

Rio de Janeiro, April 23<sup>rd</sup>, 2025

To: **Earthworks**  
Attn: Jan Morrill  
Cc.: Aaron Mintzes

**Subject:** Vale's response to Earthworks' forthcoming report

Dear Ms. Jan Morrill,

We appreciate the opportunity to receive in advance and engage with you ahead of the publication of your report. This is an important space for dialogue, and we value the chance to contribute relevant information that may support a more accurate perspective.

We recognize the important role played by civil society organizations, such as Earthworks, in monitoring the conduct and performance of industry and contributing to the broader debate around corporate responsibility. Critical voices are essential to building more transparent and inclusive practices, and we remain open to engagement—even when perspectives differ.

We understand that the report raises serious concerns about our operations. Many of the issues mentioned deserve thoughtful reflection and some of the conclusions presented do not reflect reality and the full context, including the complexity of the challenges involved and the substantial progress Vale has made in recent years on the matters described therein.

Below, given the limited time available for review and to provide more specific contributions, we present our immediate general comments on the four main conclusions outlined in your letter, which are, in our view, misconceived. Nonetheless, we reiterate our interest in providing further clarifications and respond to the report point by point, should that be useful.

We welcome the opportunity to contribute transparent and factual information. While we recognize that challenges remain, we are firmly committed to continuous improvement, grounded in dialogue, transparency, and strong governance.

Thank you for your time and consideration.

Sincerely,

**Vale S.A.**

***“There is a huge disparity between the commitments made and disclosed by Vale to its shareholders and to society as a whole, and its corporate practices. These commitments, made public in reports widely disseminated by the company, cover sensitive issues, with a focus on international best practices associated with ESG (Social and Environmental Governance). Sustainable mining, low carbon solutions, human rights, ethics, and risk management are just some of the issues where Vale strives to convey an image of trust and corporate, social and environmental responsibility. However, in practice, the reality is quite different from the scene Vale tries to present.”***

We reaffirm Vale’s commitment to respecting human rights and observing sustainability goals as part of our business model to ensure a lasting and positive economic, social, and environmental legacy. Our strategic pillars reflect this commitment, serving as a framework to integrate sustainability into our governance, corporate strategy, and daily operations.

This commitment is exercised and demonstrated through transparency and accountability, with regular disclosure of impacts, risks, opportunities, and progress. We recognize the challenge of mining activities—dependent on natural resources, subject to rigid local conditions, and operating in complex socio–environmental contexts— and for this reason, our company must address a broad set of environmental, social, and governance (ESG) matters that go beyond operational performance.

Strategic guidelines are defined by the Board of Directors and monitored through reports from Executive Vice Presidents and oversight by Advisory Committees, including the Sustainability Committee. Since 2021, we have maintained a dedicated Executive Vice Presidency for Sustainability, responsible for implementing ESG policies, managing related risks and opportunities, and assessing investment proposals aligned with our sustainability agenda.

Our strategy is grounded in materiality and adopts an integrated approach to sustainability and value creation. [Our Sustainability Policy](#) aims to identify and adopt preventive and mitigating tools to avoid negative impacts from our activities, while enhancing positive contributions across all territories where we operate. Since publishing our first Sustainability Report in 2007, we have continuously evolved from broad commitments to delivering measurable outcomes.

Our disclosures are aligned with global frameworks such as TCFD (climate change), TNFD (nature and biodiversity), SASB (Sustainability Accounting Standards Board), and mining-specific standards (ICMM). Our Integrated Report is subject to independent third-party assurance annually and is accompanied by an ESG Databook, developed in response to data-centric demand. In 2024, [we announced the voluntary adoption of the International Sustainability Standards Board \(ISSB\) framework](#) for preparing and disclosing a sustainability-related financial report, making us one of only two Brazilian companies to adopt this standard in its first year. Our first ISSB-compliant report is expected in 2025. These initiatives reflect our commitment to transparency and alignment with global best practices.

Our long-term sustainability targets encompass a broad range of areas, notably climate change, water, energy, and forests. These goals are associated with reducing interference in ecosystem services that are important for our operations and the maintenance of life. We report on them publicly and transparently. Highlights as of 2024 include:

- Scope 1 and 2 GHG emissions reduced by 26.9% from the 2017 baseline, totaling 7.7 MtCO<sub>2</sub>e (toward the 33% reduction target by 2030);
- Scope 3 emissions reduced by 13.2% relative to 2018 (toward the 15% reduction target by 2035);
- 84.3% of global electricity consumption from renewable sources (100% in Brazil), on track to reach 100% globally by 2030;
- 218,536 hectares of habitat protected or restored since 2020, progressing toward the goal of restore and protect 500,000 hectares outside company properties by 2030;
- Particulate matter emissions reduced by 28% compared to 2018;
- Sulfur oxide and nitrogen oxide emissions reduced by 39% and 72%, respectively, compared to 2018;
- 31% reduction in specific new water use in operations compared to 2017.

We continue to work diligently on dam management and safety. Last year, we decharacterized four more upstream structures, bringing the total number of upstream dams in Brazil that have been decommissioned since 2019 to 57%. We also improved the safety categories of five dams, putting us on track to remove the only dam still classified as emergency level 3 in 2025.

