and its sustainable use. In 2023, Vale bought 2,629.9 kilos of COEX seeds from 108 species. Vale also supports COEX in transporting leaves by helicopter, mainly from an area of FLONA Carajás called VP5. The VP5 area is isolated and difficult to access. The leaf collectors extract the leaves and accumulate the production in a glade in the middle of the forest. With the support of corporate aviation, the leaves are boarded and transported to the hangar at Núcleo Urbano de Carajás, where they are disembarked and transported overland to COEX's processing shed. In 2023, around 20,807 kilos of leaves were transported by corporate aviation.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 3

(11.18.1.1) Organização

IDESAM – (Instituto de Conservação e Desenvolvimento Sustentável da Amazônia) – Amaz Impact Business Accelerator

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Outro, especifique **:**Technical assistance and support for the financial structuring of community businesses (associations and cooperatives) in the Amazon region.

(11.18.1.5) Descreva a natureza da colaboração

Amaz is a startup accelerator created by Idesam (Instituto de Conservação e Desenvolvimento Sustentável da Amazônia) to support entrepreneurs working in the Amazon region,and building on the success of the Acceleration and Investment Program of the Partners for the Amazon Platform, which accelerated 30 startups and was recognized as the top acceleration program in northern Brazil. In 2023, the Vale Fund promoted the third cycle of AMAZ Impact Accelerator, which aims to invest, accelerate and drive disruptive impact businesses that seek permanent solutions to reduce deforestation and promote forest conservation in the Amazon, with the involvement of local populations. AMAZ will invest US 4,9 million and guarantee the management and monitoring of these businesses for the next 10 years. In this way, AMAZ plans to catalyze social and environmental impact businesses, build capacity, and provide and unlock financial capital to strengthen the Amazon bioeconomy. In addition, the Vale Fund sponsored several events that reaffirmed its performance in the social ecosystem, to act in territories where there are opportunities to fulfil its mission (to drive positive social and environmental impact solutions that strengthen a sustainable, fair, and inclusive economy), with special attention to the Amazon Region. In 2023, the program supported the acceleration process of five startups with estimated impacts, between five and ten years, of more than 1 million hectares of preserved forest, development of more than 15 Amazon value chains, 2,000 hectares of forests recovered, hundreds of community suppliers benefited and an increase in the flow of investments in the Amazon region by R50 million.

(11.18.1.6) Duração (até)

Selecione de:

☑ > 2030

Row 4

(11.18.1.1) Organização

Sustainable Connections Institute (Conexsus) – Impact Finance: unlocking the socio-bioeconomy that generates income and conserves biomes

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Outro, especifique **:**Technical assistance and support for the financial structuring of community businesses (associations and cooperatives) in the Amazon region.

(11.18.1.5) Descreva a natureza da colaboração

In this project, Conexsus will address the main gaps that prevent the development of the socio-bioeconomy: 1) the lack of a mature support system that helps community businesses to develop (incubators, accelerators, and other intermediaries), 2) the absence of financial mechanisms associated with development approaches suited to the stage of maturity of impact businesses, especially community ones, 3) the lack of correct incentives that led rural credit to finance almost exclusively livestock and grain production, and 4) the deficiency in the adoption of technologies that improve competitiveness in these value chains. The interventions proposed will enable fundamental changes by 2025 for the following reasons: a) post-covid economic recovery needs to reinforce the interruption of native vegetation conversion through the expansion of an inclusive low-carbon bioeconomy, b) the acceleration of sustainable land use must take place in the next three years to generate tangible benefits by 2030 in terms of climate and emissions, and c) Markets are looking for opportunities and community enterprises still fall short of the minimum requirement to participate in value chains. The main goal is to consolidate financing mechanisms that are perennial and profitable, offering scalable solutions for investors, buyers, and community businesses with socioenvironmental impact, which allow the development of socio-bioeconomy in the Amazon and Brazil. In 2023 it was developed a new line of microcredit for incipient organizations with easier access, new operation in the rubber chain involving community businesses and Michelin. Market Access - export plan prepared for five businesses in the cocoa chain, marketing solutions for community businesses mapped. Access to credit - 12 credit projects that are in the preparation phase worth R938 thousand at Banco do Brasil.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 5

(11.18.1.1) Organização

IMAZON – (Instituto do Homem e Meio Ambiente da Amazônia) – Previsia

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Desmatamento e/ou degradação florestal

