

Vale 2014  
Sustainability  
Report

For a world with new values.

**VALE**



# About this report

For the eighth consecutive year, we are publishing our sustainability report according to Global Reporting Initiative (GRI) guidelines. Once again we have adopted the GRI G3 version. Our new materiality and greenhouse gas emission (GHG) indicators follow the G4 guidelines. Our application level remains at the A+ level, with the presentation of indicators from the Mining and Metals Sector Supplement and the principles of the United Nations Global Compact.<sup>1</sup> All indicators and Profile Items are included in this report, with their respective acronyms.

This report has been verified by the independent auditing company Bureau Veritas Certification, the declaration for which can be found on [page 117. PI3.13](#)

With this report, we seek to be accountable to society for our actions, results and commitments in the economic, social and environmental areas for 2014,<sup>2</sup> and where applicable<sup>3</sup> for the purposes of comparison we have provided historical data from the two previous years. [PI2.9, PI3.1, PI3.2, PI3.3, PI3.9, PI4.14, PI4.15, PI4.16, PI4.17](#)

As a result of the materiality analysis process carried out in 2014, relevant themes were identified that guide the way we have organized this report. Subsequently, our main stakeholders are presented along this report according to these relevant themes. More on our mechanisms of dialogue with our main stakeholders can be found on [page 28. PI1.2, PI3.5, PI4.15](#)

In order to define these themes according to GRI G4 guidelines, the following steps were taken:

**1<sup>st</sup> – Survey of priority themes:** Evaluation of a range of internal documents, external documents related to our sector and six interviews with representatives from key areas of the company.

**2<sup>nd</sup> – Prioritization of priority themes:** The themes identified in the first step were assessed through semi-structured interviews conducted by 11 directors, three experts in key sustainability topics and four members of our Governance and Sustainability Committee. For each mapped theme, the ability to influence stakeholder evaluations and decisions (influence axis) and the importance of our economic, environmental and social impacts (impact axis) were analyzed. These were organized according to weighting and priority in order to develop our materiality matrix.

**3<sup>rd</sup> – Validation and organization of priority themes:** Once consolidated, the results were validated by stakeholders involved in the materiality definition process, our Human Resources, Health and Safety, Sustainability and Energy Executive Director and our CEO.

To facilitate its presentation, the themes were organized into four main areas: Internal and External Governance, Business Perspectives, Relationship with People and Relationship with the Environment and Climate Change.

- 1. Sustainability Reports perform the role of Communication on Progress (COP) as part of the Global Compact.
- 2. Any differences in total data or percentages in graphs and charts should be attributed to the rounding of values. Throughout this report, values in Brazilian reais have been converted to US dollars using an exchange rate of 2.32.
- 3. In view of the complexity of our activities, we do not have a single "business unit" criterion. Therefore, some indicators are not expressed as a percentage in comparison to "business unit" figures.



To access photo captions, hover your cursor over the images



Two additional issues were raised during the materiality validation process: human rights and supply chain. At these are understood to be cross-cutting, as they permeate various sections of this report.

Based on the results of the materiality process, this report contains 57 indicators, 31 of which are core, 18 additional and eight from the Mining and Metals Sector Supplement.

### Report scope (Boundary)

We have adopted the same scope defining methodology (Boundary) that we used in previous reports, which uses criteria of degree of influence (share control or operational) and the potential impacts of sustainability.<sup>4</sup> In 2014, the major changes were: Vale Mina do Azul S.A. (manganese ore) was incorporated by Vale S.A. and Vale S.A. sold all of its indirect participation in Vale Florestar S.A. (a forestry production company). For Ferrovia Centro-Atlântica S.A. (FCA) and Ferrovia Norte-Sul (FNS), we concluded the sale of part of our participation to VLI S.A.,<sup>5</sup> maintaining a participation of 37.6% at the end of the transaction. In March 2015, Vale sold 49% of its participation in the Belo Monte Hydroelectric Plant (UHE Belo Monte) project to CEMIG. Therefore, Vale's indirect participation in the capital of Norte Energia is 4.59%. More details are presented in the tables on **page 101. PI2.9, PI 3.6, PI 3.7, PI 3.8, PI 3.10, PI 3.11, PI4.17**

<sup>4</sup> The scope of operations covered in each indicator can vary. The most relevant characteristics are presented throughout the report.

<sup>5</sup> As this transaction was concluded in 2014, the performance of some of its indicators such as water and energy were included in this report.



For more information on sustainability, please visit [www.vale.com](http://www.vale.com) or contact us through the Contact enquiries channel on our website. **PI3.4**

# Internal and External Governance

## Strategic pillars

Take care of our people; embed sustainability into our business; manage our portfolio with discipline and efficiency; focus on iron ore; grow through world-class assets. **page 17**

90%

Employees in 2014 that signed the new Code of Ethics and Conduct, an action that will be continued in 2015. **page 22**

Since 2006, the effectiveness of our internal controls has been internally evaluated by the company's own administration and verified by an independent auditor, according to the Sarbanes-Oxley Law (SOX).

**page 21**

### Ombudsman

In 2014, this service has been available for a year. Its objective is to promote the continuous improvement of ethical awareness and guarantee our internal and external publics a proactive, transparent, independent and impartial communication channel with which to register complaints.

**page 21**

4

dimensions of our risk management approach: market, credit, operational and projects.

**page 20**

### Relationship with Public Authorities

We aim towards proactive participation in the formulation of public policies and in the understanding of our points of view, in order to establish or maintain a favourable environment for the mining sector. **page 24**

95%

Targets achieved according to our Sustainability Action Plan (PAS). Our variable remuneration program ties our economic and financial performance to operational excellence and sustainability, both linked to themes that seek our continuous improvement. **page 35**

### Human Rights

We have adopted the UN's Guiding Principles on Business and Human Rights as a reference. We have been using tools such as our Human Rights Policy since 2009, which was revised and approved in 2014 by the Board of Directors.



**page 25**

### Suppliers Code of Ethics and Conduct

This is the way in which we disseminate our principles and values among our suppliers. We ask them to sign this document, which specifies the prohibition of the use of child, forced or compulsory labour. **page 27**



# Business Perspectives

## A new paradigm for the industry

The sector's companies have entered a period of structural changes aimed at improving productivity, managing costs and creating value for their investors.

page 39

### Solid performance

in 2014, despite the challenges caused by the decline in the price of commodities. **page 40**



8

capital projects concluded in 2014, the majority within the specified deadline and budget.

**In Canada** first nickel produced by the new hydrometallurgical plant at Long Harbour.

**In Malaysia** start of operations at the Teluk Rubiah Maritime Terminal.

**In New Caledonia** record annual production of 19,000 tons of nickel.

page 40



N4 and N5

Mines in Carajás that were granted environmental licenses, allowing the expansion and continuity of operational activities and representing progress in our project to increase iron ore production.

page 41

## US\$1.1 billion

Resources invested in 2014 in environmental protection and conservation and social projects. **page 44**

## 1.2 billion

dollars: reduction in expenditure, thanks to the efforts of our employees in maintaining our competitiveness in the mining industry. **page 40**


### Record production

in iron ore, copper and gold, in 2014, and the best annual production of nickel since 2008. **page 40**

# Relationship with People

# 206,400

employees and contractors in 2014, with 77% in Brazil and the majority of these in the states of Minas Gerais and Pará. **page 55**

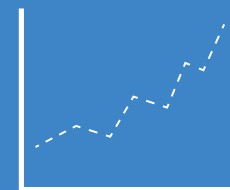


**Active Genuine Care**  
This concept means caring for yourself, caring for others and letting others care for you. It was disseminated during our engagement actions along the year. **page 54**

## Integrated Management Model

# 3,000

demands and complaints received from communities, 57% of which were resolved, 12% currently being addressed and 31% not within the company's responsibility.



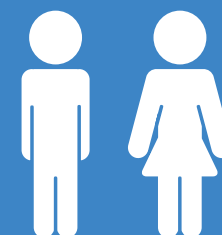
**page 63**

# US\$192.2 million

Financing and credit lines made available in order to train suppliers in various areas of management. **page 72**

# 64%

Employees contracted locally. **page 71**



# 89%

Employees that agree that we provide a working environment that accepts differences between men and women. **page 60**



# 88%

Purchases made locally. **page 71**

## Vale Foundation

Cross-sector partnerships in Canaã dos Carajás (state of Pará). **page 67**

# 130,000

Employees and contractors that participated in our Day of Reflection on fatalities in order to intensify our collective effort to achieve zero harm. **page 53**

# Relationship with the Environment and Climate Change



5.9x

The extent to which the areas we protect (on our own and through partnerships) exceed the total area of our operational sites. Of the 15,200 km<sup>2</sup> of natural areas, 98% are protected in conjunction with local governments. **page 93**



195

suppliers  
trained  
since 2012  
to produce  
greenhouse gas  
inventories.  
**page 84**

5%

Target to reduce  
direct emissions  
of greenhouse  
gases (GHG)  
by 2020. **page 80**



30%

Approximate  
reduction in total  
water demand at  
the Tubarão Port  
as a result of the  
installation of  
modern automated  
meters. **page 87**

80%

Of our units  
are in areas of "low risk"  
and "low to medium risk"  
of hydric stress. **page 87**

21%

Increase in the Fundo Vale's  
contribution to protection  
and/or sustainable development  
in six states in the Amazon. **page 95**



76%

Reused water  
at our operations  
in 2014, and we  
no longer extract  
1,130 million  
m<sup>3</sup> from natural  
resources. **page 89**



# Our business strategy is driven towards sustainable development so that we can sustain the volatility of economic cycles



Leo Aversa

In 2014, our operational performance was affected by the reduction in the price of mineral commodities. In spite of the economic situation, however, we have strengthened our capacity to optimize resources, increase productivity and subsequently create value for investors.

Our business strategy is driven towards sustainable development so that we can sustain the volatility of economic cycles and is based on world-class assets and projects.

We have concluded relevant projects, such as our distribution centre in Malaysia and the hydrometallurgical plant in Long Harbour, Canada, and we achieved record annual production at New Caledonia. In Mozambique, we negotiated a strategic partnership for our coal business and we invested in concluding the expansion of the Moatize mine, expected for 2015, which will double the production capacity of this operation. At the same time, in Brazil

we are firmly continuing with the implantation of the Carajás S11D Iron Project in the state of Pará, which will give new impetus to our business from 2016.

To preserve an adequate capital structure, in 2014 we disbursed US\$4.2 billion on dividends and invested US\$11.9 billion in the execution of projects and the maintenance of our operations. A total of US\$1.1 billion was invested in the socioenvironmental area, 76% of which went towards environmental initiatives and 24% to social initiatives. As a reflection of our discipline in capital allocation, we plan to invest US\$10.2 billion in 2015.

The effectiveness of our internal controls was evaluated by the company's administration and verified by an independent auditing company, in accordance with the terms of the Sarbanes-Oxley Law (SOX) and continuing with a process that started in 2006. Our Ombudsman, which reports to the Board of Directors, is responsible for providing information to the Fiscal Council and the

Governance and Sustainability Committee and from 2014 has been in operation for one year.

We have been listed on the Corporate Sustainability Index (ISE) of the São Paulo Stock Exchange since 2011, and in the area of climate change, we were included on the Climate Disclosure Leadership Index for the fifth time. On behalf of the Board of Directors, I would also like to emphasize Vale's commitment to the United Nations Global Compact. Our progress in the application of its principles is presented throughout this report.

For all of these reasons, I am sure that we will be successful on this journey and I would like to thank those who were a part of these efforts, especially our employees and partners, who are committed to seeking consistent results with zeal for the health and safety of everyone who works at Vale. Through ethical and trustworthy relationships, we are all contributing to building a better future.

**Dan Conrado**  
President of the  
Board of Directors

# We drive our business strategy characterized by solidity and guided by ethical relations, passion for people and the planet

The constant challenges associated with competitiveness in the mining industry reinforce how important it is that we work with a sense of ownership, caring for Vale with the same zeal that we have for our own possessions. With this in mind, we drive our business strategy characterized by solidity and guided by ethical relations, with passion for people and the planet and focusing on excellence and creating value in the long term.

The efficient management of Vale's business requires simplification, discipline and the elimination of waste. This has led us to reduce our annual expenditure by US\$1.2 billion, a result that was achieved thanks to the efforts of every employee. I am sure that our commitment to engage, develop and recognize our workforce is promoting continuous growth and contributing to sustainable results for the company.

In 2014, we registered record productions of iron ore, copper and gold, as well as our best nickel production since 2008. We have also concluded eight capital projects and obtained environmental licenses in Carajás, in the state of Pará.

Such achievements are extremely significant, but nothing compares to the value we give to life. We continue to

invest in prevention, with the aim of minimizing risks to the safety of those who work here, and we encourage the practice of Active Genuine Care, which means caring for yourself, caring for others and allowing others to care for us. Despite all of these efforts, eight of our colleagues lost their lives while carrying out their work. We deeply regret these losses and we express our solidarity with the families of our employees. We will continue to permanently and tirelessly seek to preserve lives.

I believe that it is also essential that we promote dialogue with the communities adjacent to our projects, as well as manage and mitigate the environmental and social impacts of our operations. Working across sectors and leveraging public and private investment, just as we are doing in the municipality of Canaã dos Carajás, in the state of Pará, has turned out to be fundamental in order for us to leave a positive legacy for communities.

Faced with the global challenge of climate change and the serious impact of this on society, it is crucial that we mobilize everyone on this theme. We have a goal to reduce direct greenhouse gases by 5% at Vale's operations by 2020. We are also aware of the growing need to protect water resources and we promote the rational use of water, stimulating the development of innovative technology.

Through our own initiatives and through partnerships, we continue to protect a green area almost six times bigger than the total area of our operations. The Fundo Vale, a non-profit organization created by Vale, increased its contribution to the protection and/or sustainable development of six states in the Amazon by 21%.

All of these actions are part of our commitment to the principles of the UN's Global Compact relating to human rights, labour rights, combating corruption and the protection of the environment. Convinced of the importance of integrating initiatives for the promotion of sustainable development, we participate in a select group of companies in the Global Compact Lead platform.

To find out more about our initiatives relating to sustainability, I invite you all to take a look through this report. I would like to take the opportunity to thank our employees and partners who collaborated so that we could achieve the results it presents. I am counting on each of you so that we can continue to construct a Vale that is even more safe and efficient.

Vantem Pereira Jr.