We continue to strengthen our social performance, continuously evolving the mitigation tools of the negative impacts of our operations in the territories where we operate and fostering constructive, respectful, and long-term relationships with communities throughout the lifecycle of our projects, as well as developing initiatives with the aim of bringing positive legacies to those communities. To achieve this, we manage risks and impacts, maintain open dialogue, and promote meaningful engagement with communities in decision-making processes. This approach is applied in all our operations, in Brazil and globally.

Community engagement is supported by structured relationship plans. In 2024, we maintained direct relationships with 1,214 communities across several countries and implemented 368 engagement plans, 351 of which were in Brazil. Among the 169 communities identified as high-priority for engagement in Brazil, 93.5% were already covered by engagement plans. Our target is to reach full coverage by 2026. For more information on our approach to local communities, please click [here](#).

We also advanced our regional action model, which promotes coordination across different areas of the company to manage risks, support local development, and foster transparent and trustworthy relationships. Fourteen regional action plans are currently active in Brazil. Additionally, we conducted our second nationwide Community Perception Survey, including regions in Minas Gerais. The survey provided important insights into levels of trust and community expectations. While communities acknowledged benefits such as job creation and local development—especially in Maranhão and Pará—findings also highlighted opportunities to improve trust and communication.

Our human rights approach is embedded across multiple business areas, including risk management, procurement, security, human resources, and community engagement. From 2019 to 2023, we completed the first cycle of independent Human Rights Due Diligence across all operations in Brazil and international sites.

Our ESG commitments are directly linked to performance and accountability mechanisms. A significant portion of executive compensation is tied to non-financial targets, including sustainability, health and safety, climate change, and social aspects. ESG metrics represent 25% of long-term incentive plans. In addition, the areas of Health, Safety, Geotechnics, and Reparation and Compliance have not had financial and production results on their goals dashboard, highlighting the importance attached to Risk Management. This clear link between ESG and compensation underscores our dedication to creating sustainable value and promoting ESG practices throughout the organization. Further information on executive compensation can be found at [Vale's Proxy Statement](#).

We also publish thematic reports to enhance transparency, such as our [Tax Transparency Report](#), [Emissions Report \(Scopes 1, 2, and 3\)](#), and [Ethics & Compliance Report](#). In addition, [our public ESG Portal](#) offers comprehensive and regularly updated information on critical topics such as dam safety, biodiversity, and climate action. Since 2019, we have addressed 57 of the 63 ESG-related gaps identified, and have observed consistent improvement in external ratings. Further information can be found in [Vale's Integrated Report](#) and in our [document library section](#).

We recognize that sustainability is a continuous journey—one that requires constant learning, adaptation, and accountability. While challenges remain, we believe the efforts outlined here demonstrate the concrete steps we are taking to align our actions with our commitments. We remain focused on advancing this agenda with transparency, consistency, and openness to constructive dialogue with all stakeholders.

***“In addition to the direct consequences of the two dam collapses in Mariana and Brumadinho, whose residents are still fighting in the courts for fair reparations, the report identifies various violations in other locations in Minas Gerais, from human rights, to property rights, to access to water, to worker rights, to fiscal malfeasance, among others. ”***

We acknowledge the profound impacts caused by the dam collapses in Mariana and Brumadinho — tragedies that have deeply shaped Vale’s approach to risk management, human rights, and corporate accountability.

We recognize the concerns raised and the ongoing demands for justice and reparation from affected individuals and communities. In response to these challenges, Vale has committed to a long-term process of efficient and comprehensive reparation. This includes social, environmental, and economic recovery at both collective and individual levels.

- **Brumadinho reparation:**

We will never forget Brumadinho. We reaffirm our respect for the victims and their families, as well as our commitment to the integral reparation of Brumadinho and the affected communities, and to non-repetition.

Reparation efforts have been managed in three phases. The first phase involved multidisciplinary emergency actions, which guided the company from the very first day of the tragedy. Crisis committees were established, public assistance points were set up, and a sensitive dialogue began with various public and private stakeholders, including NGOs, government authorities and judicial bodies. During this phase, our focus was on saving lives, assisting the victims and their families, providing proper and efficient compensation and addressing the immediate needs of the affected population to ensure they had the minimum necessary support. For details on these emergency actions, please read the Routine Reparation reports available [here](#).

Phase 2 began in 2019 with the establishment of the Special Department for Reparation and Regional Development, with a direct report to Vale’s CEO. This department was created to focus on socioeconomic, social and environmental reparation, strengthen community relations and develop a comprehensive reparation agreement with the competent public authorities.

In February 2021, Vale signed a comprehensive reparation agreement with the state government of Minas Gerais, the state and federal public prosecutors’ offices and the Minas Gerais State Public Defender’s Office. The agreement totals R\$ 37.7 billion for the complete reparation to be concluded within 10 years, and includes R\$ 6.3 billion disbursed until February 2021, R\$ 11.4 billion in obligations to implementing projects (“To-do”) and R\$ 19.9 billion to pay for the public authorities.

The reparation work within the agreement covers two categories of obligations: socio-environmental obligations, and socio-economic obligations:

- Socio-environmental obligations aim to restore the environment and compensate (financially or otherwise) for impacts, damages, or losses caused by the dam collapse. Compensation for known environmental damages is R\$ 1.55 billion, and environmental recovery is estimated, but not capped, at R\$ 5.0 billion.
- Other compensatory measures, amounting to R\$ 303 million, include agreements signed with the Civil Defense program, the fire department, among others.
- Before socio-economic initiatives and projects are carried out for Brumadinho and the other 25 municipalities affected in the Paraopeba basin, consultations are held with affected individuals to prioritize investments. Projects for the Paraopeba basin total R\$ 2.5 billion (+ payment obligations) and for Brumadinho, R\$ 1.5 billion.