(11.18.1.5) Descreva a natureza da colaboração

An innovative artificial intelligence tool has been developed to analyse diverse data sources, including topography, land cover, urban infrastructure, official and unofficial roads, and socioeconomic data, to predict deforestation in the Brazilian Legal Amazon. This tool identifies areas at risk of deforestation in the next 12 months. Facing complex issues such as deforestation in the Amazon demands coordinated and synergistic, multisectoral, multi-institutional actions involving actors from different geographic scales, such as those successfully implemented up to 2012, within the scope of the Action Plan for Prevention and Control Deforestation in the Legal Amazon (PPCDAm), also highlighting, in Pará, the actions of the Green Municipalities Program (PMV, Portuguese acronym for Programa Municípios Verdes -). Imazon actively supported both programs, which are still in place, but weakened by a series of measures that made environmental and land regulatory frameworks more flexible, reduced the budgets of research/monitoring/inspection bodies, among others that favoured impunity and, consequently, the escalation of illegal and predatory activities in the region. In 2023 the platform did a data transfer and operation to an autonomous cloud, without dependence on Microsoft. Update of forecasts, including illegal roads and layer with CAR. Conducting training at the Public Ministry for public defenders in Pará. Expansion of agreements for MT and RO (this will include the Court of Auditors) to use the platform in preventive actions, in more critical municipalities. Training for the Federal Public Ministry. PrevisIA roll with critical municipalities and projection for the period (based on PRODES data), mainly with CAR.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 6

(11.18.1.1) Organização

Certi Foundation – Jornada Amazônia's Bioeconomy Business Innovation Platform

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Outro, especifique :Economic competitiveness of the forest standing through biodiversity and innovation

(11.18.1.5) Descreva a natureza da colaboração

This Initiative intends to create and scale a comprehensive bioeconomy business innovation platform in the Amazon, based on the previous experience of Jornada Amazônia - an initiative to promote the entrepreneurial ecosystem within the Amazon region. The project understands that innovative startups within the intermediate links of production chains have the potential to diversify demands, reduce dependencies, can overcome challenges of scale and logistics, and promote competitiveness for the conserved forest in a systemic and geographically distributed process, adding value locally and connecting with global chains. In this context, actively connecting the chain's base with innovative startups can diversify demand and generate new business opportunities for local communities. Also, reducing the risk and vulnerability caused by the dependency on fewer customers or intermediaries. The value distribution will reach the forest through fair, productive inclusion in diversified innovative chains promoted by startups and conservation constraints for integration into business opportunities. The focus will be driven by demand from industry segments (B2B market) with more significant potential for forest regenerative and conservative practices. In 2023, 6,119 people signed up for the Jornada Amazônia Platform programs: More than 5.3 thousand signed up for the Gênesis Program, which encourages entrepreneurial culture, generating more than 500 ideas for innovative solutions in the program's community, and training 37 ambassadors; 662 ideas registered in Sinapse da Bioeconomia, of which 71 were selected to receive support for creation and structuring as a business. Sinapse Bio distributed R4.9 million in non-refundable resources to these projects, all with an impact on the Legal Amazon. The Sinergia Program chose 22 businesses already in operation or operating in the Amazon region for support and monitoring, aiming to increase competitiveness and impact, in addition to qualifying them for access to the investor market.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 7

(11.18.1.1) Organização

Chico Mendes Institute for Biodiversity Conservation - ICMBio

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Áreas protegidas

☑ Espécies ameaçadas

(11.18.1.5) Descreva a natureza da colaboração

Vale has established a partnership with ICMBio to protect a continuous stretch of Amazon rainforest, which covers an area larger than 800,000 soccer fields in the state of Pará. The mosaic made up of six conservation units is protected by a team of forest rangers maintained by an environmental compensation agreement between private enterprise and the Chico Mendes Institute for Biodiversity Conservation (ICMBio). The largest of these is the Carajás National Forest, which is home to the world's largest iron ore mine and more than 3,000 different types of animal and plant species. According to scientific publications, there are 68 types of amphibians, 131 types of reptiles, 594 different birds and 145 species of mammals, more than 200 types of bees and 1,800 species of flora that make up an immense variety of fauna and flora. In addition to more than 11,000 protected water springs. Surveillance is carried out from the air, on the ground, along the region's rivers and in the fight against fire outbreaks. In the last three years (2021 to 2023), more than 14,000 patrols were carried out to protect the biome. The area covered by car during the patrols totals more than 2,200,000 kilometers. In 1080 days, that would be the same as going back and forth from Parauapebas to Belém three times a day by car. On foot, the total kilometers covered is almost as if the team had run a marathon a day, which has an official course of 42 kilometers. In 2021 to 2023, 422 attempts at illegal activities within the units were prevented. These include attempts at illegal mining, followed by predatory hunting, illegal fishing and illegal logging.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2026-2030

Row 8

(11.18.1.1) Organização

Indonesia Business Council for Sustainable Development (IBCSD)

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 7

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Áreas protegidas

☑ Espécies ameaçadas

☑ Restauração

(11.18.1.5) Descreva a natureza da colaboração

Vale collaborates with the Indonesia Business Council for Sustainable Development (IBCSD) in compiling the Guide for Sustainable Biodiversity Management. The document, released in 2017, becomes the first in the Indonesian mining business for biodiversity conservation activities. This project will encourage mining companies to implement best practices to manage biodiversity in the site of the mining area.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 9