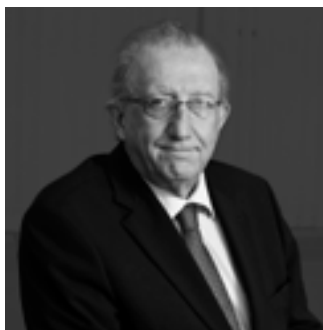


**Murilo Ferreira**  
Chief Executive Officer

# Executive Director



**Murilo Ferreira**  
President and Chief  
Executive Officer



**Galib Chaim**  
Executive Director,  
Capital Projects



**Humberto Freitas**  
Executive Director, Logistics  
and Mineral Exploration



**Jennifer Maki\***  
Executive Director,  
Base Metals



**Luciano Siani**  
Chief Financial Officer,  
Finance and Investor Relations



**Peter Poppinga\*\***  
Executive Director,  
Ferrous



**Roger Downey**  
Executive Director,  
Fertilizers and Coal



**Vania Somavilla**  
Executive Director, Human  
Resources, Health and Safety,  
Sustainability and Energy

\* Elected by the Board of Directors in November 2014, subject to obtaining the relevant visa, as required by Brazilian law.

\*\* Executive Director of Base Metals until November 2014.

## Changes - Departure

**José Carlos Martins**

Executive Director of Ferrous

November 2014

## Exit






# Mission

To transform natural resources into prosperity and sustainable development

# Vision

To be the number one global natural resources company in creating long-term value, through excellence and passion for people and the planet

# Values

- Life matters most
  - Value our people
  - Prize our planet
  - Do what is right
  - Improve together
  - Make it happen
- 



# Profile and Global Operations

We are the world's largest producer of iron ore, iron ore pellets and nickel. Our product portfolio also includes manganese ore, ferroalloys, copper, platinum group metals (PGMs), gold, silver, cobalt, thermal and metallurgical coal, potassium, phosphates and other fertilisers. We are also active in the logistics, steel and energy sectors. **PI2.1, PI2.2**

Our headquarters are located in Brazil, in Rio de Janeiro (Rio de Janeiro State), and we have operations, offices, mineral exploration activities and joint ventures as shown on the map on **page 15**. **PI2.3, PI2.4, PI2.5, PI2.7**

Our operations are summarized by our brand positioning "Vale. For a world with new values". This captures the essence of the company, its beliefs and the premises present in its Mission, Vision and Values.

We seek to build an organizational culture that values diversity, is fair and inclusive, offers opportunities for professional growth and prioritizes the health and safety of our employees. We also seek to establish strong and open relationships in the communities in which we operate, contributing to the development of the regions where we are

present. Sustainability is one of our strategic pillars, based on the concept that development can only be sustainable when the company and society grow together, sharing the value generated. **PI2.8**

From an economic and financial point of view, we had a strong operational performance in 2014, with record production for iron ore, copper and gold, as well as achieving our best annual production of nickel since 2008. We are a publicly traded company with our shares traded on the stock markets of São Paulo, New York, Hong Kong, Paris and Madrid. **PI2.6, PI2.8**

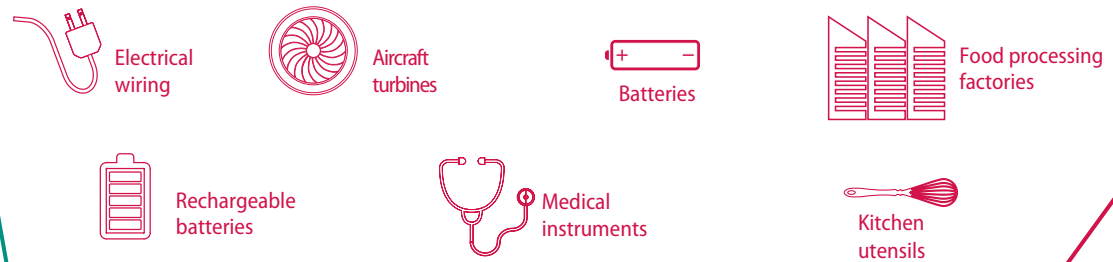
## Iron ore



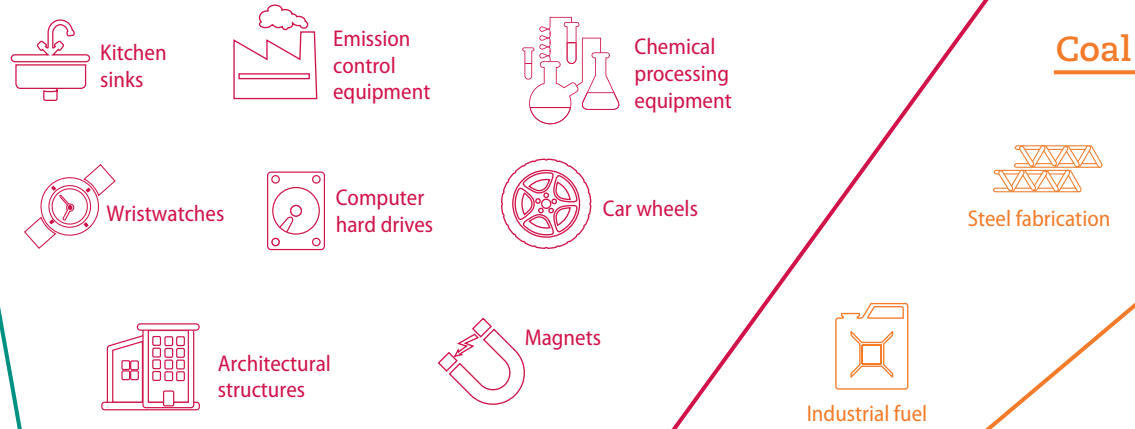
## Potassium, phosphates and nitrogenous compounds



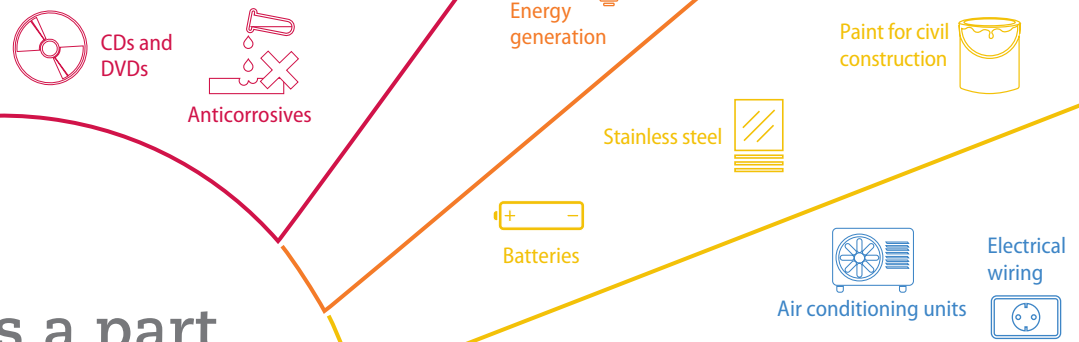
## Nickel



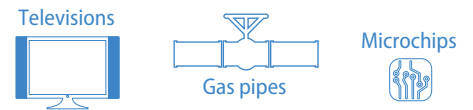
## Coal



## Manganese

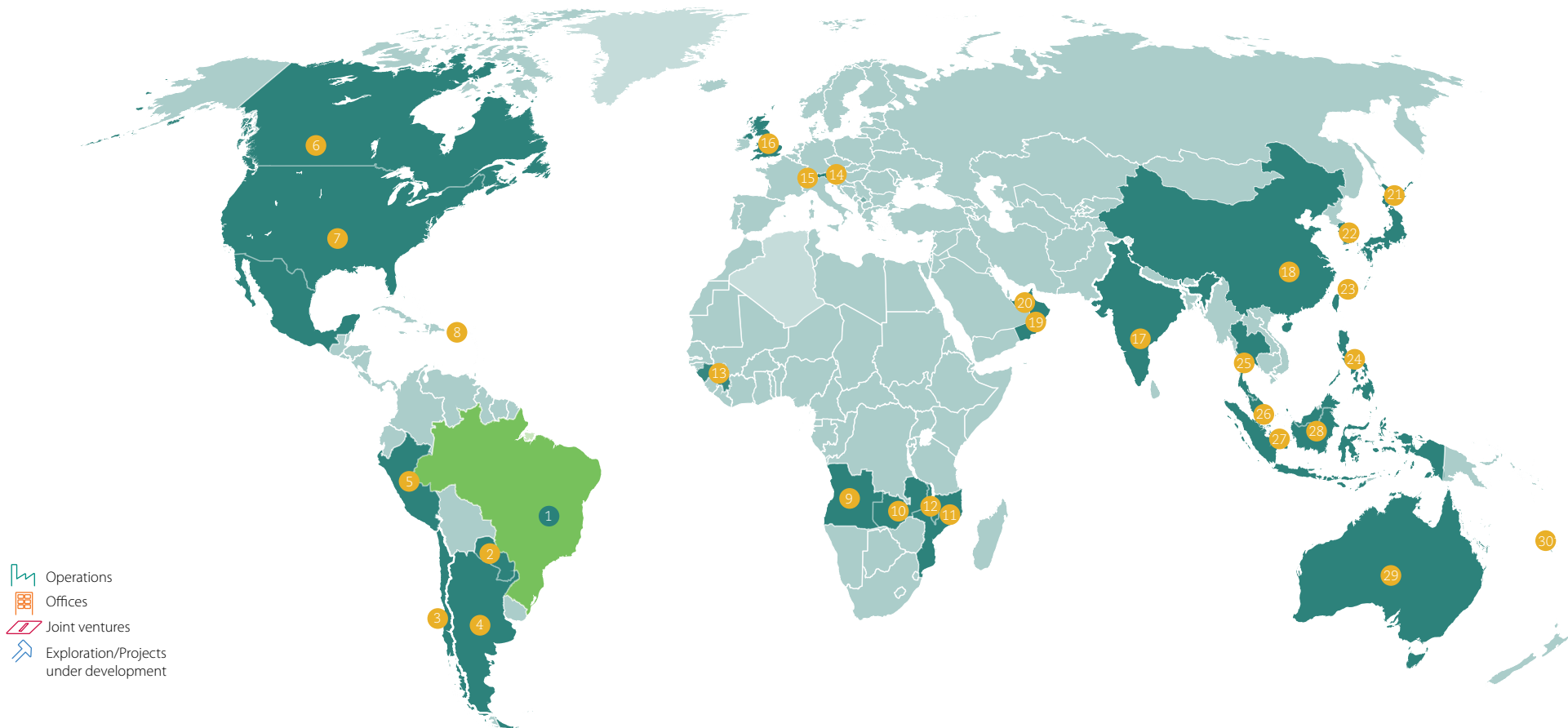


## Copper



Vale is a part  
of your life

# Vale's operations around the world



## Americas

- 1 **Brazil (Vale's worldwide headquarters)** [Operations] [Offices] [Joint ventures] [Exploration/Projects under development]
- 2 Paraguay [Offices]
- 3 Chile [Offices] [Exploration/Projects under development]
- 4 Argentina [Operations] [Offices]
- 5 Peru [Operations] [Offices] [Exploration/Projects under development]
- 6 Canada [Operations] [Offices] [Exploration/Projects under development]
- 7 United States [Offices] [Joint ventures]
- 8 Barbados [Offices]

## Africa

- 9 Angola [Offices]
- 10 Zambia [Operations] [Offices] [Joint ventures]
- 11 Mozambique [Operations] [Offices]
- 12 Malawi [Operations]
- 13 Guinea [Offices]

## Europe

- 14 Switzerland [Offices]
- 15 Austria [Offices]
- 16 United Kingdom [Operations] [Offices]

## Asia and Oceania

- 17 India [Offices]
- 18 China [Operations] [Offices] [Joint ventures]
- 19 Oman [Operations] [Offices]
- 20 United Arab Emirates [Offices]
- 21 Japan [Operations] [Offices]
- 22 South Korea [Offices] [Joint ventures]
- 23 Taiwan [Operations] [Offices]
- 24 Philippines [Operations] [Offices]
- 25 Thailand [Offices]
- 26 Malaysia [Operations] [Offices]
- 27 Singapore [Offices]
- 28 Indonesia [Operations] [Offices] [Exploration/Projects under development]
- 29 Australia [Operations] [Offices] [Joint ventures] [Exploration/Projects under development]
- 30 New Caledonia [Operations] [Offices]

- Ethics and Transparency
- Relationship with Public Authorities

# Internal and External Governance

## Our strategic pillars

We review our strategic plan on an annual basis, considering the objectives of our shareholders and the aspirations of our business units, and in particular recognizing the importance of dialogue with communities in order to create value for all parties.

Our strategic pillars are aligned with the reality of the mining industry and will help us achieve our vision to “be the global number one natural resources company in creating long-term value, through excellence and passion for people and the planet”.

Our focus is to create value in its widest sense. We believe that the concept of value goes far beyond financial results: we seek to create positive legacies for the communities where we operate. We work with excellence in the management of capital projects, the optimization of production flows in our operations and projects and by investing in world-class assets that have low production costs, the capacity to expand and a long useful life.

To generate more value, it is also essential that we become a simpler and more efficient company, with discipline in the management of resources and a focus on cost reduction.

# Strategic pillars

## Take care of our people

Seek to achieve zero harm, develop a team of professionals that are trained and accountable for their decisions and seek to be a great place to work, with individuals who are motivated, development opportunities and work-life balance.

## Embed sustainability into our business

Build positive economic, social and environmental legacies in the areas where we are present, mitigate the impact of our operations on adjacent communities and promote sustainable practices throughout our value chain. In addition, we seek to secure our licenses to operate through an integrated approach and transparent dialogue with our stakeholders.

## Manage our portfolio with discipline and efficiency

Be austere in our use of financial resources, focusing on assets with higher profitability, and attract partners to leverage growth and manage risk.

## Focus on iron ore

Reinforce our leadership in the iron ore sector, increasing the supply and quality of our products while maintaining a low cost structure in order to regain market share.

## Grow through world-class assets

Create value and not just add volume, focusing on competitive assets and projects that have scale, are expandable and can sustain multiple economic cycles in iron ore, nickel, copper, metallurgical coal and fertilizers.