By December 2024, Vale had completed 75% of the economic progress of the agreement (39% of the "To do" reparation works and 91% of the "To pay" reparation works) according to the schedule. It is estimated that 100% of the payment obligations will be fulfilled by

2026, while the "To do" obligations are expected to be completed by 2031, fulfilling 100% of the Comprehensive Reparation Agreement.

- *Individual compensation progress:*

Individual compensation was not covered by the values of the Comprehensive Reparation Agreement. For individual compensation, Vale formalized an agreement with the Public Defender's Office of the State of Minas Gerais in April 2019, allowing those affected by the Brumadinho dam collapse to enter into an individual or family group extrajudicial agreement for compensation of material, economic, and moral damages according to a damage matrix established with the Public Defenders, on parameters more flexible and on higher amounts than usual Brazilian case law. This agreement, ratified by the other competent authorities via the Comprehensive Reparation Agreement, established the basis for a wide range of compensation payments, defined according to best practices and the jurisprudence of Brazilian courts, following United Nations rules and principles. 92% of extrajudicial compensation cases have been concluded. Vale has paid R\$ 3.8 billion in compensation to approximately 17,000 people. For more information on the indemnity program, please visit: [Indemnity - Vale](#).

- *Environmental reparation progress:*

From an environmental perspective, by 2024, we had successfully removed 88% of the 12.4 million m<sup>3</sup> of tailings that had been deposited in the Ferro-Carvão stream and the Paraopeba River. These tailings are being relocated to the deactivated Feijão Mine pit.

Restoring biodiversity is a cornerstone of our commitment to social and environmental recovery in the areas impacted by the dam collapse. To date, we have completed forest restoration across 159 hectares, planting over 200,000 trees. In 2024 alone, we advanced the recovery of 70 hectares, including remnant Atlantic Forest areas around the affected region and the first sections of the tailings-covered area authorized for restoration. These efforts aim to reestablish native vegetation cover, which is critical for soil stability and creating habitats that support local biodiversity.

Biodiversity monitoring has involved more than 270 professionals in tracking animal species in the Ferro-Carvão Stream Basin and along the Paraopeba River. The monitoring results indicate no obvious ongoing damage to the aquatic and terrestrial biota in the Paraopeba River. Furthermore, these efforts have led to the recording of endangered species, including 19 species of plants and 13 species of terrestrial animals, which are protected at the state, national, and/or international levels. To assess the water quality of the Paraopeba River, in 2024, Vale has collected approximately 7.5 million analysis results from 95,000 water and sediment samples at 95 control points along the river. The data shows a progressive improvement in water quality, with results equaling or exceeding the values recorded before the dam collapse, particularly during the dry season.

All social and environmental reparation actions are monitored and supervised by the competent authorities, which are parties to the Agreement. Technical support for the social and environmental audits is provided by the independent audit firm Aecom. For more information visit our [Integrated Report](#).

- *Socioeconomic reparation progress:*

To support the region's socioeconomic development, several initiatives were created to improve quality of life, boost local tourism, and support residents' livelihoods. These initiatives are based on active community engagement to meet their needs. They include the construction of a Community Market with a bakery, community kitchen, confectionery, and pizzeria offering training workshops; a Cultural Center; and an entrepreneurship and ecotourism program. A total of 434 local associations and small businesses are being supported, impacting over 16,000 people.

Social and infrastructure projects are also planned with active community consultation and in partnership with the public sector, focusing on improving quality of life and collective well-being, with an emphasis on creating local jobs. Initiatives include building daycare centers, public squares, sidewalks, and investing in medical equipment.

In partnership with the community, we have implemented projects to revitalize and stimulate the economy of the affected region. These include infrastructure improvements in the village of Córrego do Feijão and the Brumadinho Tourism Program, including an updated Céu de Montanhas catalog. This catalog showcases 39 local businesses offering over 60 products and 40 unique experiences in areas such as gastronomy, textile design, handicrafts, ceramics and music, fostering rural and community-based tourism. Additionally, more than 1,800 hours of training and technical assistance were provided. We also launched a virtual tourist map and conducted the second Brumadinho Tourism Census, identifying 240 tourist enterprises.

The infrastructure improvements in the village of Córrego do Feijão aim to repair the damage and support families in the area most affected by the dam failure, enabling them to rebuild their lives within the community. These efforts are helping reestablish community ties and strengthen the sense of belonging that has developed over time. In addition, this work contributes to the social and economic development of the community through comprehensive urban upgrades, income generation for residents and enhanced local tourism potential.

In 2024, for example, through the strengthening the Córrego do Feijão Network Economy project, we provided over 4,000 hours of training and advisory services to beneficiaries. The initiative reached 24 collective businesses and 141 individuals (65% of whom were women), aiming to strengthen the local economy and keep residents' income circulating within the region. As a result, these enterprises and collectives saw a 29% rise in revenue compared to 2023 and a 77% increase in their maturity level – an indicator that evaluates production, management/finance, commercialization, marketing and innovation.