(11.18.1.1) Organização

Museu Paraense Emílio Goeldi (MPEG)

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Planos de ação para a biodiversidade

☑ Espécies ameaçadas

(11.18.1.5) Descreva a natureza da colaboração

Partnership established within the scope of the Herpetofauna project, whose scope is to expand knowledge of the herpetofauna of the south-eastern region of Pará, more specifically, in the surroundings of the mosaic of protected areas of Serra dos Carajás through the generation of genetic and taxonomic knowledge about amphibians and Squamata reptiles (snakes, lizards and amphisbaenians) and making information available in public databases, filling knowledge gaps that can support biodiversity conservation actions. The expertise of MPEG herpetofauna taxonomists is essential for the correct identification of specimens of amphibians and Squamates reptiles collected during the project, and conduction of studies in systematics and taxonomy, in addition to establishing standardized and adequate collection protocols for comparison of areas sampled.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 10

(11.18.1.1) Organização

The Rockefeller University

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Áreas protegidas

☑ Espécies ameaçadas

(11.18.1.5) Descreva a natureza da colaboração

The partnership with Rockefeller University also started with the Amazoomics project, which produced high-quality genomes for 29 endangered species of Brazilian fauna. Genomic information is currently an important knowledge base for understanding physiology and genetics, these data are also essential for studies on the evolution of species of Brazilian biodiversity. As the project evolves into the Molecular Research as a Tool in Biodiversity Conservation project, the partnership will contribute to genome studies of emblematic species of birds and mammals to facilitate future fine-scale genomic assessments and thus help to identify possible biotechnological applications that can involve the development of patents, in addition to generating baseline information, focusing on the threatened biodiversity of the Amazon. This partnership will also strengthen the role of BioPark Vale Amazonia and Botanical Parks as an important research and education centres concerned with the conservation of Amazonian biodiversity.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2026-2030

Row 11

(11.18.1.1) Organização

The Marcos Daniel Institute is a private non-profit association qualified as Civil Society Organization of Public Interest in Vitória, Espírito Santo, Brazil. IMD's activities focus on developing biodiversity conservation projects and forming multipliers for nature conservation.

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Planos de ação para a biodiversidade

☑ Áreas protegidas

☑ Espécies ameaçadas

☑ Restauração

(11.18.1.5) Descreva a natureza da colaboração

Vale provides technical support to the cherry-throated tanager (Nemosia rourei) Conservation Program through a cooperation agreement. Vale is lending its experts from the Vale Natural Reserve to conduct floristic surveys, evaluate reports on the recovery of degraded areas, monitor the ecology of the species, and search for nests, which contributes to the imminent understanding of biology, needs, and threats to the stabbing in the Atlantic Forest, to prevent its extinction and ensure its long-term survival. These activities align with objectives of the action plan for conserving Nemosia rourei, in which Vale contributed to the discussions during the workshop for its construction. In 2023 ITV carried out genetic analysis of 4 individuals of Nemosia rourei.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 12

(11.18.1.1) Organização

Federal University of Espírito Santo

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Na empresa como um todo

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Espécies ameaçadas

(11.18.1.5) Descreva a natureza da colaboração

Vale has a partnership agreement with the Federal University of Espírito Santo to monitor the Harpia harpyja species. This endangered species, which has a small population in the Atlantic Forest biome, has active nests in the forest forest complex comprising the Vale Natural Reserve and Rebio Sooretama (under ICMBio management). Through the partnership, Vale is promoting research and conservation of the species with financial support for monitoring the species' individuals and nests. As well as developing conservation strategies for one of the last Harpy populations in the Atlantic Forest, the project aims to generate income through birdwatching tourism, environmental education and strengthening Vale's socio-environmental role.

(11.18.1.6) Duração (até)

Selecione de:

☑ 2021-2025

Row 13

(11.18.1.1) Organização

Hasanuddin University

(11.18.1.2) Escopo da colaboração

Selecione de:

☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 7

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Desmatamento e/ou degradação florestal
☑ Planos de ação para a biodiversidade
☑ Áreas protegidas
☑ Espécies ameaçadas
☑ Restauração

(11.18.1.5) Descreva a natureza da colaboração

In early January 2023, PT Vale Indonesia signed a Memorandum of Understanding (MoU) with Hasanuddin University, continuing the partnership, and the scope of this MoU includes: 1. Human Resources capacity building program. 2. Study and research programs in agriculture, forestry, engineering, environmental and biodiversity conservation, protection, etc. 3. Community development and service programs. 4. Independent Campus Learning Program (MBKM). The partnership between PT. Vale and Hasanuddin University were carried out to update the Biodiversity Baseline in the Contract of the Work area of PT. Vale with the scope of activities: 1. Information Monitoring on the Diversity of Flora, Fauna, and Their Genetics. 2. Development of a Biodiversity Database System. 3. Training and Assistance for Monitoring Biodiversity Post Mining Habitat Assessment.