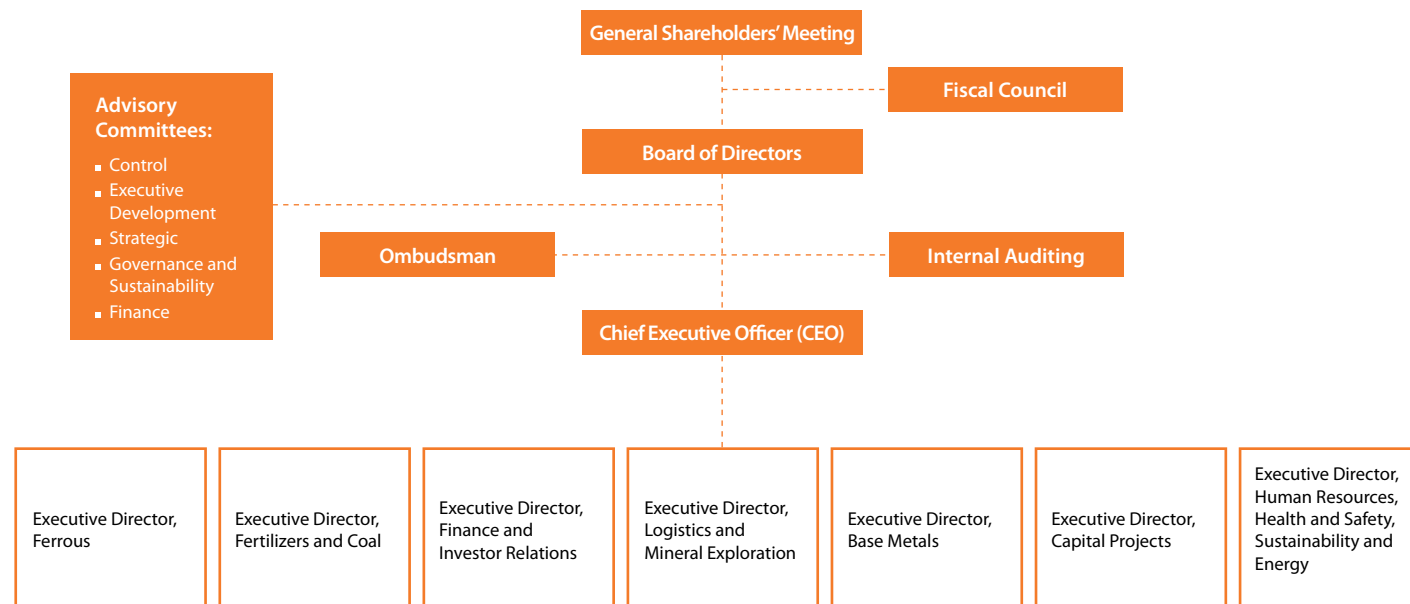
## Governance

Our governance structure meets our global demands, promotes our values and keeps us aligned with international best management practices. In addition, it ensures transparency so that we can be clear on our positions and decisions in the short, medium and long term. Our governance is guided by policies and guidelines such as our Sustainable Development Policy, our Global Climate Change Mitigation and Adaptation Policy, our Global Anticorruption Policy and our Health, Safety and Environment Responsibility Guidelines, among others. **PI4.1, PI4.8**

In 2014, we completed a review of our Human Rights Policy, with the objective of reflecting our progress in relation to this theme since its publication in 2009. The aim of our policy is to respect, protect, raise awareness and promote human rights in our activities and throughout our supply chain, in accordance with the United Nations Universal Declaration of Human Rights.

Our governance structure is aligned with international best management practices, guaranteeing transparency in our positions and decisions, as well as promoting our values

## Governance Structure



## Board of Directors

This board is responsible for drafting general guidelines and policies, reviewing plans and projects proposed by the Executive Board and evaluating results. It is composed of 11 members and their respective substitutes, elected at the shareholders meeting or appointed by the Board of Directors, in accordance with Article 11, Paragraph 10, of Brazilian bylaws,<sup>1</sup> with a mandate of two years. In December 2014, the board was composed of nine directors and nine substitute members appointed by the controlling shareholders, one independent member unaffiliated with the controlling group and two representatives elected by the company's employees. **PI4.3, PI4.9**

Minority shareholders may express their opinion on matters on the agenda through annual shareholder meetings, and extraordinary meetings when called by the Board of Directors.

Non-controlling shareholders holding common shares that represent at least 15% of the total number of voting capital, and preferred shares representing at least 10% of share capital, are entitled to elect one member and one substitute member to the Board of Directors.

In the event that neither the holders of common shares nor holders of preferred shares meet this quorum they may combine their shares, and once their percentage reaches 10% of total capital they may jointly appoint a member and a substitute member to the Board of Directors.<sup>2</sup> **PI4.4**

Members of the Board of Directors receive fixed-sum remuneration. Total and annual remuneration for directors is determined at the annual shareholder's meeting, and takes into account respective responsibilities, time devoted to work, skills, professional reputation and prevailing market values. **PI4.5**

The Board of Directors is not subject to a formal self-assessment process. Members are recognized for their competence in the areas of finance and capital markets, corporate governance, mining activities, commercialization of minerals and sustainability. The Chairman of the Board, Dan Conrado, and the other members do not hold a CEO position at the company.

**PI4.2, PI4.7, PI4.10**

The internal audit answers directly to the Board of Directors, which has the authority to appoint and dismiss those responsible for its management.

<sup>1</sup>. In case of any vacancy arising for the post of member or substitute member, a temporary member may be appointed by the other members to serve until the next shareholders meeting, when the election shall be held.

<sup>2</sup>. José Mauro Mettrau Carneiro da Cunha was elected as a nominee of Valepar S.A. at the shareholders meeting on April 17, 2013. Holders of Vale's common shares not including the controlling shareholder did not reach the necessary quorum, either individually or jointly, and holders of preferred shares, also excluding the controlling shareholder, did not nominate a candidate to represent them on the Board of Directors.

## Fiscal Council

This permanent council consists of three to five independent members (and an equal number of alternates), under Brazilian law. It oversees Vale's management activities and reviews the company's financial statements, reporting directly to shareholders. It also performs the role of Audit Committee, in accordance with the terms of the Sarbanes-Oxley Law and the rules that regulate the listing of securities on the Hong Kong Stock Exchange (HKSE). The Fiscal Council is made up of four members and three substitute members, and one member and their respective substitute were re-elected by preferred shareholders at the 2014 annual shareholders meeting. None of the members of the Fiscal Council are members of the Board of Directors or the Executive Board, respecting the independence criteria determined by Brazilian legislation.

## Advisory Committees

To assist the Board in conducting its activities, Vale has five advisory committees in the areas of Executive Development, Strategic, Finance, Accounting and Governance and Sustainability. These committees are forums for discussion and their members share different views, increasing the maturity and alignment of proposals before they are submitted to the Board of Directors. The aim is to contribute to the fluidity of decision-making processes and the quality of decisions made.



# 6,500

consultations performed in the areas of human rights, safety and corruption, among others, with our suppliers in Brazil

## Executive Board

This board implements the business strategy determined by the Board of Directors, prepares plans and projects and is responsible for the company's operational and financial performance. Its members are appointed by the Chief Executive Officer and elected by the Board of Directors.

In addition to fixed-sum remuneration, our Executive Directors and other company executives receive bonuses and incentive payments insofar as they meet individual and collective goals to achieve the company's strategic results, related to financial, operational/technical and sustainability indicators. **PI4.5**

## Integrated risk management

Aligned with the principles defined by our Board of Directors and Executive Board, our Corporate Risk Management Policy requires consolidated measurement and monitoring of risk events that may have an impact on health and safety, the environment, society and the company's reputation and financial capital.

The application of this policy is supervised by the Risk Management Executive Committee, which also reviews the principles and instruments for managing corporate risk and supports the Executive Board in the analysis of applicable risk and issuing risk assessments. The committee meets on a quarterly basis to evaluate the main risks and their respective controls and action plans, and is always guided by ISO 31000 standards.

The company's approach to risk management is divided into four dimensions:

- **Market:** assesses the impact of the volatility of risk factors such as interest rates, exchange rates and commodity prices on cash flow;
- **Credit:** reviews the possibility of default of obligations assumed by counterparties, such as customers, financial institutions and suppliers, among others;
- **Operational:** evaluates the risk of potential losses resulting from failures or shortcomings in internal processes, people, systems and/or external events that may result in harm to people, the environment, to property, to society and to the company's reputation;
- **Projects:** focuses on the potential impact of risk on investment, the duration and safety of projects, as well as the operational performance of new facilities. **PI1.2**



We implement the precautionary principle when conducting feasibility studies on our projects and the development of our operations, in terms of its application in the management of corporate, environmental, social and health and safety risks relating to employees, contractors and communities adjacent to our operations, as well as matters involving the environment in general. **PI4.11**

In addition, since 2009 we have been performing due diligence work with third parties in Brazil in order to mitigate the risk of contracting or subcontracting companies considered disreputable, preventing possible risks to the company's image and reputation. In 2014, we performed around 6,500 consultations, encompassing the themes of human rights, safety and corruption, among others. Since 2013, this process has also been incorporated into the certification flow for new suppliers in the main countries in which we operate.

### Ethics and transparency

We have a Code of Ethics and Conduct, updated and aligned with our values in 2013, which reinforces our commitment to ethics and presents the concept of conflict of interest and describes the conduct expected of employees and behaviour that will be subject to disciplinary measures. The effectiveness of our internal controls has been evaluated by the company's management since 2006, according to the Sarbanes-Oxley Law (SOX) and attested by our independent auditors. **PI4.6**

In order to further reinforce our commitment to ethics and transparency, we created our Ombudsman in 2013, which reports to the Board of Directors and is responsible for providing information to the Fiscal Council and the Governance and Sustainability Committee (more information on **page 26**). The objective of the Ombudsman is to promote the continuous improvement of ethical awareness and guarantee a proactive, transparent, independent and impartial communication channel for our internal and external audiences who wish to make a complaint.

In December 2014, we started to independently support the Extractive Industry Transparency Initiative (EITI),<sup>3</sup> an initiative that promotes transparency in financial transactions between

extractive companies and the governments of the countries where they operate. The company is also signatory to the Business Pact for Integrity and Against Corruption, created by Ethos Institute in partnership with the Office of the Comptroller General (CGU) and with the United Nations Office on Drugs and Crime (Unodoc).

In the last two years, various countries where we operate have established new laws related to corruption and bribery with a broader range and scope than the U.S. Foreign Corrupt Practices Act (FCPA). In this context, in 2012 we decided to improve our anti-bribery and anti-corruption standards and procedures to include these legal requirements.

<sup>3</sup> We are also on the EITI Coordination Committee in Mozambique and Peru (at a subnational level).

# Our Code of Ethics and Conduct has been updated and aligned with our values and reinforces our commitment to ethical business

After detailed global evaluation<sup>4</sup> of the risk of corruption in our activities (between 2012 and 2013), we developed a Global Anti-Corruption Program. This, among other initiatives, led to revisions to the company's Code of Ethics and Conduct in order to reinforce specific provisions related to this theme. We have also approved a new Global Policy and a new Global Anti-Corruption Manual, offering clear rules on the provision and receipt of gifts and hospitality, political and charitable donations, investments in communities, sponsorship, relationship actions, third-party hiring, mergers, acquisitions and joint ventures and the selection and remuneration of employees and directors, among others. We have teams dedicated to this program in Brazil, Canada,

Mozambique and Singapore, that cover all our locations in the five continents where we operate.

In 2014, we raised awareness among the 90% of our workforce that signed the new Code of Ethics and Conduct, which now reinforces our provisions against corruption and bribery, and this action will be continued in 2015. We also focused on the specific training of individuals considered to be a priority in mitigating the risk of corruption (for example, areas responsible for relationships with government employees, contracting third parties and intermediaries, donations, sponsorship and investment in communities and the acquisition of companies), which involved 1,100 participants (32% of

the company's priority public). We disclosed internally the rules established by our Policy and Manual, and we were active in improving the controls that need to be respected by all business units and subsidiaries. **SO3**

In addition to this risk assessment carried out under the Global Anti-Corruption Program the company's Corporate Security area works towards preventing losses<sup>5</sup> in our capital projects. In 2014, 7% of our operations were evaluated, including 14 projects, from the following business units: Ferrous Southeast (Alegria); Ponta da Madeira Maritime Terminal; some Vale Fertilizers operations in Araxá, Cubatão, Tapira and Taquari-Vassouras; the Salobo I Project; the S11D Project; the Itabira Project and the Serra Leste Project. **SO2**

<sup>4</sup>. New structural evaluations will be performed periodically or whenever detected the necessity for adjustments in the practices of a particular business area or group company.

<sup>5</sup>. Loss prevention analyses are performed to meet the demands of our operations.



# 90%

of our employees signed  
the Code of Ethics and  
Conduct, which will be  
continued in 2015



## Ethical awareness

Created one year ago, the company's Ombudsman has achieved important results. These include the creation of the Ethics Committee, composed of the Ombudsman, Auditing, Human Resources and General Consulting directors, the first study on Ethics and the Ombudsman, the opening of the Ombudsman reporting channel and the creation of regular reports to the Board of Directors, directors and employees, increasing the transparency of this process.

The Ombudsman can be contacted through several means, including electronic forms, letters, emails and telephone, and face-to-face meetings can be arranged. These channels are operated by an outsourced company that specializes in dealing with sensitive cases, ensuring the confidentiality of the proceedings and the anonymity of the complainant.

We restructured the process of handling allegations, and achieved a significant 68% reduction in the whistleblower response time, as well as greater commitment among leaders of the areas involved throughout the process. Vulnerability and risk analyses are carried out for verified complaints, and corrective action plans are drawn up including initiatives to mitigate the risks identified. In addition, we have refined the way we categorize the complaints we receive, allowing cases of discrimination to be easily identified, for example.

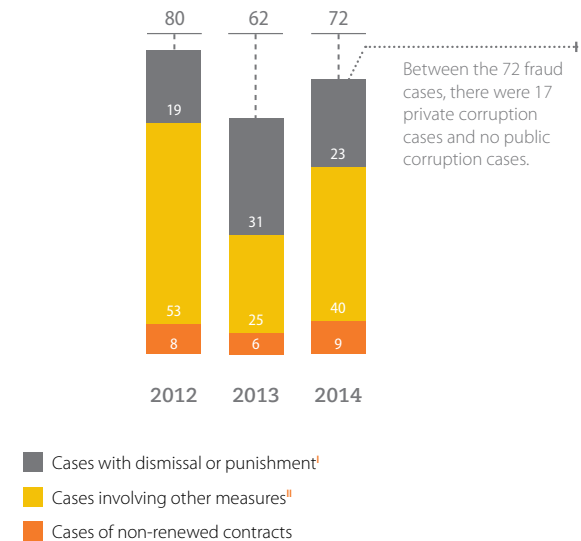
The Ombudsman receives complaints relating to the breach of any rule or conduct described in our Code of Ethics, such as harassment, discrimination, improper use of resources, inappropriate behaviour, fraud, bribery, corruption, conflict of interest and breach of environmental legislation or health and safety procedures, among others. The channel can also be used to deal with appeals relating to issues that have not been resolved by other means.<sup>6</sup>

In 2014, we did not record any cases of corruption (active or passive) involving civil servants or government representatives among our employees. Seventeen cases of private sector corruption were confirmed: five<sup>7</sup> of them resulted in nine employees being dismissed, four led to non-renewal of contracts with the suppliers involved, and in the other cases, in which no employees or suppliers were involved, other risk mitigation measures were taken. These occurrences are included in the 72 confirmed cases of fraud, as shown the following graph. None of these relates to any irregularities or improprieties in the company's accounting records or internal controls. SO4

<sup>6</sup>. Fale Conosco (Contact Us), Human Resources or Alô Ferrovia (Railway Hotline), for example.