- *Health and psychosocial support:*

Health initiatives were extended to all residents of Brumadinho following the dam collapse. In 2019, Vale signed a cooperation agreement with the city hall to allocate resources for the expansion of health and psychosocial care in the municipality. The Health Cycle Program was also implemented to strengthen the Basic Health Care Network in Brumadinho and other affected municipalities. As part of these efforts, more than 2,500 health professionals were trained and over 5,000 pieces of equipment were delivered to 143 Basic Health Care Units.

Under the Comprehensive Judicial Reparation Agreement, additional projects have been developed to enhance health services, including the acquisition of medical and hospital equipment, funding of services, and the renovation or construction of health facilities.

In addition to these initiatives, the Human Health and Ecological Risk Assessment Study (ERSHRE) is currently underway. This study was requested by public health and environmental authorities in Minas Gerais, in partnership with the Public Prosecutor's Office and other institutions involved in the agreement. While the study is funded by Vale, it is being carried out by independent consulting firms, with oversight from the Agreement's stakeholders and support from an independent auditor. The purpose of the ERSHRE is to identify potential risks to human health and the environment associated with the presence of tailings in the soil and waters of the Paraopeba River, and to help define integrated monitoring and remediation strategies for the impacted areas. For further information, please click [here](#).

For the victims' families in particular, emotional support was provided through the Family Reference Program, launched in 2019 and operating for over four years. The program concluded with 112,000 consultations for 3,500 people, including 75,000 consultations for 600 families in Brumadinho. Led by specialized professionals, the initiative focused on comprehensive care, offering psychosocial support and proactive follow-up. For further information, please visit <https://vale.com/social-reparation>.

To assess the water quality of the Paraopeba River, in 2024, Vale has collected approximately 7.5 million analysis results from 95,000 water and sediment samples at 95 control points along the river. The data shows a progressive improvement in water quality, with results equaling or exceeding the values recorded before the dam collapse, particularly during the dry season.

- *Community members' participation in decision-making for reparation actions:*

The Comprehensive Reparation Agreement was negotiated and written with the active participation of the governmental authorities that have constitutional mandate to represent the collective and diffuse rights and interests involved and consultation of other stakeholders. The Agreement also establishes transparency commitments by all parties, including the communities' access to information and direct participation and management of specific reparation initiatives, for example, in the allocation of resources and definition of the reparation projects for the community (Annex I.1), overviewed by the Justice Institutions and independent external audit, without any interference from Vale. Moreover, pursuant to the Agreement's terms and conditions, the affected communities have access to independent technical consultancy to assist and guide them in the reparation initiatives.

The initiatives in the Comprehensive Reparation Agreement are planned with active consultation from community members, municipal governments, the state government of Minas Gerais, regulatory and oversight agencies, the judiciary, external audits and independent technical consultancy support. All parties contribute according to the respective initiative for the joint development of solutions. Community members include indigenous peoples and traditional communities, who are consulted according to the Free, Prior, and Informed Consent (FPIC) process, in line with ILO Convention 169 and other global references, such as the UN principles on business and human rights.

The agreement was signed and approved before the State Court of Minas Gerais, on a decision that has become final (*res judicata*), certifying its legality and that it was signed with legitimate parties, reflecting valid and adequate terms. The reparation measures were considered adequate by the competent authorities and the Judiciary and, effectively, the consensual solution in place is significantly higher than those usually applied by Brazilian Courts in similar cases.

- *Accountability and Independent Audit:*

Our commitment to full reparation for the Brumadinho disaster includes transparency in managing the entire process and maintaining constant dialog and communication at each stage. Every six months, we release a report (available [here](#)) on ongoing initiatives, including funds invested, major projects completed, and other details.

Our *Vale+ Comunidade* publication provides monthly updates on key initiatives, presented separately for Brumadinho and the broader Paraopeba River Basin and its 25 municipalities (excluding Brumadinho).

Additionally, the [Pro-Brumadinho Committee portal](#), coordinated by the compliance enforcement agencies, provides information on impacts on affected communities and the environment and details on ongoing initiatives and projects under the Integral Reparation Agreement. This committee collaborates with the Getulio Vargas

Foundation (FGV), engaged as independent auditors, to support decision-making on economic reparation projects. Learn more [here](#).

Besides Vale's regular listening channels (<https://vale.com/contact-us>), we also have a specific Reparation support line (0800-031-0831) for any stakeholders that would like to contact Vale regarding the reparation or indemnification process.

Phase 3 of our reparation efforts has been ongoing since 2022, when we created our Reparation Department, part of the Sustainability Vice Presidency. Our primary goal is to ensure comprehensive reparation in Brumadinho and the Paraopeba Basin. We are continuously evolving our reparation structure to meet our goals in terms of time and quality. We strive to maintain transparent communication and foster strong relationships with all stakeholders, ensuring a position of openness and dialogue. For more information on the reparation work, visit [Vale's Integrated Report](#) and <https://vale.com/reparation>.

- **Mariana reparation:**

Regarding Mariana's reparation, Vale, as a Samarco shareholder, reaffirms its commitment to a comprehensive and effective reparation of all damages caused by the Fundão dam collapse.