(11.18.1.6) Duração (até)

Selecione de:
☑ 2021-2025

Row 14

(11.18.1.1) Organização

Alliance for Restoration in Amazonia

(11.18.1.2) Escopo da colaboração

Selecione de:
☑ Projetos de mineração específicos

(11.18.1.3) ID do projeto de mineração

Selecione todos os aplicáveis
☑ Projeto 1

(11.18.1.4) Áreas de colaboração

Selecione todos os aplicáveis

☑ Restauração

(11.18.1.5) Descreva a natureza da colaboração

The Alliance for Restoration in the Amazon is a biomatic collective, whose mission is to articulate multiple actors for the restoration of degraded ecosystems in the Amazon, as a strategy integrated with conservation and with shared socio-economic benefits. The Alliance is made up of 44 members from civil society organizations, including ITV, fifteen research institutions, eight government bodies and thirty-two private companies. ITV is the leader of the Alliance's Public Policy Working Group (GT-PP), where it coordinates actions aimed at implementing forest restoration policies in the region. In 2023, ITV participated as one of the authors of the Technical Note "It is urgent to protect secondary vegetation in the Amazon" on the protection of secondary vegetation as a way of boosting restoration. ITV also took part in the review of Pará's Native Vegetation Restoration Plan, as a member of the reviewers' working group, invited by the State Secretariat for the Environment and Sustainability (SEMAS-Pará). ITV also took part as a guest speaker in the seminar on the implementation of environmental regularization plans (PRAs) for projects to recover degraded and disturbed areas (PRADAs) in the state of Pará, as well as the launch of PLANAVEG 2.0 in Brasilia, on strengthening the National Policy and Plan for the Recovery of Native Vegetation.

(11.18.1.6) Duração (até)

Selecione de:

☑ > 2030

[Adicionar linha]

(11.20) Existe engajamento com outras partes interessadas para intensificar a implementação das políticas relativas à biodiversidade?

Selecione de:

☑ Sim

(11.20.1) Forneça exemplos relevantes de outras atividades de engajamento relacionadas à biodiversidade realizadas durante o ano de reporte.

Row 1

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Financiamento de organizações de pesquisa

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(11.20.1.3) Explique

During 2023, the project for Research and Conservation of Species of Interest for the Conservation of the Quadrilátero Ferrífero was continued. The network of taxonomists was expanded to include 27 botanical families, 28 taxonomists from 16 Brazilian institutions. This network aimed to accurately identify botanical samples of taxonomic complexity that often needed to be determined by the botanists of the consultancies, given the need for specialization. With this work, it was possible to ratify the identification of species that had not been recorded for a long time, in addition to confirming the discovery of six new species for science and 10 possibly new species and starting in their process of description and publication. 245 species of conservation interest were determined and deposited, including the confirmation of new records of species that were already considered probably extinct in the wild, such as collections made in Vale areas, involving Paepalanthus argillicola at RPPN Trovões and RPPN Cata Branca; Paepalanthus gomesii at RPPNs Capivari I and II and RPPN Capanema; Paepalanthus moedensis at RPPN Cata Branca and the Serra da Moeda property; as well as Cattleya milleri at the Serra das Serrinhas property.

Row 2

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Engajamento com as comunidades locais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.20.1.3) Explique

Vale signed an agreement to accelerate the Carajás Extractive Cooperative (COEX) to develop of sustainable extractive activities of the Jaborandi, which included the participation of the Instituto de Socioeconomia Solidária. Located Parauapebas (Pará, Brazil), COEX's primary activity is extracting and commercializing of jaborandi leaf, which produces of remedies for glaucoma and cancer. The work contributes to the preservation of the Amazon Forest, generates income for local communities, reduces deforestation rates, and prevents the loss of biodiversity of native species. The Jaborandi (Pilocarpus microphyllus) is an endangered species native to hot and humid climate regions and found in Pará, Maranhão, and Piauí in partnership with COEX Carajás, the Vale Technological Institute for Sustainable Development (ITV-DS) carried out, for the first time, the DNA sequencing of the plant. It will allow researchers to map the genetic diversity of Jaborandi and understand how pilocarpine is produced, helping to ensure the species' long-term survival. On the business side, one of COEX's main clients is Carajás's Vale Seedling Nursery, the region where the mining company's largest mine is located. Today it is the only local extraction cooperative based on environmental conservation. It has authorization from ICMBio (the federal agency responsible for managing the protected area) to carry out this collection sustainably within National Forest. In addition, as the collection of jaborandi leaf is an activity that occurs only in three months of the year, there was a need to create income generation mechanisms for local communities in the other months. In 2023, Vale bought 2,629.9 kilos of COEX seeds from 108 species. The Vale Fund supports mechanisms to promote and strengthen the business; Vale's operations provide training and are the largest purchasers of seeds used for habitat restoration, while the ITV carries out research focused on improving collection, maintenance, and recovery techniques for the cooperative's target species.