<sup>7</sup>. One of the situations included in the number of cases that resulted in dismissal also resulted in non-renewal of contract.

## Fraud cases



<sup>I</sup>. In cases of fraud, the number of employees dismissed/punished was 35 in 2012, 83 in 2013 and 31 in 2014. One of the cases involved both dismissal/punishment and non-renewal of contract.

<sup>II</sup>. All 72 cases of fraud identified were presented to managers and directors of the areas involved together with their respective action plans. Nine of the 72 cases, suppliers were notified, payments were withheld and disallowances and/or fines were applied.



Find out more about our partnerships in the  
**Relationship with People chapter.**

## Itinerant Ombudsman

The Itinerant Ombudsman was created to bring together Ombudsman employees, providing them with information on the area and opening up channels of dialogue at different locations. In 2014, we held more than 40 Itinerant Ombudsman meetings. Around 4,000 employees attended the presentation and talked to the Ombudsman at our operations in Brazil (Itabira, Mariana, Brucutu, Carajás, Sossego, Onça Puma, Salobo, S11D, Vitória and São Luís), in Canada (Thompson, Sudbury and Toronto), Malaysia (Teluk Rubiah and Kuala Lumpur), Oman (Sohar) and Mozambique (Tete, Maputo and Beira).

In relation to situations of discrimination in the workplace, five actions were judged in 2014. Four of these still ongoing and one has already been concluded. We also investigated 11 complaints that were made to the Ombudsman and one of these was confirmed. These figures are significantly lower than those reported in the 2013 Sustainability Report (577 complaints, of which 155 were confirmed), as complaints of discrimination were formerly considered together with harassment and other human resources complaints.<sup>8</sup> The Ombudsman, with support from human resources, verifies and handles cases of discrimination through interviews with stakeholders, peers and managers. The results of these investigations result in appropriate corrective measures, including disciplinary actions such as warnings or dismissals and employee training. **HR4**

### Relationship with Public Authorities

Mining is an activity responsible for large private investments in Brazil, and so it is important that public policy is compatible with the need for sustainability in our business.

<sup>8</sup> Using the same criteria for 2013, we received five complaints related to discrimination, one of which was confirmed.

We maintain a continuous dialogue with government bodies in the countries where we are present, with a preference towards institutions and professional associations. This way, we aim to play a proactive role in the formulation of public policy and in making our views understood, and to establish or maintain a favourable environment for the mining sector.

We also seek to encourage cross-sector partnerships in order to leverage public institutions, companies, civil society and the social and economic development of the areas in which we are present, in conjunction with the various levels of government (federal, state and municipal).

Vale seeks to maintain strict impartiality with regard to political activities and acts in compliance with the laws of each country where it operates. Employees, as individuals and citizens, are free to participate in such activities, provided that their actions and opinions do not interfere with our corporate positioning.

Vale S.A. doesn't make donations to electoral campaigns, but other companies in the group are not prevented from doing so. Donations made by these companies are registered in the public reports of the official institutions responsible for conducting elections in the countries and regions where Vale operates. **S05, S06**



The Human Rights Policy  
is available at [www.vale.com](http://www.vale.com)

### Commitment to human rights

Companies have a responsibility to respect human rights in their activities and throughout their value chain. To ensure our commitment to this issue, we have adopted the UN's Guiding Principles on Business and Human Rights as a reference, and we have been using tools such as our Human Rights Policy since 2009. A new version of this was approved in 2014 by the Board of Directors.

We have also updated our Human Rights Guide, which brings together guidelines to engage our employees and other stakeholders. We continued with our strategic education plan on human rights, establishing the training required for our leaders and employees according to their activities, especially in the area of corporate security.

In addition to continuously strengthening a culture of respect for human rights, we have progressed over the years in improving our processes and tools that identify, prevent, mitigate and monitor potential human rights violations. We evaluate, with the support of various departments, such as Environment, Community Relations, Corporate Security, Labour Relations, Health and Safety and Supplies, the risks at every stage of our activities, including our value chain. In 2014, we applied our risk matrix for human rights violations in seven of our capital projects, including the Carajás S11D Project (in Brazil) and the Nacala Corridor (in Mozambique), two of our biggest projects.



Paulo Moreira

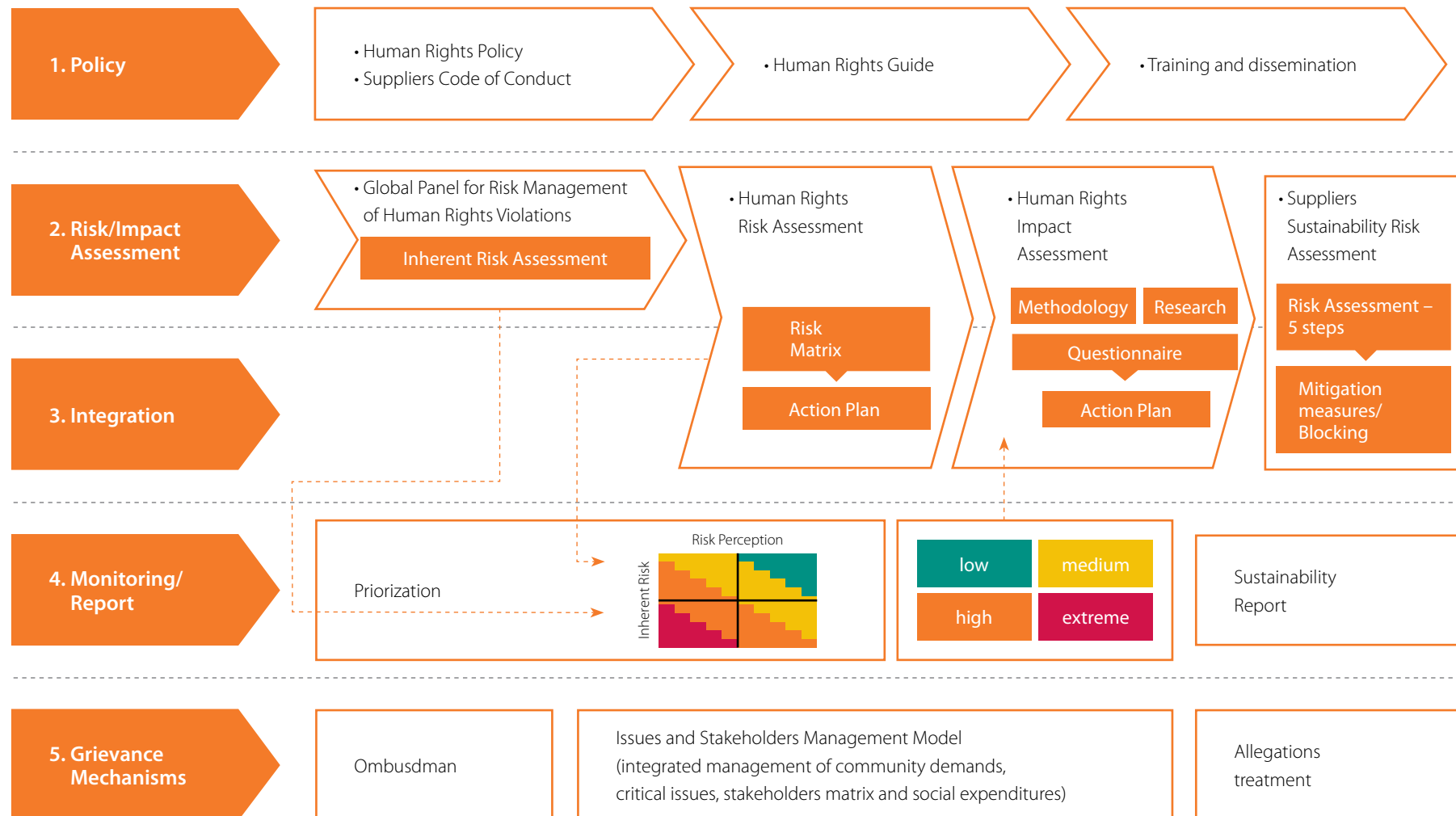
## In 2014

we revised and updated  
our Human Rights  
Policy and Human  
Rights Guide in order to  
engage our employees  
on this theme



Paulo Moreira

# Our human rights management process







One of our tools to evaluate impacts is the Strategic Panel for Risk Management of Human Rights, which fulfills the role of detecting locations with a higher risk of child, forced or compulsory labour, among others



One of our tools to evaluate impacts is the Strategic Panel for Risk Management of Human Rights Violations, which fulfills the role of detecting locations with the highest risk of child, forced or compulsory labour, among others. In relation to our employees, the risk of these practices and the exposure of young people to hazardous work is non-existent. We adopt rigorous processes when hiring our employees. All employees are aged over 18 years and we control access to our facilities.

Our principles and values are disseminated through the Suppliers Code of Ethics and Conduct, a document that is signed by our suppliers and that specifies the prohibition of child, forced or compulsory labour.

We have continuously improved the assessment of our suppliers. One of these initiatives was the sustainability risk analysis pilot project carried out in 2013, which resulted in improvements to this process, now including environmental risks relating to health and safety and human rights. In 2014, we applied this enhanced methodology for service providers of the Carajás S11D Iron Project. As a result, 24 of these have undergone external human rights audits. If human rights violations by our suppliers are proven by government agencies or legal instruments, those responsible are notified and must take corrective action. If this does not occur, the companies are subject to disciplinary action, including the termination of their contract.



Our suppliers signed our Suppliers Code of Ethics and Conduct, which guides them on our principles

**Mechanisms of dialogue** PI3.5, PI4.14, PI4.15, PI4.16

We prioritize the quality of life of our employees, social development and environmental protection, and we also invest in solutions and technology aligned with sustainable development. Successfully dealing with the challenges related to this type of activity requires consistent dialogue with all social actors, including governments, academia and the communities surrounding our operations. We provide these and other stakeholders with the following tools of communication, consultation or dialogue:

**General public**

- Sustainability Report
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Fale Conosco (Contact us – available at [www.vale.com](http://www.vale.com))
- Our sites (Global, Brazil, Canada, Australia, Indonesia, Japan, China, New Caledonia, Oman, and Mozambique)
- Reputation survey in operational areas and the large Brazilian capitals<sup>9</sup>
- Communication campaigns
- Social networks (Facebook, YouTube, Twitter, LinkedIn and Instagram)

**Shareholders, debenture holders and investors**

- 20-F Reports, press releases, fact sheets, announcements and minutes from General Shareholders Meetings, quarterly financial reports (ITR) and reference forms
- Webcast and conference calls
- Visits to our operations
- Investor Meetings
- E-mail: [rio@vale.com](mailto:rio@vale.com)
- Contact telephone number for the Investor Relations Department: 55-21-3814-4540
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Investors Area on [www.vale.com](http://www.vale.com)
- iPad application “Vale Investors & Media” – App Store

**Customers**

- Campaigns
- Special events
- Visits and meetings at our facilities
- Satisfaction surveys
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Fale Conosco (Contact Us) (available at [www.vale.com](http://www.vale.com))

**Employees**

- Interactive daily newsletter
- Monthly printed newsletter
- Newspapers at our operations
- Internal publications
- Intranet (Global, Brazil, Canada, Mozambique, Switzerland-Austria and Malaysia)
- Global Employee Survey<sup>10</sup>
- Special events, internal campaigns and direct communication actions
- Communication committees
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Fale Conosco (Contact Us) (available at [www.vale.com](http://www.vale.com))
- Social networks (Facebook, YouTube, Twitter, LinkedIn and Instagram)

**Suppliers**

- Visits and meetings at our facilities
- Exchange programs
- Structured meetings and collaborative workshops
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Ariba Portal (evaluation and interface portal with suppliers)
- Conference calls
- Telephone and e-mail
- Suppliers area on [www.vale.com](http://www.vale.com)

**Communities**

- Dialogue committees – regular meetings between our representatives, communities, local government and other companies present in the territory
- Participatory social surveys
- Socio-economic diagnoses
- Meetings for prior consultation
- Public hearings
- Visits to units
- Social dialogue process
- Meeting with leaders Program
- External disclosure – News
- Alô Ferrovias (Railway Hotline) channel for users of the Vitória – Minas (EFVM) and Carajás (EFC) railway passenger trains – 0800 285 7000
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Social dialogue meetings
- Direct contact with Community Relations Department staff (in person and by telephone)
  - Visits to communities
  - Telephone
  - E-mail
- Direct contact with other areas
  - Contact with Safety Department staff
  - Direct contact with train drivers and/or other railway staff
- Fale Conosco (Contact us – available at [www.vale.com](http://www.vale.com))
- Social networks (Facebook, YouTube, Twitter, LinkedIn and Instagram)

<sup>9</sup>. Quantitative study conducted annually by the Vox Populi Institute in Brazil.

<sup>10</sup>. Quantitative study conducted by the Human Resources Department with all our employees worldwide.





Participating in forums, institutions and other initiatives is an opportunity to monitor global trends in sustainable development



#### Public authorities and civil society

- Participation in associations and entities
- Meetings for prior consultation
- Interviews
- Ombudsman (described on [www.vale.com](http://www.vale.com))
- Visits and meetings at our facilities
- Participation in conferences, forums and debates

#### Press

- Press Room (on [www.vale.com](http://www.vale.com))
- iPad application "Vale Investors & Media" – App Store
- Telephone and e-mail with advisors (available in the press room)
- Webcast
- Face-to-face press conferences
- Conference calls
- Face-to-face interviews
- Visits to our operations
- Visits to our newsrooms
- Conversation circles

- Press releases and announcements
- Networking lunches
- Ombudsman (described on [www.vale.com](http://www.vale.com))

#### Institutional partnerships

Participating in forums, institutions and other initiatives is an opportunity to monitor global trends in sustainable development, discover best practices and enable the exchange of experience between companies. Our company follows discussions on policy relating to the environment, commerce, energy, sustainable development and transparency, among others.