The comprehensive Mariana Reparation Agreement, which ensures the full and definitive conclusion of the reparation and compensation process for the collapse of Samarco's Fundão Dam in Mariana, Minas Gerais, was signed on October 24<sup>th</sup>, 2024, and ratified by the Federal Supreme Court of Brazil on November 6, 2024. In addition to the mining companies, the agreement was signed by the federal government, the state governments of Minas Gerais and Espírito Santo, federal and state public prosecutors' offices, federal and state public defenders' offices, as well as several other public bodies and authorities.

The engagement of the Brazilian public authorities ensured the legitimacy of the agreement, which was grounded in social, environmental and technical criteria. This important agreement underscores our commitment to a better future for people, communities and the environment.

The definitive agreement provides for an estimated R\$ 170 billion, to cover both past and future obligations to assist people and communities and restore the environment impacted by the dam collapse. It establishes three main areas of obligation:

- R\$ 100 billion – Payments to be made over 20 years to the federal government, the state government of Minas Gerais and Espírito Santo, and municipal governments, and to be used by justice institutions to finance compensatory programs and actions linked to public policies and needs.
- R\$ 32 billion – Samarco's obligations, including initiatives for individual compensation, resettlement and environmental remediation.
- R\$ 38 billion – Reparation and compensation measured by the Renova, which was paid from the date of the dam collapse to the date the agreement was signed.

- **Compensation:**

The definitive agreement ensures the final resolution of individual indemnities and payments under the Mediated Compensation Program, Emergency Financial Aid and Simplified Compensation System.

The agreement also established the possibility for family farmers and professional fishermen who meet the specified criteria to receive lump-sum compensation payments upon signing the respective discharge agreement.

The Definitive Compensation Program – the final opportunity for definitive indemnification for those not yet covered by previous initiatives – will be implemented and operated by Samarco. This program provides for a lump-sum payment of R\$ 35,000 per eligible person, contingent upon meeting the agreement's criteria and signing an individual discharge.



As of December 2024, more than 448,000 people in the Doce River Basin had been directly indemnified or received financial assistance, reflecting approximately R\$ 18.7 billion in total compensation and emergency financial aid paid by the Renova Foundation.

- **Resettlement:**

The definitive agreement provides for the completion of resettlement in the districts of Novo Bento Rodrigues and Paracatu, with Samarco coordinating the resolution of the remaining cases.

As of December 2024, 90% of the resettlement cases had been completed. The resettlement process involves the active participation of the communities, supported by technical advice, and aims to meet standards of excellence in community resettlement. The agreement stipulates that these structures will be maintained for a period of five years from the handing over of the keys, upon signing the discharge agreement, or until the definitive transfer of ownership through the registration of the property into the name of the household.

- **Environmental Restoration:**

The environmental recovery actions still pending in the impacted areas of the Doce River in Minas Gerais and Espírito Santo, as well as on the northern coast of Espírito Santo within the Doce River Basin, will be completed directly by Samarco in an efficient and definitive manner, within the shortest technically feasible timeframe. The agreement includes specific milestones and objectives for each of these actions. Key initiatives include the reforestation of 50,000 hectares, completion of the recovery of 5,000 springs, and the restoration of riverbanks and the aquatic environment, in the locations specified in the agreement.

In addition to the measures to be carried out directly by Samarco, the agreement establishes robust initiatives to improve the environmental quality of the Doce River Basin. These initiatives will be implemented by the public authorities with financial resources from the Agreement, in alignment with public policies, such as basic sanitation for the affected municipalities, as well as other measures aimed at enhancing the water quality of the Doce River.

In December 2024, the Brazilian environmental protection agency, IBAMA, the Chico Mendes Institute for Biodiversity Conservation (ICMBio), the Brazilian Biodiversity Fund (FUNBIO) and Samarco signed instruments to enable the transfer of US\$ 46.4 million as part of the projects from the Agreement. These funds will be allocated to the preservation of terrestrial and marine fauna, primarily in Wild Animal Screening Centers and Conservation Areas, as part of the reparations for the Doce River Basin.

At the Risoleta Neves Hydroelectric Plant (also known as the Candonga Hydroelectric Plant), Samarco will conduct studies to assess the economic, social and environmental feasibility of removing further up to 9.15 million m<sup>3</sup> of sediment. These studies will be submitted to Ibama as part of the competent environmental licensing process.

Samarco will also undertake studies to identify potential contamination risks on the areas and substances specified in the Agreement. Samarco will also continue the monitoring of environmental quality of the Doce river to collect data for the benefit of the public authorities, which will consider it on the development of their projects under the Agreement.

As of December 2024, US\$ 8.4 billion had been disbursed for reparation and compensation actions related to the Mariana disaster, including US\$ 7.5 billion for obligations to act and US\$ 853.4 million for obligations to pay, as renegotiated.

- **Expected cash disbursement:**

As a Samarco shareholder, Vale has committed to covering up to 50% of any amounts the company may fail to finance as the primary debtor. As of December 31, 2024, Vale's provision for these obligations stood at R\$ 19.4 billion, including estimates of Samarco's contributions. The estimated cash disbursement schedule is presented below.