Row 3

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Engajamento com as comunidades locais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.20.1.3) Explique

Biodiversity is an essential and intrinsic theme to the business, from its wealth, breadth, and value. Maintaining life and ecosystem services is vital for Vale. Among the additional and voluntary actions related to the conservation of biodiversity: The Vale Amazon BioPark serves as a breeding centre for 67 species of Amazonian fauna, housing over 360 individuals. The BioPark is dedicated to the ex-situ conservation of endemic and threatened species, including animals rescued from the company's operations, and those seized and saved by environmental agencies. The BioPark works with crucial environmental education and conservation awareness actions. In 2023, the park's visitation average is around 179 thousand visitors, including families, schools, universities, and research institutions. In addition, BioPark

developed a program for reproducing threatened species, such as the golden parakeet (Guaruba guarouba), endemic to the Brazilian Amazon and considered vulnerable to extinction and is associated with the Association of Zoos and aquariums of Brazil, this partnership seeks to bring together zoos and benefits in Brazil and internationally

Row 4

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Engajamento com as comunidades locais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.20.1.3) Explique

Since 2009, Vale has maintained the Vale Technological Institute - Mining and Sustainable Development (ITV DS) in Belém, a non-profit institution for postgraduate research and teaching. This non-profit institution is dedicated to postgraduate research and education, with a group of researchers focused on studying biodiversity and ecosystem services, especially in the Carajás National Forest. The network of collaborators and partners aggregates expertise and fosters capacity building, enhancing the performance of research and development on essential topics to reduce regional disparities. ITV-DS establishes multi-sector partnerships that mobilise and share research development knowledge, expertise, technology, and financial resources. Networking takes place both through collaboration among researchers and institutional affiliations. Among the partner institutions are meaningful local partnerships, institutions in several states of the country, government institutions, and research institutions abroad. The Institute's agenda focuses on biodiversity, environmental services, water resources, environmental genomics, reforestation with native species, recovery of degraded areas, climate change, occupation and land use, and socioeconomics. ITV DS is also actively training young researchers through the Professional Master in Sustainable Use of Natural Resources in Tropical Regions. In addition, we offer research scholarships and project subsidies to young residents in Pará who are working on dissertations that align with the United Nations Sustainable Development Goals (SDGs).

Row 5

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Outro, especifique **:**Association of Zoos and Aquariums of Brazil (AZAB)

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 1

(11.20.1.3) Explique

The BioPark is associated with the Association of Zoos and Aquariuns from Brazil (AZAB). The AZAB is internationally recognized for its animal welfare standards. This partnership aims to strengthen ex situ conservation actions in Brazil and internationally, through exchanges of experience with other ex situ conservation institutions. The AZAB plays the role of facilitator between ex situ conservation institutions, facilitating, for example, the exchange of specimens.

Row 6

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Engajamento com as comunidades locais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 7

(11.20.1.3) Explique

In 2019, PTVI signed an MoU (Memorandum of Understanding) with Mompotuo Mio Adio (MMA's) local community cooperative to conduct biodiversity conservation activities on 50 ha reclaimed post-mining areas. The Cooperative will supply and planting of native tree species seedlings and some healthy trees, which will produce non-wood forest products such as fruits, sap, etc. The selection of tree species is based on the Cooperative aspiration aligned with the closure plan. One of the objectives of this initiative is to provide alternative economic sources before the closure of the mine. Almost all reclamation activities involve local communities and are divided into several vendors. Each week will be assessed by each target given. In the scope of the contract, the vendor will be prepared all equipment to support land preparation activities. In the range, the warranty is emphasized regarding the percent of plant growth for six months, and if the percent grows less than 80% before planting local plants, then the vendor is obliged to re-enrich. In 2023, the reclaimed mining land reached 224.4 Ha, achieving 86.3% of the targeted 260 Ha. We aim to complete the reclamation and rehabilitation of land totaling over 10,000 hectares by the year 2024.