We participate in regional associations and international organizations that promote sustainability beyond the extractive sector. We actively worked as a member of the International Council on Mining and Metals (ICMM) until May 2014. Since then, in line with our philosophy to think globally but act locally, we are in the process of separating

from the ICMM in order to focus more on national and regional forums. The following are some of our main activities with entities and associations. **PI4.12, PI4.13**

- **Columbia Centre on Sustainable Investment (CCSI)** | In 2014, the Vale Columbia Centre on Sustainable International Investment (VCCI) became the Columbia Centre on Sustainable Investment (CCSI), receiving our continuous support in the search to diversify its sources of funding. The CCSI seeks to develop an agenda of sustainable development through partnerships with investors, academia and government, reaffirming the essential role carried out by the responsible investors. We are the founding member and main sponsor of the former VCCI, a partnership between the Earth Institute and the Faculty of Law at Columbia University, in the United States, headed up by professor renowned developmental economist Jeffrey Sachs.

- **United Nations Global Compact** | We are a signatory and have followed the 10 principles proposed by the Global Compact since 2007.<sup>11</sup> At the invitation of the UN, since 2010 we have been a part of the Global Compact Lead platform, which brings together leading companies to discuss sustainability issues already engaged by the Global Compact. More information can be found in the table below.
- **Business and Industry Advisory Committee to the OECD (BIAC)** | We monitor and actively participate in committees that are relevant to our sector, such as the Raw Materials, Corporate Governance, Sustainable Development, Environment, Energy and Trade committees, among others. In addition, through the Organization for Economic Cooperation and Development (OECD), we participate in committees that are of interest to our business, such as the Steel Committee, and working groups, such as the Policy Dialogue on Natural Resource-Based Development and the Advisory Group on Stakeholder engagement and Due Diligence in the Extractive Sector.
- **World Economic Forum (WEF)** | Until September 2014, we worked as a member promoting, at its different levels, a strategic agenda for the global challenges faced by the private sector that directly impact the extractive sector, in particular the mining industry. We actively participate in the Industrial Group on Mining and Metals and in two actions relevant to the sector: the Responsible Mineral Development Initiative (RMDI) and Mining and Metals in a Sustainable World 2050. Both of these debate new investment models for infrastructure in the mining and metals sector and the role of mining in a sustainable world.

<sup>11</sup>. The indicator index in this report presents the correlation between our practices and our performance and the principles of the Global Compact.

## Global Compact

We have signed the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development and the United Nations Convention against Corruption. As a result of this increased cooperation with the Global Compact Lead platform since 2011, we have participated in programs related to subjects such as sustainable energy and engagement with indigenous populations.

In addition, since 2013 we have actively participated in groups that deal with the Post-2015 Development Agenda and in new forms of corporate reporting. The Post-2015 Development Agenda group submitted a draft text to the Secretary-General of the UN, including the company's business perspective, contributing to the definition of sustainable development goals that will be released to UN member countries in the second half of 2015. The group on new forms of business reporting aims to improve the ability of companies to report sustainability information integrated with economic data. During 2014, investors were invited to attend meetings and share their plans in order to integrate sustainability into investment decisions. Vale also participates in the Global Compact's Brazilian Network, acting in the Brazilian Global Compact Committee (CBPG).

- **World Business Council for Sustainable Development (WBCSD)** | We collaborate with the development of the WBCSD project, “Action 2020”, the objective of which is to identify ways in which companies can carry out their role in the challenge to create a sustainable planet by 2050, suggesting public policy and corporate solutions. In 2014, our main contribution was in the working groups on climate change, ecosystems, talent and jobs and basic needs and rights. More information can be found in the next table.
- **Sustainable Development Solutions Network (SDSN):** | We are part of both the Executive Committee and leadership Committee, and have participated in the discussions of the thematic group “Good Governance of Extractive Resources and Biodiversity”.
- **Brazilian Mining Institute (IBRAM)** | We participate in various initiatives and Special Programs promoted by the Institute and its other partners to promote sustainable development through studies, manuals and guides, research, innovation and the use of cutting-edge technology.

## WBCSD

We participated in the workshop organized by the WBCSD and the International Finance Corporation (IFC) on training and employment, and in the WBCSD’s Human Rights workshop. In the former, our suggestion to collect practical examples on how the mining industry contributes to job creation and training was accepted, and this material led to the report “Meeting the skills gap: best practices of WBCSD members in emerging markets”, published in early 2015.

In the area of human rights, we contributed to the organization’s efforts, sharing best practices in the implementation of the UN’s Guiding Principles on Business and Human Rights, which served as the basis for another report, “Scaling up Action on Human Rights: Operationalizing the UN Guiding Principles for Business and Human Rights”, published at the end of 2014. We also interacted with the Brazilian Business Council for Sustainable Development (CEBDS), representative of the WBCSD in Brazil.

## Participation in organizations and associations

### Global

- Business and Industry Advisory Committee to the OECD (BIAC)
- Business for Social Responsibility (BSR)
- Centre National de Recherche Technologique Nickel et Son Environnement (CNRT Nickel)
- Cobalt Development Institute
- Columbia Centre on Sustainable Investment (CCSI)
- Global Business Coalition on HIV/AIDS, Tuberculosis and Malaria (GBC)
- International Chamber of Commerce (ICC)
- United Nations Global Compact (Global Compact)
- Reputation Institute
- Sustainability 50
- Sustainable Development Solutions Network (SDSN)
- The Extractive Industry Transparency Initiative (EITI)
- The Global Fund to fight AIDS, Tuberculosis and Malaria (Global Fund)
- The Nickel Institute
- World Business Council for Sustainable Development (WBCSD)
- World Economic Forum (WEF)

### Regional

- Brazil-Canada CEOs Forum
- Brazil-USA CEOs Forum
- BRICs Business Council
- European Association of Metals (Eurometaux)
- European Steel Association (Eurofer)
- Latin American Iron and Steel Institute (Ilaifa)

## National

- Brazilian Association of Science (ABC)
- Brazilian Association of Infrastructure and Base Industries (ABDIB)
- Private Port Terminals Association (ATP)
- Brazilian Business Council for Sustainable Development (CEBDS)
- Brazil-China Business Council (CEBC)
- Brazilian Foreign Trade Association (AEB)
- Brazilian Mining Institute (IBRAM)
- Brazilian Rail Transport Association (ANTF)
- Brazilian Study Centre for International Relations (CEBRI)
- Ethos Institute for Business and Social Responsibility
- Global Compact Brazilian Committee (CBPG)
- National Confederation of Industry (CNI)
- NSW Minerals Council
- Queensland Resource Council
- The Mining Association of Canada (MAC)

## Recognition and Awards P12.10

### Corporate Sustainability Index of the São Paulo Stock Exchange

We were listed for the fifth consecutive year on the ISE/BOVESPA, effective in 2015.

### CDP Climate Change Program

We presented the second highest transparency score in the evaluation of a CDP questionnaire taken by Latin American companies, and we were included for the fifth time on the CDLI (Climate Disclosure Leadership Index).

### Brazilian GHG Protocol Program

Our inventory of greenhouse gas (GHG) emissions has received the program's Gold Seal for the fifth consecutive year.

### Carbon Efficient Index (ICO2)

We participated in the Carbon Efficient Index (ICO2), developed by the São Paulo Stock Exchange (Bovespa) and the Brazilian National Development Bank (BNDES).

### Época Green Company Award

We were among the 22 award-winning companies in the "Green Innovation" category. The company was nominated for its industrial sieve initiative in Carajás (Pará), which separates impurities without wasting water and reduces the amount of waste.

### 16<sup>th</sup> Excellence Award for the Brazilian Mining and Metallurgical Industry

We were recognized for our quality and efficiency in finding mining solutions at the 16<sup>th</sup> edition of this awards ceremony, promoted by *Minérios e Minerais* magazine.

### Executive of Value Award

In 2013, our CEO, Murilo Ferreira, was awarded the "Executive of Value" award in the Mining category, promoted by *Valor Econômico* newspaper, in recognition of his business and management skills.



We were listed for the fifth consecutive year on the ISE/BOVESPA, effective in 2015





### Young People's Dream Company

We were voted in fifth place in the ranking of young people's dream companies in 2014. The survey, conducted by Cia de Talentos in partnership with Nextview People, received over 51,000 responses from young people between the ages of 17 and 26.

### The Most Admired Companies in Brazil

We were voted in eighth place in the ranking of "The Most Admired Companies in Brazil", promoted by *Carta Capital* magazine.

### Company with the Best Reputation in the Country

We were voted in sixth place in the ranking of companies with the best reputation in Brazil, published by *Exame* magazine. Our CEO was quoted as the ninth most admired leader of Brazil.

### Brazil's Most Sustainable Companies

According to the 2014 *Exame* Guide to Sustainability, we were among the 61 most sustainable companies in Brazil.

### Environmental Innovation

The Fundo Vale won the 10<sup>th</sup> Brazilian Environmental Award, promoted by the American Chamber of Commerce of Rio de Janeiro (AMCHAM), in the category of Environmental Innovation.

### Humanities

The Fundo Vale received the von Martius Sustainability Award from the Brazil-Germany Chamber of Commerce in the Humanities category.

### Best Sustainable Partner

Vale was recognized in the 5<sup>th</sup> edition of the Hugo Werneck Award in Sustainability & Love of Nature from *Revista Ecológico* magazine from Minas Gerais State, in the category of Best Sustainable Partner.

## Legal compliance

In 2014, we registered 306 relevant<sup>12</sup> processes, 119 of which were judicial and 187 administrative. During this period, Vale did not suffer any non-monetary sanctions and did not have to pay any fines.<sup>13</sup> **SO8**

### Civil

In 2014, Rio Tinto filed a lawsuit against Vale, BSGR and other companies with the United States District Court for the Southern District of New York, alleging a violation of federal legislation (Racketeer Influenced and Corrupt Organizations – RICO) relating to the loss by Rio Tinto of determined mining rights in Simandou, the transfer of these rights to BSGR and the investment made by Vale in VBG. We vehemently defended our case, as we believe that this lawsuit is unjustified.

There are 69 ongoing processes involving Vale, without any defined economic value, that contest the legality of our privatization in 1997, all of which are still awaiting a final decision. In our opinion, these actions should not affect the result of the privatization process or have any negative effect on the company.

### Regulatory

In 2012, in the case pleading the annulment of the authorization that concedes Vale and other companies the right to operate in the coal and steel terminals in Praia Mole, in the state of Espírito Santo, the 2<sup>nd</sup> Regional Federal Tribunal (TRF) ruled in Vale's favour. We are still awaiting the final decision, as special and extraordinary appeals have been filed.

## Tax

We discussed the levy of Corporate Income Tax (IRPJ) and Social Contribution on Net Income (CSLL) in relation to profits earned by affiliated and controlled companies overseas for the periods 1996 to 2002 and 2013.

The company also contests the levy of State Goods and Services Tax (ICMS) by the state of Pará and related charges based on the calculation for ICMS, relating to the transfer of iron ore to Maranhão.

From 2014, ICMS charges supposedly due for the interstate transport of iron ore through the state of Minas Gerais became relevant, and this is being resolved through two administrative processes.

We also contest the requirements for Financial Compensation for the Exploration of Mineral Resources (CFEM) in a range of administrative and judicial processes, concerning differences in the interpretation of the applicable legislation, as is the case for Social Integration Program (PIS) and the Contribution for the Financing of Social Security (COFINS) charges and the applicable fines.

<sup>12</sup> Legal proceedings are considered relevant based on at least one of the following criteria: a) their value, including compensation claims and fines over US\$2.15 million; b) if they involve a subject of interest to the company or affect the general public, regardless of value; c) cases where activities are paralysed. The total number of relevant processes does not include one administrative process that was concluded in January 2015.

<sup>13</sup> Vale reports existing lawsuits that meet the relevant criteria and reports the values payable only when a certain quantity is recognized as due or already paid. This enables us to meet the scope of GRI indicators **EN28** and **SO8** and to avoid any distortions in relation to the reality of administrative and judicial processes that are still awaiting a final decision and do not have defined or precise monetary values. In any case, an estimate of predicted values is provided in Report 20-F, according to accounting criteria.

## Labour

Judicial discussions are taking place in Brazil on the payment of the Guarantee Fund for Length of Service (FGTS), requested by the union, for certain parts of payroll from 1999 to 2003.

Discussions are also taking place on fatal accidents that occurred during working hours; working conditions (rest periods/temperature) at the Taquari-Vassouras potassium mine (Sergipe); outsourcing of fire planning activities, detonation, wheel loader and drilling operations and monitoring of tailings dams at mines in the state of Minas Gerais, which were questioned by the Public Ministry of Labour; and commuting times in Carajás, disputed in a public-interest civil action files by the Public Ministry of Labour. In this process we entered into an agreement that is still at the compliance phase.

In another judicial case in Australia, Integra Coal operations and the administration of Glennies Creek Coal are being sued for the death of an employee at the Integra mine in 2009. An official investigation (Coronial Inquest) was carried out in November 2012, during which no evidence was found against Integra Coal operations or the Glennies Creek Coal management. The hearings took place in 2013, however the validity of these accusations was contested by the companies. The case is currently in a phase of analysis and the final decision is expected in 2015.

## Unfair competition

In September 2014 the Administrative Council for Economic Defense (CADE) filed administrative processes investigating possible anticompetitive conduct in relation to logistics business involving Companhia Portuária da Baía de Sepetiba (CPBS), one of our subsidiary companies. **S07**

## Action Plan on Sustainability (PAS)

Our variable remuneration program ties our economic and financial performance to operational excellence and sustainability, both linked to themes that seek our continuous improvement. These indicators focus on the environment, and from 2014 will also incorporate social questions at our operational sites. Our environmental indicators include water, waste, emissions, direct and indirect energy and the recuperation of degraded areas (RAD). Our social indicators include the issues dealt with in our integrated management model for demands (more information can be found on this in the Relationship with People section). The table on the next page shows the targets and results achieved in 2014.

The results were classified considering a scale of 0 to 125 (substituting the previous 0 to 5 scale), as follows:

- **Target reached:** corresponds to results equal to or above 100 points;
- **Target partially reached:** corresponds to results equal to or above 50 points (up to the limit stated above). For our nickel business, the target for the generation of waste at our North Atlantic site was partially realized due to the implantation of a new model for waste disposal. Local demand for water impacted the target for water use at the Asia Pacific site.
- **Target not reached:** corresponds to results below 50 points. The water use target for our North Atlantic nickel site was not fully achieved due to equipment procurement and installation delays.



Find out more about our partnerships in the **Relationship with People chapter**.