Expected cash disbursement (BRL billion)

Indicator/Country	Total	2024	2025	2026	2027	2028	2029	2030	'31-43 average	
Liabilities to be paid	100	5.0	6.0	7.0	5.0	5.0	5.1	5.5	4.7	Payments over 20 years to fund compensatory programs linked to public policies
Obligations to perform	32	2.0	17.8	4.6	1.5	0.9	0.3	0.3	0.4	To be carried out by Samarco, including compensation, resettlement, and environmental recovery.
Already disbursed	38	-	-	-	-	-	-	-	-	
<b>Total (BRL billion)</b>	<b>170</b>	<b>7.0</b>	<b>23.8</b>	<b>11.6</b>	<b>6.5</b>	<b>5.9</b>	<b>5.4</b>	<b>5.8</b>	<b>5.1</b>	
Vale's contribution (BRL billion)		3.1	11.5	5.8	3.2	2.2	1.8	1.4	-	Gradual reduction over the years, considering that Samarco will fully finance the reparations after 2031, following the end of the ramp-up phase of operations.
Vale's contribution (USD billion)		0.5	1.9	0.9	0.5	0.4	0.3	0.2	-	

USD 4.7 billion provisioned, including USD 1.0 billion added in 3Q24

For further information on Mariana reparation, please see: <https://www.samarco.com/new-agreement/?lang=en>.

- Grievance mechanisms:**

To support stakeholder engagement and transparency, Vale has implemented a global Listening and Response Mechanism aligned with the UN Guiding Principles on Business and Human Rights. In 2024, 9,313 entries were received — 3,995 of which were complaints. Of these, 99% were acknowledged and 82.2% resolved, with an average resolution time of 31 days.

Vale also maintains a Whistleblower Channel, operated by an independent firm, and a Respect Channel for employees and contractors in Brazil and Canada to report harassment or discrimination. We do not tolerate retaliation against whistleblowers. Confirmed misconduct is addressed according to our [Misconduct Management Policy](#). It is important to note that misconduct can also be identified by leaders on a day-to-day basis, through audit processes, by regulatory bodies or through other means. Further details are available in our [Ethics & Compliance Program's Annual Report](#) and on our [Ethics and Compliance page](#).

As mentioned above, in addition to Vale's general communication channels, we also provide a dedicated toll-free Reparation Support Line (0800-031-0831), specifically for individuals and organizations wishing to seek information, raise concerns, or discuss any aspect of the reparation or indemnification process.

We acknowledge that integral reparation, risk mitigation, and human rights due diligence are long-term commitments — ones that demand transparency, consistency, and collaboration. The actions outlined above reflect Vale's evolving approach to honoring these responsibilities and rebuilding trust.

***“Contrary to its claim that it is “learning from its mistakes,” the company continues to haunt the population with its dams: through forced evacuations, dust pollution, and health impacts.”***

We recognize that concerns related to dam safety, air quality, and community health deserve serious and ongoing attention—especially in a region that continues to live with the legacy of past tragedies. The dam collapses in Mariana and Brumadinho marked a turning point in Vale's history, reinforcing the need for transparency, responsibility, and cultural transformation.

Learning from these events is not just a statement but a continuous and measurable commitment. We have invested in structural risk reduction, advanced monitoring technologies, emergency preparedness, and innovative environmental management practices. These efforts are aimed not only at preventing future disasters but also at minimizing the day-to-day impacts on communities near our operations.

Below, we present concrete actions undertaken to improve dam safety, reduce dust and emissions, and support local health systems—reflecting the progress and challenges of an ongoing journey guided by dialogue, accountability, and non-repetition.

- **Emergency evacuations and involuntary resettlements:**

In line with Brazilian legislation and the guidelines established by the National Mining Agency (ANM), preventive evacuations are required for communities located downstream of dams classified at emergency levels 2 and 3 — even when there is no rupture, but due to the potential risk. These are mandatory actions under the law, coordinated by Civil Defense authorities, to protect people living in self-rescue zones (ZAS), as defined by the Emergency Action Plans for Mining Dams (PAEBM) and ANM Resolution No. 95/2022.

These emergency evacuations included actions in Barão de Cocais, Nova Lima, and Itabirito, as well as preventive measures in Ouro Preto, with the last evacuation in 2022 (Ouro Preto).

In December 2022, the public civil action related to the evacuation of Nova Lima (B3/B4 dam) was settled, and a new agreement was signed providing for the compensation and full reparation of the impacts suffered by the affected population and the Municipality of Macacos, in the estimated amount of R\$ 500 million. In August 2023, the public civil action concerning the evacuation of Barão de Cocais (Sul Superior dam) was settled following the execution of a settlement agreement for the compensation and comprehensive remediation of the impacts experienced by the affected population and the Municipality of Barão de Cocais. The settlement amount is estimated at R\$ 528 million. Additionally, this agreement resulted in the closure of a civil investigation initiated by public prosecutors, which alleged potential violations or threats to individual and collective human rights in our interactions with the communities and individuals affected by the evacuation prompted by the elevated emergency level of the Sul Superior dam.

In November 2024, an agreement was reached with the Justice Institutions and municipalities involved, in the amount of R\$ 120 million regarding the removals that occurred in Itabirito.

Compensation and development plans were established in collaboration with residents and public authorities. Further information is available on [Vale's website](#).

It is important to clarify that these emergency evacuations are fundamentally different from the involuntary resettlements required to enable the decharacterization of upstream dams—now a legal obligation in Brazil. While emergency evacuations focus on immediate safety, the decharacterization-related resettlements follow a structured and participatory process. These planned resettlements are conducted through engagement and dialogue with the families involved, ensuring that all conditions, including compensation, housing solutions, and support measures, are agreed upon collaboratively with residents and public authorities before the relocation takes place. For more information about Vale's approach to involuntary resettlement, please visit <https://vale.com/esg/involuntary-resettlement>.