Row 7

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Participação em iniciativas governamentais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 7

(11.20.1.3) Explique

Since 2018, we have implemented our Community Development and Empowerment Program (PPM) patterns and schemes based on our Independent Rural Development Program (PKPM) within the four areas in Blok Sorowako, East Luwu Regency, and South Sulawesi. Through this PPM-PKPM program, PT Vale gives the community stimulant funds to develop their regions and top products. PT Vale has been operating in the region for five decades, and during this time, the company has brought significant changes to the local community. It includes creating job opportunities and developing various public infrastructure such as health, education, transportation facilities, and other infrastructure that drives the local economy. PT Vale also implements multiple community development programs. Entering 2013, PT Vale changed its approach to community development programs implemented through the Integrated Community Development Program (PTPM). PTPM planning, and implementation aligned with East Luwu Regency Government's road map and long-term development program that prioritizes transparency and accountability. In 2018, the transformation was carried out. When villages in one area join and develop their best potential, it also leads economic growth to community independence faster. PKPM was born as an innovation to continue the previous program. Villages no longer run individually but are connected and move forward together in one area. PKPM, It's five years (2018-2023) partnership program between the community, local government, and PT Vale. PKPM is to increase production and competitiveness, to give added value and economical independence to the community in mining operation-affected areas. PKPM provides the community with stimulant funds to develop it superior region products. The scope of cooperation involves empowering communities and rural areas, implementing PPM and PKPM, enhancing government institutions' capacity in villages, strengthening the capacity of Inter-Village Cooperation Bodies, and improving Owned Enterprises in Village. In 2013 the company also allocated PPM costs of US5,571,359, an increase of 4.3% from 2022. The social programs we implement include education, health, real income levels, economic independence, socio-culture, social environment, community institutions, and infrastructure development. PPM integrates input from and is implemented through collaboration with

Row 8

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Financiamento de organizações de pesquisa

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 7

(11.20.1.3) Explique

The scope of work on the MoU (Memorandum of Understanding) with the University includes several items to determine the proper steps in the future. PT Vale is committed to completing its biodiversity management plan, covering the entire mining operation areas in the Sorowako Block. By the end of the reporting period, the management has been implemented 100%. The main stakeholders involved are Vale employees, specialists from research programs in conducting environmental studies and programs and the surrounding communities A joint study carried out with Hasanuddin University identified 43 protected species listed on the IUCN Red List in the Sorowako Block mining operation area. The study revealed that several species of flora and fauna are currently covered or threatened with extinction, highlighting the need for conservation efforts to maintain their sustainability. The list of protected species is based on the IUCN red list, and we are committed to implementing appropriate measures to protect and conserve these species. As part of PT Vale's commitment to biodiversity conservation, the Company established the Sawerigading Wallacea (Kehati) Biodiversity Park, serving as a flora and fauna conservation area, an educational center for biodiversity, a recreational space and a jogging track. The park was inaugurated in 2023.

Row 9

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Financiamento de organizações de pesquisa

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(11.20.1.3) Explique

The Propagar Network: “Development of propagation protocols and genomic characterization of endemic plant species from the Iron Quadrangle of Minas Gerais”, is a collaborative network set up and coordinated by Vale. Its technical staff includes fellows and researchers from USP, Unicamp, UFU, UFV, UFMG, the Rupestris Institute, UEFS and commercial partners. This project includes research to improve knowledge of the species through propagation processes, seed storage, living collections and reintroduction tests. The Propagar Network aims to develop innovative protocols for producing seedlings of endemic, rare and threatened plant species. In parallel, the genetic material collected is sent for molecular analysis to another partner, GENOMA A. To date, approximately 90 species have had their molecular analysis completed. Analyses have also been carried out to better understand the development of the species on different substrates. Population genetic diversity analyses are currently underway. The project runs from 2022 to 2027 at the APTA Regional Research and Development Unit in Piracicaba (São Paulo, Brazil). The results obtained will support restoration actions and the survival of the species in their natural habitats. The agreement reaffirms Vale's commitment to supporting national science through research grants and knowledge sharing. The Propagar Network aims to build technical-scientific knowledge, publish articles in high-impact journals and share propagation protocols for conservation bodies, research institutes, NGOs and seedling companies. Seedling production began in October 2022, with promising results as the plants acclimatize in the greenhouse. The international launch of the Propagator Network took place at Harvard University on March 24, 2023. In addition to carrying out research applied to the conservation of flora in the territories where Vale operates, the agreement also provides for research grants at different levels to make up for the shortage of specialized manpower in the area. As part of the project, protected areas throughout the state were explored, which led to the discovery of new populations of species of conservation interest. These populations are mapped, georeferenced and monitored to collect propagules and study genetic material.

Row 10

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Financiamento de organizações de pesquisa

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Projeto 2

☑ Projeto 3

☑ Projeto 4

☑ Projeto 5

☑ Projeto 6

(11.20.1.3) Explique

An agreement was signed with the Municipal Parks and Zoobotany Foundation (FPMZB) to deepen knowledge of the species, working on propagation processes, seed storage, living collections and substrate/reintroduction tests. The agreement with the FPMZB was signed at the end of 2022, so the actions are ongoing. The

scope of this agreement includes expanding the Herbarium, installing greenhouses, adapting the seed storage structure and maintaining a living collection of endemic species from the Iron Quadrangle region. The agreement, in addition to developing applied research on topics of great relevance to the conservation of flora in the territories where Vale operates, also provides for the award of research grants at different levels, in a field in which there is still a great shortage of skilled labor. Seeds that are not immediately used by one of the partners are sent to the FPMZBH for viability and germination tests. A Living Collection - Germplasm Bank of the most critical and rare species from the rupestrian environments of the state of Minas Gerais - is also being set up. Vale has also financed the refurbishment of the Belo Horizonte Botanical Garden Herbarium (BHZB - indexed to the network) for use in storing samples of these species, and plans are underway to refurbish the seed storage rooms. A pilot experiment was recently set up to reintroduce some of the threatened, rare and/or endemic species into environmental recovery areas to assess survival, planting techniques, monitoring and the logistics of future larger-scale work.