Our variable remuneration program ties our economic and financial performance to operational excellence and sustainability

Business area	Indicators	Metric	2014 results	2014 Target (average variation in relation to 2013)	Business scope
Iron ore and Pellets	EN3 – Direct energy consumption	L Diesel/t moved	■	3% increase at one site	16.7%
	EN4 – Indirect energy consumption	kWh/t produced	■	10% reduction at two sites	33.3%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /ton of pellets produced	■	33% increase at one site	16.7%
	EN10 – Recycled and reused water	%	■	4% increase at four sites	66.7%
	EN20 – NOx, SOx and other significant air emissions by type and weight	Kg/Ton	■	New indicator for one site	16.7%
	EN22 – Total weight of waste	Ton/Mton moved	■	14% reduction at two sites	33.3%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
	RAD – Recovery of Degraded Areas	%	■	Maintenance of target (100% achievement of RAD) plan at three sites	50.0%
Copper	EN3 – Direct energy consumption	L Diesel/t moved	■	8% reduction at one site	50.0%
	EN4 – Indirect energy consumption	kWh/t feed	■	Maintenance of target at one site	50.0%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /ton feed	■	32% reduction at one site	50.0%
	EN22 – Total weight of waste	Ton/Mton moved	■	37% reduction at one site	50.0%
	Iniciativas Sociais Relevantes	% of actions concluded	■	First year of implementation of the PAS	50.0%
	Qualitative plan – Energy	Milestones	■	First year of implementation of the PAS	50.0%
	Qualitative plan – Environment	Milestones	■	First year of implementation of the PAS	50.0%
Manganese	EN3 – Direct energy consumption	L Diesel/t moved	■	New indicator for one site	100.0%
	EN4 – Indirect energy consumption	points	■	New indicator for one site	100.0%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /ton produced	■	1% increase at one site	100.0%
	EN10 – Recycled and reused water	%	■	New indicator for one site	100.0%

Key	Quantity	Percentage
■ Challenge reached (=125)	44	67
■ Target reached (>=100)	19	29
■ Target partially reached (>=50)	2	3
■ Target not reached (<50)	1	2
<b>Total</b>	<b>66</b>	<b>100</b>

Business area	Indicators	Metric	2014 results	2014 Target (average variation in relation to 2013)	Business scope
Nickel	EN3 – Direct energy consumption	L Diesel/MWh	■	New indicator for two sites	66.7%
	EN4 – Indirect energy consumption	kWh/t nickel	■	New indicator for one site	33.3%
	EN8 – Total water withdrawal by source	%	■	New indicator for one site	33.3%
	EN13 – Habitats protected or restored	acres	■	New indicator for one site	33.3%
	EN21 – Total water discharge by quality and destination	Kg	■	New indicator for one site	33.3%
	EN22 – Total weight of waste	Tons	■	New indicator for one site	100.0%
	MM3 – Total amounts of overburden, rock, tailings, and sludges and their associated risks	%	■	New indicator for one site	33.3%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
	Qualitative plan – Energy	Milestones	■	New indicator for two sites	66.7%
	EN21 – Total water discharge by quality and destination	%	■	First year of implementation of the PAS	100.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
	Qualitative plan – Energy	Milestones	■	First year of implementation of the PAS	100.0%
	Qualitative plan – Environment	Milestones	■	First year of implementation of the PAS	100.0%
	EN3 – Direct energy consumption	GJ/Tons Ni produced	■	Maintenance of target at one site	50.0%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /Tons Ni produced	■	15% reduction at one site	50.0%
	EN20 – NOx, SOx and other significant air emissions by type and weight	Tons SO <sub>2</sub> /Tons Ni	■	14% reduction at one site	50.0%
	EN22 – Total weight of waste	Tons	■	6% increase at one site	50.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
Coal	Qualitative plan – Energy	Milestones	■	New indicator for one site	50.0%
	EN3 – Direct energy consumption	L Diesel/t moved	■	New evaluation metric	50.0%
	EN4 – Indirect energy consumption	KWh/t moved	■	New evaluation metric	50.0%
	EN16 – Total direct greenhouse gas emissions by weight	t CO <sub>2</sub> -e/Tonnes Moved (ROM kt)	■	New indicator for one site	50.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	50.0%
	Qualitative plan – Energy	Milestones	■	Qualitative evaluation	50.0%
	Qualitative plan – Environment	Milestones	■	First year of implementation of the PAS	50.0%



Business area	Indicators	Metric	2014 results	2014 Target (average variation in relation to 2013)	Business scope
Fertilizers	EN3 – Direct energy consumption	various	■	2% reduction at four sites	100.0%
	EN4 – Indirect energy consumption	KWh/t produced	■	6% reduction at four sites	100.0%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /ton	■	7% reduction at two sites	50.0%
	EN22 – Total weight of waste	Ton of waste/Ton produced	■	14% reduction at one site	25.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
Logistics	EN3 – Direct energy consumption	L Diesel/hours worked	■	New indicator for one site	33.3%
	EN4 – Indirect energy consumption	kWh/t	■	New indicator for two sites	66.7%
	EN8 – Total water withdrawal by source	m <sup>3</sup> /Kton moved	■	47% reduction at one site	33.3%
	EN10 – Recycled and reused water	%	■	40% increase at one site	33.3%
	EN20 – NOx, SOx and other significant air emissions by type and weight	%	■	New indicator for one site	33.3%
	EN22 – Total weight of waste	t/Mt moved	■	14% reduction at three sites	100.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
	EN3 – Direct energy consumption	L/K TKB	■	New indicator for two sites	100.0%
	EN8 – Total water withdrawal by source	m <sup>3</sup>	■	New evaluation metric	100.0%
	EN22 – Total weight of waste	Ton	■	New evaluation metric	100.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
	Management of ballast water (NORMAM 20)	%	■	13% increase at one site	100.0%
	Ship Energy Efficiency Management Plan (SEEMP)	Milestones	■	Qualitative evaluation	100.0%
	EN3 – Direct energy consumption	L Diesel /TKB	■	First year of implementation of the PAS	100.0%
	EN22 – Total weight of waste	Kg/1000 TKB	■	New indicator for one site	100.0%
	Relevant Social Initiatives	% of actions concluded	■	First year of implementation of the PAS	100.0%
General Services	EN22 – Total weight of waste – disposal	%	■	9% increase at one site	100.0%

- World Economy
- Regulatory Changes
- Environmental Licensing

# Business Perspectives

# The year 2014 was marked by a strong performance in our operations, despite the challenges caused by the decline in the price of commodities

## World economy

In the first decade of the new millennium, the Chinese economy became one of the main engines of global economic growth, leading to a strong rise in demand for mineral commodities. This culminated in higher international prices and subsequently in a greater incentive to increase production due to the increased profitability of projects. In recent years, the mining industry has experienced intense volatility. The renewal of a Chinese economic model, based on investment and exports, to a version with increased participation of the service sector and expanding consumption, has significantly contributed to lower rates of global growth. The biggest change took place in the real estate sector, which together with the infrastructure sectors, represents almost 60% of China's steel consumption. Civil construction slowed its investments after years of expansion driven by the private real estate market, an increase in family incomes and government incentives. The adjustments in the real estate sector are part of a change in the economic policy adopted by the Chinese

government, which intends to gradually develop its service sector and internal consumption and no longer wants to stimulate sectors with very high investments as it has done in the past.

The year 2014 had a series of challenges and uncertainties, primarily related to the sudden drop in the price of mineral commodities, which for iron ore was 47%, due to the deceleration in global growth alongside the over-supply of these commodities on the market. These factors have created a new paradigm in the industry, causing companies to enter into a period of structural change in order to increase productivity, manage costs and create value for investors.

In this new scenario, our company is directing its business strategy towards world-class assets and projects characterized by low costs, abundant reserves, large scales and a greater capacity to pass through the volatility of economic cycles.

# 119.7Mt

This was the record production recorded for the year at Carajás. This was one of many achievements, such as record productions in iron ore, copper and gold, and our highest nickel production since 2008

We seek to use our asset base more efficiently, with a simpler operational model and a leaner structure. In addition, we want to achieve excellence in the delivery of our projects, reducing deployment costs and deadlines without compromising the safety of our employees and with respect and transparency in our relationships with interested parties while adopting sustainable practices throughout our value chain.

### Added value R\$12.8

The year of 2014 was marked by a solid performance in our operations, despite the challenges imposed by the declining price of commodities. We achieved record production levels for iron ore, copper and gold, and recorded our best annual nickel production since 2008. We registered record production at Carajás of 119.7 Mt, and our total iron ore production was 331.6 Mt.<sup>1</sup> We produced 379,700 tons of copper, with the ramp-up of the Salobo mine, which produced 98,000 tons. Gold production totalled 321,000 oz and nickel production was 275,000 tons.

At the same time, we reduced expenses along the year by US\$1.2 billion<sup>2</sup> thanks to our employees' hard work in maintaining our competitiveness in the mining industry, through efficiency and austerity. Expenses related to sales, general and administrative (SG&A), without depreciation, presented a reduction of 21.1% (US\$234 million) compared to 2013. An even bigger reduction of 45.9% (US\$747 million) was registered for pre-operational and downtime expenses (also without depreciation), which went from US\$1.628 billion in 2013 to US\$881 million.

We completed eight capital projects (Tubarão VIII, Serra Leste, the distribution center in Malaysia, Vargem Grande, the 5<sup>th</sup> line of Brucutu, Salobo II, Nacala and Long Harbour), most of these on time and within budget. The Teluk Rubiah Maritime Terminal in Lumut, Malaysia, went into operation in November with the capacity to receive and export 30 million tons of iron ore per year. In Canada, we commemorated our first production of nickel at

the new hydrometallurgical plant in Long Harbour, inaugurated with a production capacity of 50,000 metric tons of nickel per year, as well as copper and cobalt. Another achievement was our record annual production of 19,000 tons of nickel in New Caledonia, 3,000 tons more than in 2013.

Also in 2014, we reduced our investments by US\$2.254 billion, negotiated a strategic partnership for our coal business in Mozambique and paid out US\$4.2 billion in dividends, while preserving a healthy capital structure.

<sup>1</sup> Not including production at Samarco.

<sup>2</sup> Not including depreciation, amortization or the one-off effect of the Goldstream transaction, with a value of US\$244 million.



Alessandro Albert

1.2  
billion dollars was  
our reduction in  
expenditure for  
the year, achieved  
thanks to the  
efforts of our employees



Marcelo Coelho

Our base net profit, excluding non-recurring items, was US\$4.419 billion, and operational cash flow measured using adjusted EBITDA, also excluding non-recurring items, reached US\$13.353 billion, a reduction in 40.8% compared to US\$22.560 billion in 2013, mainly due to the lower price of commodities, which negatively impacted adjusted EBITDA by US\$10.580 billion. A highlight in this area was the performance of Base Metals, which presented a significant reduction in operational costs and generated an adjusted EBITDA of US\$2.521 billion over the year, 53.8% higher than in 2013. Adjusted EBITDA for fertilizers increased to US\$278 million in 2014 (in 2013 this value was -US\$54 million).

We have paved the way towards generating a strong cash flow. As well as concluding the eight capital projects, we received licences to expand our N4WS mine in Carajás, which is supporting our iron ore production plan for 2015 and 2016. In addition, we entered an investment agreement with Mitsui, which will acquire 15% of our participation of Vale Mozambique (the Moatize mine) and 50% of our stake of the Nacala Logistical Corridor, with an estimated impact of US\$3.7 billion through the reduction of our direct investment into projects and increased cash flow. We also extended our PTVI operational licence until 2045.

We concluded eight capital projects most of them on schedule and under budget

## Generated and distributed value

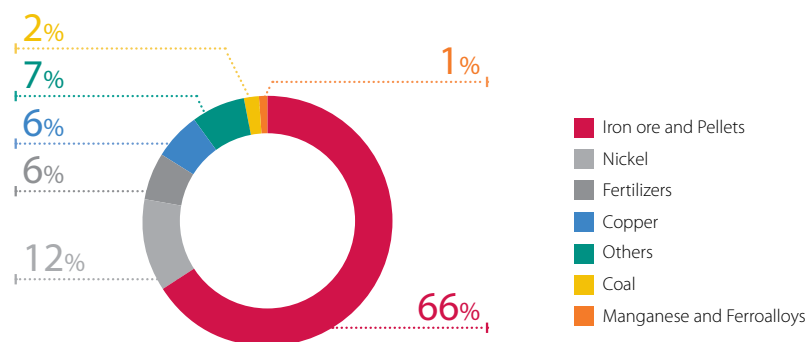
US\$ million **EC1, PI 2.8**

	Brazil	South America except Brazil	Canada	North America except Canada	Australasia	Europe	Africa	Middle East	Total
<b>Direct economic value generated</b>									
Sales revenues	33,193	314	4,461	220	1,852	110	374	0	<b>40,524</b>
<b>Economic value distributed</b>									
Operational costs	16,763	279	3,858	16	2,103	4	690	320	<b>24,033</b>
Employee salaries and benefits	2,730	37	959	4	418	31	26	49	<b>4,254</b>
Research and Development	540	20	72	1	92	0	9	0	<b>734</b>
Payments to capital providers	8,300	0	0	810	0	0	0		<b>9,110</b>
Payments to the government	4,028	75	(361)		143	(237)	(13)		<b>3,635</b>
Resources invested in communities	233	2	10	0	5	0	19	1	<b>270</b>
<b>Total</b>	<b>32,594</b>	<b>413</b>	<b>4,538</b>	<b>831</b>	<b>2,761</b>	<b>(202)</b>	<b>731</b>	<b>370</b>	<b>42,036</b>
Economic value generated minus economic value distributed	599	(99)	(77)	(611)	(909)	312	(357)	(370)	<b>(1,512)</b>

Here the IFRS accounting standard with some adjustments was used, as established by GRI methodology. As well as gross operational revenues, the revenues in the table include financial results and those resulting from the sale of assets.

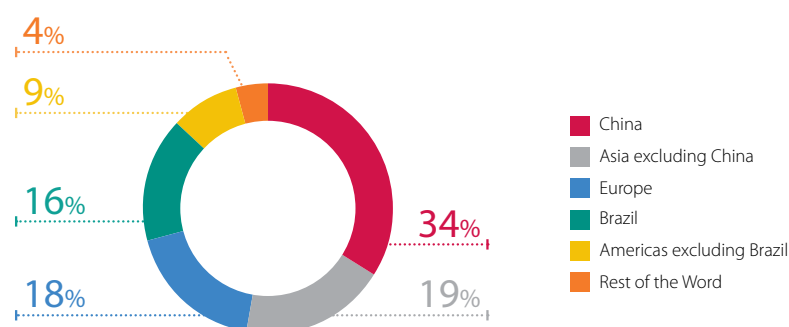
### Net revenue by product

US\$37.5 billion



### Net revenue by destination

US\$37.5 billion



### Volume of production in thousand metric tons (unless indicated otherwise)

	2013	2014
Iron ore	310,392 <sup>I</sup>	331,556 <sup>I</sup>
Pellets	49,558 <sup>II</sup>	55,020 <sup>II</sup>
Manganese ore	2,378	2,352
Ferroalloys	176	171
Metallurgical coal	6,885	6,442
Thermal coal	1,878	2,202
Nickel	260	275
Copper	370	380
Cobalt (tons)	3,532	3,743
Platinum (thousand troy ounces)	145	182
Palladium (thousand troy ounces)	352	398
Gold (thousand troy ounces)	286	321
Potassium	492	492

<sup>I</sup>. Including the purchase of ore from third parties and excluding production at Samarco.