- **Decharacterization:**

One of our key initiatives in dam safety and management is the decharacterization of all upstream structures in Brazil. Since 2019, Vale has successfully reduced its portfolio of upstream dams in Brazil by 57%, [eliminating 17 structures](#). The 13 remaining upstream structures have publicly disclosed schedules and project stages, with a target to eliminate 90% of them by 2029 and the three most complex structures by 2035.

The decharacterization process is crucial for the long-term risk reduction of upstream dams. However, the necessary construction work can temporarily impact the geotechnical stability of these structures, especially in early stages.

While we work on decommissioning these structures, Vale has completed the construction of containment structures—known as back-up dams—downstream of the most critical facilities. These are designed to retain 100% of tailings volume in the event of an extreme hypothetical rupture, preventing impacts on communities.

To mitigate risks to life, construction works on these critical dams, classified at emergency level 3, are carried out using remotely operated equipment, with the project ensuring appropriate levels of redundancy.

In 2024, [we completed the decharacterization of the B3/B4 dam in Nova Lima \(MG\)](#), previously classified at the highest emergency level. This milestone was achieved using unmanned equipment operated from a control center 15 kilometers away. After decharacterization, the ECJ (back-up dam) built for safety during the process began to be removed, with all materials repurposed and local impacts mitigated. For further information on the De-characterization Program, please visit [Vale's website](#).

- **Dams at emergency level:**

In 2024, we reached an important milestone with the [reduction of the Sul Superior dam's emergency level from 3 to 2](#). This was made possible through new geotechnical studies, expanded monitoring systems, and advanced analysis that improved our understanding of the structure's stability.

Over the last two years, we removed two dams from emergency level 3. Our goal is to have zero dams at this level by the end of 2025; currently, only one structure remains in this category. Since 2020, we have reduced the number of dams at any emergency level in Brazil by 60%—from 35 to 14. We continue to enhance safety across these remaining structures through monitoring, construction works, and decharacterization. For further information on Dam Management and Monitoring, please visit [Vale's website](#).

- **Mining dam emergency action plans:**

One of our obligations is to carry out preparation and awareness-raising to promote a culture of harm prevention, especially among children and young people living in municipalities located in self-evacuation zones. These are areas with the greatest potential for impact in the event of a structural failure, in accordance with National Mining Agency (ANM) resolutions 95 of 2022 and 83 of 2024.

In 2024, approximately 10,000 people participated in 217 educational events organized by Vale, including theater performances, robotics workshops, drills, siren tests, dam visits, teacher training, and orientation seminars. These actions aim to follow the United Nations Environment Program's Awareness and Preparedness for Emergencies at Local Level (APELL) parameters, taking into account social issues, human rights, continuing education and emergency response, in line with GISTM guidelines.

Vale has also formed partnerships to promote joint prevention actions, such as the collaboration with the Minas Gerais power utility, CEMIG, in São Gonçalo do Rio Abaixo, which enabled a shared emergency drill. Since 2020, we have developed Emergency Action Plans for Drinking Water Supply, currently under review by local water utilities and regulatory bodies.

We strive to go beyond our legal responsibilities by working with civil defense bodies to support municipal contingency planning. These plans map a range of risks (floods, landslides, fires, dam-related incidents) and aim to promote a culture of prevention, raise awareness of possible emergencies, and strengthen community resilience. To date, Vale has supported 26 contingency plans, enabling them to access public funds for prevention efforts. For further information, please visit [Vale's PAEBM website](#) and our [Integrated Report](#).

- **GISTM:**

We have achieved a significant milestone by ensuring that [100% of our high-risk structures comply with the Global Industry Standard on Tailings Management \(GISTM\)](#). Currently, we implemented GISTM for 48 of the 50 TSFs in our portfolio in August 2023 – regardless of their consequence rating – although we have made a public commitment to implement it for all EARs with "extreme" and "very high" consequence ratings – and continue to have a continuous monitoring process to ensure compliance with the standard. The two remaining TSFs, the Torto Dam and the Dique de Pedra, will meet GISTM requirements by August 2025. For further information, please visit the GISTM page on [Vale's ESG Portal](#).

- **Alternative to tailings dam:**

Another important precautionary measure is the reduction of reliance on tailings dams in our productive processes. Vale already operates filtration and dry stacking systems for approximately 80% of the tailings generated at four major operational units: Brucutu, Conceição, Cauê, and Vargem Grande. In addition, new dry beneficiation technologies continue to be part of the company's strategic initiatives in research and development.

We have strengthened our circular economy initiatives in mining. We launched the Waste to Value program, which aims to generate new products from mining waste, encompassing the reprocessing of tailings and reduction in waste rock.

In 2024, Vale recovered more than 12.7 million tonnes of iron ore by reusing tailings and waste rock. The program's goal is to obtain around 10% of Vale's production in a circular manner by 2030. Through the Waste to Value program's initiatives, Vale aims to avoid 1.9 million tonnes of carbon dioxide emissions by 2035 — the equivalent of the annual emissions of 1.2 million small cars.