Row 11

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Participação em iniciativas governamentais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Todos os projetos de mineração divulgados

(11.20.1.3) Explique

Through a Technical Cooperation Agreement between Vale and Chico Mendes Institute for Biodiversity Conservation - ICMBio, the Inclusive Restoration project is being implemented. The partnership started in 2022 and will last until 2027. The main objective is to combine efforts with this public institution to structure the large-scale restoration process in Protected Areas, and the implementation of restoration demonstration areas with emphasis on institutional instruments and arrangements, mapping opportunities, fostering the production chain and knowledge management. Vale is responsible for supporting ICMBio in planning and structuring the process, as well as implementing inclusive restoration demonstration areas, with a territorial emphasis on up to 150 ha, including 50 ha in the Mata Escura REBio in the state of Minas Gerais (already included in the Forest Goal), and 100 ha in the Igarapé Gelado Environmental Protection Area in the state of Pará. In 2023, 21 people were trained in the broad theme of ecological restoration.

Row 12

(11.20.1.1) Atividades Sustentáveis

Selecione de:

☑ Participação em iniciativas governamentais

(11.20.1.2) ID do projeto de mineração

Selecione todos os aplicáveis

☑ Todos os projetos de mineração divulgados

(11.20.1.3) Explique

In 2023, Vale, together with the State Forestry Institute (IEF), the State Secretariat for the Environment and Sustainable Development (SEMAD) and the State Secretariat for the Civil House (SCC) signed a Technical Cooperation Agreement to develop the Environmental Regularization Program for small rural properties. This partnership will last until 2030. The partnership aims to implement restoration on small rural properties for environmental regularization with a territorial emphasis of up to 540 hectares. The Vale (together with the support of IEF/SEMAD) is responsible for drawing up and implementing the Environmental Regularization Program (PRA) on small rural properties located in the Cachoeira das Andorinhas Environmental Protection Area in the Minas Gerais state, in accordance with Federal Law No. 12.651/2012 and State Decree No. 48. 127/20210, as well as support in structuring payments for environmental services (PSA) related to the program; revitalization of two IEF nurseries (Conselheiro Lafaiete and Barbacena/MG) with a view to supporting the production of seedlings to serve the program; development of a nursery management system and monitoring of the restoration of implanted areas; carrying out training and environmental education to engage the communities involved. Since the agreement was signed by the end of 2023, no activities were carried out in this year.
[Adicionar linha]

C13. Informações adicionais e assinatura

(13.1) Indique se as informações ambientais incluídas na resposta ao CDP (não divulgadas nas 7.9.1/2/3, 8.9.1/2/3/4 e 9.3.2) foram verificadas e/ou comprovadas por um terceiro.

	Outras informações ambientais incluídas na resposta ao CDP foram verificadas e/ou comprovadas por um terceiro
	Selecione de: ☑ Sim

[Linha fixa]

(13.1.1) Quais pontos de dados na resposta ao CDP são verificados e/ou comprovados por um terceiro e quais normas foram usadas?

Row 1

(13.1.1.1) Problema ambiental para o qual os dados foram verificados e/ou comprovados

Selecione todos os aplicáveis

☑ Mudanças climáticas

(13.1.1.2) Módulo de divulgação e dados verificados e/ou comprovados

Desempenho ambiental - Mudanças climáticas

☑ Iniciativas/atividades para a redução das emissões

☑ Progresso em relação às metas

(13.1.1.3) Norma de verificação/comprovação

Normas gerais

☑ ISAE 3000

(13.1.1.4) Mais detalhes do processo de verificação/comprovação por terceiros

PwC "PricewaterhouseCoopers Auditores Independentes Ltda" has been engaged by Vale S.A. (Vale) to conduct and independent auditor's limited assurance report on the non-financial information included in the 2023 Integrated Report of Vale S.A. The limited assurance engagement also included the analysis of the compliance with the guidelines and criteria 1) of the Global Reporting Initiative (GRI-Standards); 2) the provisions established in the basis of preparation developed by the Company; 3) the principles for the Integrated Report, pursuant to Guidance CPC 09 – Integrated Report, related to the Basic Conceptual Framework for Integrated Report, prepared by the International Integrated Report Council (IIRC) applicable in the preparation of the information included in the 2023 Integrated Report of Vale for the year ended December 31, 2023. Please access pages 99 and 100, Vale 2023 Integrated Report for more information: https://vale.com/documents/44618/6969891/VALERelatoIntegrado2023-EN-120424-Final.pdf/a3cb49bc-6348-3103-7608-97042178cffb?version2.1&t1716383129212&downloadfalse