<sup>II</sup>. Including the production at Samarco attributed to Vale, of 50%.




The performance of Base Metals presented a significant reduction in operational costs and an adjusted EBITDA of US\$2.521 billion





Most of our investments in ferrous metals are related to growth incentives in our iron ore business



Phosphates	2013	2014
Phosphate rock	8,277	8,421
Monoammonium phosphate (MAP)	1,128	1,065
Triple superphosphate (TSP)	905	910
Simple superphosphate (SSP)	2,102	1,854
Dicalcium phosphate (DCP)	444	502

Nitrogenous	2013	2014
Ammonia	347	178
Urea	219	-
Nitric acid	416	469
Ammonium nitrate	419	485

### Investments

In 2014, our investments (growth and maintenance) totalled US\$11.979 billion, with a reduction of US\$2.254 billion<sup>3</sup> in relation to 2013. This is mainly due to the completion of projects along the year, as well as the optimization of the scope, efficiency and execution of projects, as well as the exchange rate.

Most of our investments in ferrous metals are related to growth incentives in our iron ore business, specifically the expansion of Carajás and its related infrastructure, the Itabirito project and our global distribution network, with emphasis on the distribution centre in Malaysia. We have also invested in the Moatize II project and its associated logistics (the Nacala Corridor).

We have optimized and reduced our capital investment plan for 2015 to US\$10.2 billion, maintaining discipline in the allocation of capital and focusing just on world-class projects. The coming years will demand a lot of discipline in terms of investment in order to conclude Moatize II in Mozambique in 2015 and the S11D project in Pará in 2016.

<sup>3</sup> Including a US\$602 million investment in VLI in 2013.

### Investments by type

US\$ billion

	2013	2014	2015 <sup>1</sup>
Execution of Projects	9.6	7.9	6.4
Maintenance of Operations	4.6	4	3.8
Total	14.2	11.9	10.2

<sup>1</sup> Investment budget.

# Our impacts, both positive and negative, are managed from the planning to the closure stage of our projects

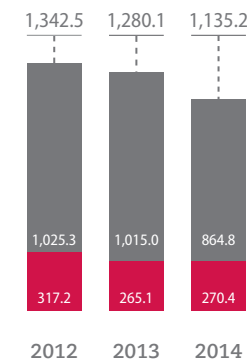
Over the coming year, we will intensify the simplification of our corporate structure and continue with our cost cutting measures, while at the same time accelerating divestments and partnerships, creating value and building the foundations to generate an even more solid cash flow from 2017 onward through a project portfolio containing world-class assets and the potential to generate returns on invested capital.

## Environmental expenditure EC8, EN30

We manage our positive and negative impacts from the planning to the closure stage of our projects, including during implementation, operation and decommissioning steps (more information can be found in the Relationship with People and Relationship with the Environment and Climate Change sections). Our commitment to sustainability

is reflected in our investment of US\$1.135 billion in this area, 16.4% higher than the forecast value (US\$975 million). Of this total, US\$864.8 million has been earmarked for environmental protection and conservation (37% of this being voluntary and 63% due to legal requirements) and US\$270.4 million is destined for social projects (58% voluntary and 42% required). In Brazil, were applied 74% of environmental expenditures and 86% of social.

## Social and environmental expenditure US\$ million



	2012	2013	2014
■ Environmental	1,025.3	1,015.0	864.8
■ Social	317.2	265.1	270.4
Total	1,342.5	1,280.1	1,135.2

Type of environmental expenditure US\$ million	Value	%
Dams, dikes and tailings piles	314.8	36.4%
Other categories	107.5	12.4%
Waste	87.5	10.1%
Water resources	76.4	8.8%
Atmospheric emissions	74.8	8.6%
Environmental management	66.8	7.7%
Recovery of degraded areas	31.9	3.7%
Programs and requirements	25.8	3.0%
Remediation of contaminated areas	18.7	2.2%
Dangerous products	14.4	1.7%
Demobilization and mine closure	12.2	1.4%
Environmental studies	11.2	1.3%
Support for environmental incidents	7.5	0.9%
Environmental studies and environmental licensing processes	4.0	0.5%
Biodiversity management	3.6	0.4%
Climate change and greenhouse gases (GHGs)	2.0	0.2%
Compensatory measures	1.4	0.2%
Preparation for responses to environmental emergencies	1.2	0.1%
New environmental technologies	1.0	0.1%
Environmental training	0.8	0.1%
Management and sustainability index	0.7	0.1%
Noise and vibration	0.6	0.1%
Environmental compensation	0.1	0.0%
Contaminated areas	0.0	0.0%
<b>Total</b>	<b>864.8</b>	<b>100%</b>

Type of social expenditure (US\$ million)	Value	%
Human <sup>I</sup> and Economic Development	102.6	38.0%
Impact Management <sup>II</sup>	62.4	23.0%
Infrastructure	50.6	19.0%
Sponsorship <sup>III</sup>	31.5	12.0%
Donations to the Vale Foundation	23.1	9.0%
Socio-economic Diagnostic/PGIS	0.2	0.0%
<b>Total</b>	<b>270.4</b>	<b>100.0%</b>

<sup>I</sup>. Human development, according to the United Nations Development Programme (UNDP), places people at the center of development, promotes human potential, increases their opportunities and helps them to enjoy the freedom to live the lives that they value.

<sup>II</sup>. Impact management: mitigation or corrective actions to significantly reduce the effect of impacts generated as a result of Vale's presence. Such actions should promote sustainable solutions for any arising issues.

<sup>III</sup>. Sponsorship: initiative to strengthen Vale's institutional image that is strategically coordinated by pre-established corporate guidelines. Through sponsorship, resources, goods and services are transferred exclusively to corporations for the viability of a particular project that must use the Vale brand and define compensation aligned with the strategic goals of our company.

# 16.4%

The percentage increase in investments in environmental protection and conservation and social projects compared to the target defined for the year

## Regulatory changes

Mining is an activity that requires governmental concession, and is therefore subject to specific regulation. In June 2013, the Brazilian government sent to the National Congress bill No. 5.807/2013, proposing some alterations to Decree Law No. 227, of 28 February, 1967 (current mining legislation). The bill currently in discussion in the Chamber of Deputies provides for mining activities and establishes the National Council for Mining Policy and the National Mining Agency (ANM), including other measures. More information on regulatory issues is provided in Report 20-F.

## Environmental licensing

Both the installation of new operations and the expansion of our units are subject to environmental licensing – the process by which the socioenvironmental impacts of our projects and proposals are identified and necessary control measures are aligned with the applicable legislation (more information can be found on biophysical impacts in the following chart, and on socio-economic impacts in the Relationship with People section). In addition to meeting legal requirements, the licensing phase is an opportunity to reaffirm our commitment to developing increasingly sustainable projects, with socioenvironmental impacts being measured during all phases (planning, implementation, operation and closure) and with the proposal of appropriate measures for mitigation, compensation and monitoring. When reaching the closure stage, we progress with our mine closure plans, which are developed in line with international standards (more information on this subject can be found in the **Relationship with People section**).

As legislation varies according to country or state, the environmental licensing process requires prior knowledge of both the applicable legislation and the territories of interest. We have management tools and technical guidelines to guide this process, such as our Guide to Best Practices – Environmental Licensing and the Environment, available for Brazil, Canada, Mozambique and Peru; our Community Relationship Guidelines; our Community Relations Guide for Capital projects; our Environmental Education Program Guide and our Operational Licensing Methodology.

The guidelines and tools we have developed together with specialists encourage the adequate management of the licensing process with the institutions involved, which is essential for the proper planning of projects and therefore for production plans and the development of new business. In addition to environmental licences issued by environmental agencies, there are various types of authorization, permits and consents that must be observed and which vary according to the legislation in force.

We are adopting internal actions to provide a single working interface in order to establish clearer and more transparent communication with regulatory authorities. As a result of these actions, we obtained licenses in 2014, among others, which allowed us to expand and continue our operational activities at the N4 and N5 mines in Carajás, which represents progress in our project to increase iron ore production.



Find out more about socioeconomic impact in the **Relationship with People section**

# N4, N5

Mines whose environmental licenses represent progress in our project to increase iron ore production

# Potential biophysical impacts PI1.2

- Change in the air quality
- Change in sound pressure and vibration levels
- Soil loss
- Change in surface and underground water dynamics
- Reduction in water availability (surface and underground)
- Alteration in the water quality (surface and underground)
- Suppression of natural underground cavities
- Modification of land relief
- Modification of the landscape
- Habitat loss in mine operation areas
- Fragmentation of ecosystems
- Depopulation of terrestrial and aquatic fauna communities
- Elimination of plant specimens and population reduction
- Reduction of plant biomass
- Acceleration of soil erosion and sedimentation of water bodies
- Change in the properties of the soil
- Reduction in the potential for agricultural production
- Increased availability of groundwater (dewatering)
- Fragmentation and edge effect
- Scaring away fauna
- Modification of biota communities
- Changes in the physiological functions of plants
- Loss of fauna's habitats outside mining areas
- Increased occurrence in fauna run over
- Increased pressure on the illegal hunting and collection of fauna
- Increased incidence of animal-borne disease
- Loss in fauna richness and diversity and population reductions

# Relationship with People

- Life Matters Most
- Employee Engagement
- Territorial Development
- Community Relations



## Life Matters Most

To ensure zero harm we have invested continuously in our most precious asset: people. "Take care of our people" is one of our five strategic pillars and "Life matters most" is one of our values. Through the dissemination of concepts and practices and the application of innovative solutions aimed at preventing injuries and illnesses, our performance and culture in health and safety have evolved in recent years. Even so, we still have a long way to go to achieve zero harm, which comprises of:

- Zero lives lost;
- Zero lives changed due to illnesses or injuries;
- All incidents and illnesses reported to promote organizational learning and continuous improvement;
- Dissemination of the culture of Active Genuine Care; and
- "Life Matters Most" at work, at home and in the community.

Aligned with these guidelines, in 2014 we trained 68,000 employees and 5,800 leaders, encouraged sharing of best practices with over 500 registered and approved initiatives, and developed our health and safety strategy within the following topics:

Integration  
of the Health  
and Safety and  
Environmental  
Management  
Systems

Fatality  
prevention

Focus on Health

Health and  
Safety as part  
of business  
decisions

Active Genuine  
Care Culture

We encouraged  
best practices,  
with over 500  
registered and  
approved initiatives,  
and developed our  
health and safety  
strategy



# 68,000

employees and 5,800  
leaders were trained in  
2014 in themes related  
to health and safety



## Integration of the Health and Safety and Environmental Management Systems

Up until 2013, our Health and Safety and Environmental management systems were independent, resulting in duplicated effort, investment and time. In 2014, we started to integrate these systems in order to optimize some of the processes that had the most similarity, such as auditing, for which we created a single program. This integration resulted in simplification (a 62% reduction in the number of requirements), increased productivity, synergy and cost reductions. In addition, we trained 400 internal auditors in health and safety and environment. Our compliance to this integrated management system was 54.60%, which was above the 46.32% target set in the previous year.

### Prevention of fatalities

To eliminate fatalities is the main challenge in our journey to achieve zero harm. We continue with the implementation of prevention programs in all our units, while respecting the geographical and cultural diversity of the locations where we are present.

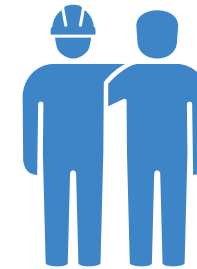
In 2014, we launched our Guide for Fatality Prevention Programs, which is a reference for the directors to implement programs in their departments or to promote the review of existing programs, reinforcing our value "Life Matters Most". The purpose is to establish requirements so that the risks of situations with potential for fatalities are actively and continuously managed, with the commitment of leaders and participation of the employees.

In addition, we reinforced the dissemination of the Critical Activities Requirements (RACs in Portuguese), a fundamental pillar of our Management System that has saved many lives.

Despite our best efforts, we recorded eight fatal incidents over the year involving employees and contractors during activities in our operations and projects:

- Incident while towing mobile equipment (one contractor in Mozambique);
- Incident while removing a blockage in a crusher (one employee in Canada);
- Incident caused by landslide (one employee in Indonesia);
- Incident during maintenance on mobile equipment (one employee in Brazil);
- Incident while manoeuvring railway wagons (one employee in Brazil);
- Incident in a vehicle parking area (one employee in Brazil);
- Incident caused by the collapse of a tunnel under construction (one contractor in Brazil);
- Incident while driving an automotive vehicle (one contractor in Mozambique). **LA7**

In all of these incidents, our immediate action was to offer support to the families, followed by analyses in order to establish corrective action plans, which are monitored through completion. To prevent recurrences, the lessons learned from incidents are discussed in forums with leaders and widely disseminated to employees and contractors. In addition, the Incident Management process was reviewed in 2014 to be applicable to all business units, with the adoption of criteria similar to those used by other world-class mining companies.



We strive for Active Genuine Care, which means caring for yourself, caring for others and letting others care for you

## Emergency response plan

We have a crisis management centre that operates in an integrated manner with operational areas to control critical situations and incidents. The goal is to strategically protect our employees and contractors, controlling damage to the company's assets. We use management systems, regulations and plans to intervene quickly and effectively, as well as train responsible teams with simulation exercises.




# 54.60%

was our compliance to our Integrated Management System along the year, which was higher than the defined target of 46.32%

## Focus on health

Focus on health, for us, means managing health in an integrated manner through three pillars. Therefore, we seek to promote an ever-increasing number of healthy people at all stages of life.

### Pillars

- **Occupational health** | encompassing occupational medicine, occupational hygiene and ergonomics. In 2014, we focused on the training of leaders and technicians in these areas.
- **Personal health** | encourages employee health outside the workplace. For this pillar, we conducted several awareness and prevention campaigns and training actions. For more information, see our table of actions dedicated to employees, family and communities.

- **Community health** | aims to prevent disease and promote health. An example of the implementation of this pillar is the operation of health clinics in Vitória, São Luís and Itabira and the Yutaka Takeda and 5 de Outubro both hospitals in Carajás. The main objective of these clinics and hospitals is to provide an alternative for local medical care within the health system and to generate a network of professionals that are loyal and integrated to our goals.