The initiative's main challenges involve innovation and the development of new technologies to increase waste reuse. Vale has partnered with universities, research centers, and other stakeholders to advance circular economy solutions. The company has implemented several innovative projects, including the production of sustainable sand and institutional initiatives such as block and paving plants.

In 2024, 1.4 million tonnes of sustainable sand were sold by Agera, a company created by Vale to develop and market this co-product. Produced from ore tailings, the sand replaces material extracted from the environment for use in concrete, mortar, and paving. For more information visit our [Integrated Report](#).

- **Air emissions approach:**

We intensified efforts to manage air emissions and dust in communities near our operations.

We manage emissions through dispersion modeling, advanced control technologies, and 24/7 monitoring linked to operational centers. We also tested a dust suppressant made from recycled PET bottles in partnership with the Federal University of Espírito Santo, reusing 1.8 million liters of PET— about 5.2 million bottles — across 17 sites.

Additional measures include water trucks, fixed sprinklers, and briquette technology, which significantly reduces sulfur oxides, nitrogen oxides, and particulate matter in iron ore processing.

In 2024, Vale reduced environmental incidents by 47% compared to 2023, with no critical cases, reflecting our progress in managing environmental control and prevention systems. For more information, please visit our [Integrated Report](#).

We know that rebuilding trust takes time and consistent action. The measures outlined here reflect our ongoing commitment to safety and impact mitigation. We remain firmly committed to non-repetition as we work toward a more responsible and resilient future. For further information, please see [Vale's Integrated Report](#).

***“Residents and environmentalists in Minas Gerais are becoming increasingly concerned about the company's ambitious plans to expand its business in areas where biodiversity and water security are severely threatened. Social movements are warning of various violations in the environmental licensing process, including the Apolo Project and the Serra do Gandarela Project.”***

The management of social and environmental risks and impacts goes beyond legal compliance and involves active engagement with society, with mitigation and compensation measures implemented throughout the entire project lifecycle.

- **New projects:**

Vale reaffirms its commitment to legal compliance and environmental sustainability in all new ventures. Each project is developed in strict observance of the laws and guidelines of the countries where the company operates, ensuring full compliance with legal and regulatory requirements.

In Brazil, projects strictly follow the phases of environmental licensing process. This process is conducted in accordance with the regulations established by the competent environmental agencies, such as States Secretariats for Environment and Sustainable Development and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA).

Additionally, Vale values transparency and dialogue with local communities. Holding public hearings is a constant practice, allowing the population to be informed about the projects, clarify doubts, and contribute suggestions. These hearings are fundamental to promoting social participation and ensuring that the ventures meet the expectations and needs of the communities involved.

The company also makes Environmental Impact Studies (EIA) and Environmental Impact Reports (RIMA). This initiative aims to ensure that all interested parties have access to relevant information about the projects.

Through these practices, Vale seeks to ensure that its projects are implemented responsibly, sustainably, and in alignment with the principles of respect for the environment and the communities where it operates.

We recognize that our activities can generate social and environmental impacts. Nevertheless, the application of the tools and practices previously mentioned enable the identification of potential impacts and risks and the implementation of effective prevention and mitigation measures, reinforcing our commitment to responsible mining.

- **Apolo project:**

The new Apolo Project has undergone significant changes since its original design in 2009, including the decharacterization of dams and a reduction in their size. Since then, Vale has participated in public hearings, listened to the requests of civil society and sought the best solutions in technology, planning and sustainability to reduce its environmental footprint, GHG emissions and water use.

The project, currently in the licensing phase and straddling the municipalities of Caeté and Santa Bárbara in Minas Gerais, was revised in 2020. It will consist of open-pit iron ore mining, ore treatment without the use of water (dry stacking), waste rock piles and a railroad branch line to connect with the Vitória–Minas Railroad.

Due to the project's simplified operations, involving fewer production stages and less equipment, carbon emissions will be reduced by 50% and new water abstraction will be 95% lower compared to the original design. It is also important to note that the New Apolo Project aims not to generate any waste and will not have a dam or any other waste disposal structure.

The Apolo Project lies outside Gandarela Hills National Park, a conservation area, which was created in 2014 with Vale's involvement. The project will therefore not interfere with the park's boundaries and waterfalls.

The new design has a significantly smaller environmental impact, compared to the original one, as shown in the table below.

<b>Main changes to Project Apolo</b>	<b>2009 Project Apolo</b>	<b>2020 New Project (under licensing)</b>	<b>Changes (%)</b>
<i>Project area (ha)</i>	2,000	1,368	-32%
<i>Waste Rock pile area (ha)</i>	420	268	-36%
<i>Water consume (m<sup>3</sup>/h)</i>	1,900	100	-95%
<i>Carbon emissions (GgC)</i>	2,120	1,220	-42%
<i>Tailings volume (Mm<sup>3</sup>)</i>	145	0	-100%
<i>Railroad (Km)</i>	18	8.2	- 54%

- **Serpentina project:**

As publicly disclosed in December 2024, Vale finalized a strategic partnership with Anglo American involving the Minas-Rio operation. Under this agreement, the Serra da Serpentina assets —formerly owned by Vale— have been transferred to Anglo American. Further information is available [here](#).

We recognize the concerns raised by civil society and reiterate our commitment to responsible and transparent project development. Vale continues to engage with stakeholders, comply with environmental legislation, and adopt best practices in order to ensure that our new ventures contribute positively to communities and ecosystems.