(13.1.1.5) Anexar evidência/relatório de verificação/comprovação (opcional)

VALERelatoIntegrado2023-EN-120424-Final.pdf

Row 2

(13.1.1.1) Problema ambiental para o qual os dados foram verificados e/ou comprovados

Selecione todos os aplicáveis

☑ Mudanças climáticas

(13.1.1.2) Módulo de divulgação e dados verificados e/ou comprovados

Desempenho ambiental - Mudanças climáticas

☑ Pegada do produto

(13.1.1.3) Norma de verificação/comprovação

Normas gerais

☑ ISAE 3000

(13.1.1.4) Mais detalhes do processo de verificação/comprovação por terceiros

PwC "PricewaterhouseCoopers Auditores Independentes Ltda" has been engaged by Vale S.A. (Vale) to conduct and independent auditor's limited assurance report on the non-financial information included in the 2023 Integrated Report of Vale S.A. The limited assurance engagement also included the analysis of the compliance with the guidelines and criteria 1) of the Global Reporting Initiative (GRI-Standards); 2) the provisions established in the basis of preparation developed by the Company; 3) the principles for the Integrated Report, pursuant to Guidance CPC 09 – Integrated Report, related to the Basic Conceptual Framework for Integrated Report, prepared by the International Integrated Report Council (IIRC) applicable in the preparation of the information included in the 2023 Integrated Report of Vale for the year ended December 31, 2023. Please access pages 99 and 100, Vale 2023 Integrated Report for more information: https://vale.com/documents/44618/6969891/VALERelatoIntegrado2023-EN-120424-Final.pdf/a3cb49bc-6348-3103-7608-97042178cffb?version2.1&t1716383129212&downloadfalse

(13.1.1.5) Anexar evidência/relatório de verificação/comprovação (opcional)

VALERelatoIntegrado2023-EN-120424-Final.pdf

Row 3

(13.1.1.1) Problema ambiental para o qual os dados foram verificados e/ou comprovados

Selecione todos os aplicáveis

☑ Água

(13.1.1.2) Módulo de divulgação e dados verificados e/ou comprovados

Desempenho ambiental - Método de consolidação

☑ Outro ponto de dados no módulo 6, especifique **:**Progress against targets

(13.1.1.3) Norma de verificação/comprovação

Normas gerais

☑ ISAE 3000

(13.1.1.4) Mais detalhes do processo de verificação/comprovação por terceiros

PwC "PricewaterhouseCoopers Auditores Independentes Ltda" has been engaged by Vale S.A. (Vale) to conduct and independent auditor's limited assurance report on the non-financial information included in the 2023 Integrated Report of Vale S.A. The limited assurance engagement also included the analysis of the compliance with the guidelines and criteria 1) of the Global Reporting Initiative (GRI-Standards); 2) the provisions established in the basis of preparation developed by the Company; 3) the principles for the Integrated Report, pursuant to Guidance CPC 09 – Integrated Report, related to the Basic Conceptual Framework for Integrated Report, prepared by the International Integrated Report Council (IIRC) applicable in the preparation of the information included in the 2023 Integrated Report of Vale for the year ended December 31, 2023. Please access pages 99 and 100, Vale 2023 Integrated Report for more information: https://vale.com/documents/44618/6969891/VALERelatoIntegrado2023-EN-120424-Final.pdf/a3cb49bc-6348-3103-7608-97042178cffb?version2.1&t1716383129212&downloadfalse

(13.1.1.5) Anexar evidência/relatório de verificação/comprovação (opcional)

VALERelatoIntegrado2023-EN-120424-Final.pdf
[Adicionar linha]

(13.2) Use este campo para indicar qualquer informação ou contexto adicional que considere relevante para a resposta da organização. Observe que este campo é opcional e não é pontuado.

	Informações adicionais
	N/A

[Linha fixa]

(13.3) Dê as seguintes informações sobre a pessoa que assinou (aprovou) a resposta ao CDP.

(13.3.1) Cargo

CEO

(13.3.2) Categoria de cargo correspondente

Selecione de:
☑ Diretor Executivo (CEO)
[Linha fixa]

(13.4) Indique seu consentimento para que o CDP compartilhe os detalhes de contato com o Pacific Institute para respaldar o conteúdo do site Water Action Hub.

Selecione de:
☑ Sim, o CDP poderá compartilhar detalhes de contato do nosso Disclosure Submission Lead com o Pacific Institute