In addition to these initiatives, we have maintained the following preventive measures:

**Travel Health** | we have intensified the prevention and mitigation of risk through pre-trip risk assessment, including monitoring during and after travel. This action focuses on offering guidance on

preventive measures and vaccination requirements and classifies the potential risk of trips, which according to the risk established may not be recommended. In addition, we have an online platform that informs all employees the risks to which they are exposed on the road, thus facilitating decision-making in the event of an emergency.

**Malaria control** | we have maintained our Malaria Control Program, which systematically addresses risk in areas where this disease is endemic. This initiative is aligned with our support of the Global Fund to Fight AIDS, Tuberculosis and Malaria, supported by the United Nations (UN).

# We invested and worked towards promoting an ever-increasing number of healthy people at all stages of life

As part of our Integrated Health program, along the year we promoted actions targeted at employees, their families and the communities adjacent to our operations, while observing the needs of each region, such as providing training and preventive actions in areas of malaria, yellow fever and dengue endemics. These initiatives are presented in the table below: [LA8](#)

Theme	Action	Target Group
<ul style="list-style-type: none"> <li>• Alcohol and drugs</li> <li>• Prevention of diseases such as cancer, diabetes, HIV/AIDS and sexually transmitted diseases</li> <li>• Prevention of endemic diseases: malaria, dengue and yellow fever</li> </ul>	Education/training, risk prevention/control	Employees, families and communities
<ul style="list-style-type: none"> <li>• Occupational hazards: hearing loss and ergonomics</li> </ul>	Education/training	Employees
<ul style="list-style-type: none"> <li>• Fatigue and control of chronic diseases: diabetes, hypertension and cardiovascular risk</li> </ul>	Education/training, risk prevention/control	Employees and families
<ul style="list-style-type: none"> <li>• Health promotion and well-being</li> </ul>	Education/training, risk prevention/control	Employees and communities
<ul style="list-style-type: none"> <li>• Guidance on legal, financial and interpersonal matters, and various health issues such as the use of medications, psychosocial disorders and other diseases</li> </ul>	Counselling	Employees, families and communities
<ul style="list-style-type: none"> <li>• Creation of practices to identify, evaluate, control, prevent and minimize hazards and risks of travel-related processes and activities and their effects on health and safety, and pre-trip advice for employees sent to international operations</li> </ul>	Risk prevention/control and advice	Employees
<ul style="list-style-type: none"> <li>• Vaccination</li> </ul>	Risk prevention/control	Employees

## Engagement Actions in 2014

**Day of Reflection** | Health and safety event that brought together approximately 130,000 employees and contractors to reflect about fatalities and intensify collective efforts to achieve zero harm.

**Global Health Week** | With the theme "Balance life in health", 82,000 employees and contractors participated in actions to reinforce the importance of balancing aspects of life inside and outside the workplace, maintaining healthy habits and preventing illnesses.

**Incident Prevention Global Internal Week** | Awareness actions directed at employees and contractors about Risk Management, reinforcing the prevention, identification, analysis and control of risk in order to reduce the occurrence of undesired events.

### Health and safety as part of business decisions

The value "Life matters most" is present in all our guidelines and actions. The decisions made by our Board of Directors are based on our performance in health and safety and are deployed to our company's leaders through meetings aimed at reducing incidents and improving the quality of life of our employees.

Our health and safety performance is still evolving, as demonstrated by the decrease in the total injury rates (with and without lost workdays).<sup>1</sup>

In 2014, we started to report our medical absenteeism rate<sup>2</sup> which was 1.60 lost days for every 10 employees exposed. Of the total, 93% was due to non-occupational health problems, 3% to occupational health problems and 2% to accidents in the workplace. Our occupational illness incidence<sup>3</sup> was 0.60 new cases for each 1000 employees exposed, with 44% of these cases involving medical treatment, 44% involving lost workdays and 12% involving restricted working hours. **LA7**

In 2014, around 96% of our employees were represented by Health and Safety Committees, which in addition to contributing to the prevention of incidents and occupational illnesses, identify ways of continuously improving processes and working conditions (this percentage was 96.5% in 2013 and 89.5% in 2012).<sup>4</sup> In some countries, such as Brazil, Canada, France and New Caledonia, formal health and safety committees are a legal requirement. **LA6**

<sup>1</sup>. Our health and safety management is carried out by each operational department, and for this reason the data is not provided per region.

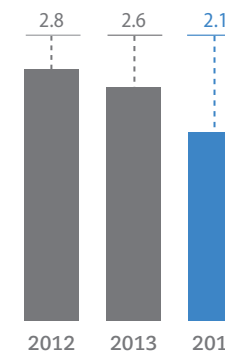
<sup>2</sup>. Our medical absenteeism rate is calculated by adding together the number of workdays lost due to commuting incidents, workdays lost due to occupational illnesses, workdays lost due to incidents and workdays lost due to non-occupational incidents, dividing by the number of exposed employees and multiplying by 10.

<sup>3</sup>. Our rate of occupational illness incidence is calculated by adding together the number of new cases of occupational illnesses involving medical treatment, restricted workdays, lost workdays and fatality, dividing this by the number exposed employees and multiplying by 1000.

<sup>4</sup>. Some units did not reach 100% representation due to factors such as: total number of employees at the unit below the legal requirement for the establishment of a committee, new projects that have still not put together health and safety committees and new contracts. Employees for this indicator (**LA6**) corresponded to 99% (2012), 100% (2013) and 96% (2014) of the total number of reported employees (**LA1**).

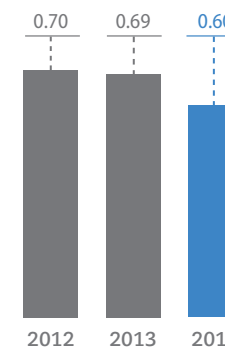
### Total injury rate

Number of total injuries/per 1,000,000 hours worked



### Lost-time injury rate

Number of lost time injuries/per 1,000,000 hours worked



The data in the chart include employees and contractors and does not include first-aid cases.

• MHW = men-hour worked

• 1 MM = 1 million

• Includes injuries with or without lost workdays. This rate does not include occupational illnesses.

For Vale in Brazil, health and safety indicators are calculated based on monthly MHW, which is estimated by the number of employees and contractors (workforce). These figures include data from mining companies, including international companies. For Vale Canada and its subsidiaries, Vale Australia and the Moatize Project, actual man-hour worked are used.



## Gains from innovation

The S11D project, at the Carajás Mining Complex (Pará) is an example of our commitment to the use of innovative operational technologies. One of these is the Truckless system, will be adopted for the transport of iron ore from the mine to the processing plant.

With this, instead of the 100 trucks that would be needed to complete the task, a structure composed of excavators and mobile crushers extracts the product and feeds it into 37 kilometres of conveyor belts, which carry the ore to the processing plant.

This substitution will reduce the amount of workers exposed to risk and increases the safety of this process as whole, since the operation of mobile equipment – including trucks – is the critical activity with the highest incidence of fatal accidents at our company.

In addition to health and safety benefits, the system will reduce solid waste, such as tyres, filters and lubricants, and will lower fuel consumption by 77%. In comparison with conventional systems, the Truckless system together with our natural moisture ore processing methodology will result in a 50% annual fall in greenhouse gas (GHG) emissions, a total of 130,000 tonnes of CO<sub>2</sub> equivalent.

### Active Genuine Care Culture

Active Genuine Care means caring for yourself, caring for others and letting others care for you. In 2014, this concept was disseminated in our engagement actions, in order to raise awareness among employees and contractors about health and safety.

We strove to construct a perception of continuous action, anchored in a culture of interdependence in which we each feel responsible for one another. We also encourage the dissemination of these practices by employees and contractors in their personal lives and in their communities.

### Employee engagement

We reaffirm our commitment to value and support the development of our employees. Through practices, processes and – fundamentally – our Human Resources Policy, we reinforce our principles of promoting meritocracy, collaboration, continuous improvement and valuing employees. We believe in the ability, potential and desire that people have for their own self-development. Engaging, developing and recognizing our workforce guarantees continuous growth, sustainable results and the achievement of our vision for the future.

The concept of engagement, disseminated at Vale in 2011, has evolved into the concept of sustainable engagement and is applied through our Global Employee Survey, a regular and transparent communication channel. Engagement is when the employee has a link with the company and wants to do their best. Sustainable engagement, however, is based on more complex

variables, such as the support that the company offers so that employees can productively and efficiently carry out their function, and physical, interpersonal and emotional well-being in the workplace, promoting continuous engagement and making it more sustainable. Recent studies carried out by the international consultancy firm Towers Watson show that, through this approach, employees are able to sustain high levels of engagement, and this increase positively impacts company results.

The year of 2014 was dedicated to the implementation of the action plans developed by managers and their teams using the results from the Global Employee Survey carried out in 2013. The objective of this activity is to address the questions where there was a low rating received from employees and to involve them in the company's process of continuous improvement. The interpretation of the results of this survey and the construction of the action plans involved both employees and high-level leaders, guaranteeing a feeling of ownership and commitment to change across all levels of the company.

We have a total of  
206,400 workers,  
including employees  
and contractors



With a significant volume of actions registered (7,300) and 83% of these having been concluded,<sup>5</sup> we focused our efforts on developing actions associated with the themes that were less favourable with employees. This reinforces the importance of the employee engagement process, seeking to transform it into results for our business.

For critical topics, we proposed structured actions across the whole company. In 2014, a multidisciplinary group was responsible for the implementation of improvements relating to collaborative work; the communication of our mission, vision, values and strategy; ethics; meritocracy and simplification.

In addition, along 2014 we carried out studies and analysis of statistical correlations between engagement and other strategic indicators, such as career and succession, retention and health and safety, proving the link between the themes and creating a new perspective for the management of people and results at Vale.

## Our profile

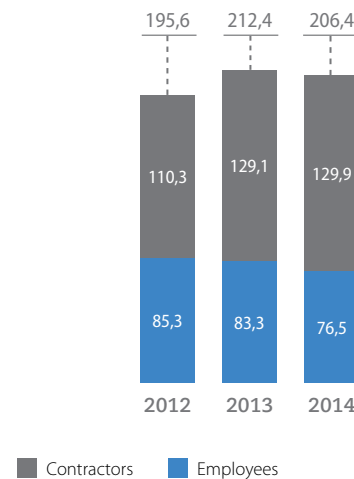
By the end of 2014, we had a total of 206,400 workers, including employees (with a permanent employment contract) and contractors (service providers for permanent activities and projects),<sup>6</sup> and 333 employees with a temporary contract.

Of the total number of employees and contractors, 77% (158,100) operate in Brazil,<sup>7</sup> mostly in the States of Minas Gerais and Pará, which together represent 68% of the Brazilian workforce. In comparison to 2013, this represents an 8.1% decrease in the number of employees, mainly due to the sale of assets.<sup>8</sup> Most of our employees (66%) are between 30 and 50 years old, 23% are below 30 and 11% are over 50.

PI2.8, LA1

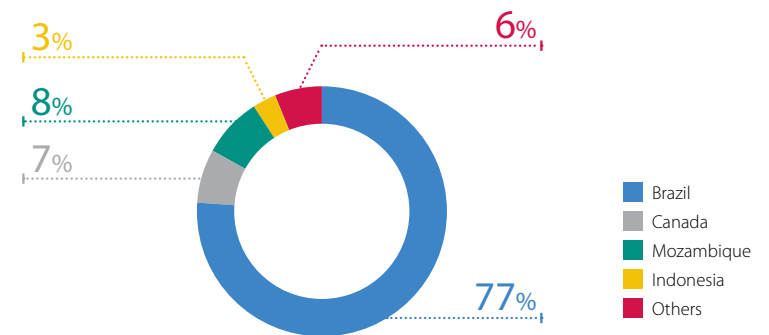
## Workforce<sup>1</sup>

in thousands



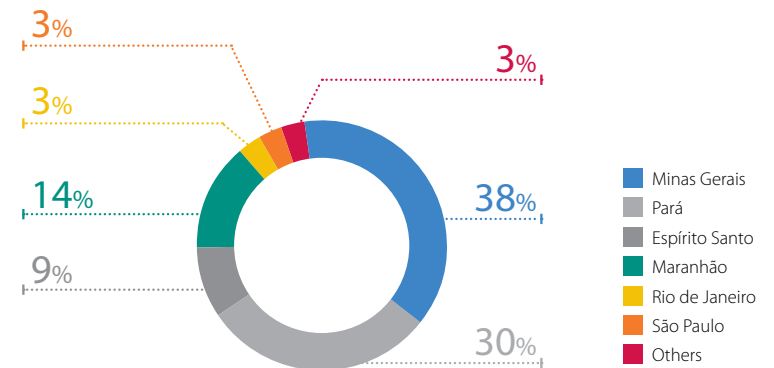
1. Employees and contractors shown in this chart account for 100% of total reported employees.

## Employees and contractors by region<sup>1</sup>



## Employees and contractors by Brazilian state<sup>1</sup>

2014



5. Data collected for up to March 2015.

6. Contractors generally working in reform, and expansion of new ventures and maintenance, cleaning and security contracts, among other types of service provision.

7. At Vale S.A. in Brazil, where 65% of our employees work, there are no part-time contracts.

8. Sale of general cargo: North-South Railway, Centre-Atlantic Railway, Vale General Cargo Logistics and Vale Port Operations.



In 2014, we reached the milestone of 15,000 technical and operational level employees included in our internal certification process



### Development and training

Faced with the challenge that we have taken on to eliminate deficits in the basic education of our operational and technical level employees in Brazil, by the end of 2014 we had 1,400 employees without a certificate of completion for elementary and high school level education. This reduction from the 3,800 employees in this same position in 2013 is a result of the completion of Educational Training Program classes that began in 2012, the organization of our employee database, our turnover rate and the sale of assets, such as Vale Integrated Logistics (VLI).

To ensure the adequate training of employees, we base our educational strategy on mapping the key processes and functions they will perform, generating training portfolios to develop the necessary skills in order to guarantee operational excellence. These are technical (operational, specialist, analyst and supervisory employees); management and leadership (leaders) and cross-cutting (health and safety, environment and diversity aimed at all employees).

We reached the milestone of 15,000 technical and operational level employees included in our internal certification process (which was initiated in 2009), with 93.5% for basic level and 6.5% for the theoretic evaluation of the technical level certification. This initiative is intended to guide training investments and enable employees to develop the competencies they need in order to carry out their functions fully and safely.

For our specialist employees, we encourage the exchange of knowledge through projects for innovation and continuous improvement in the areas of exploration, mining and logistics. In addition, we have intensified training for corporate functions in the Finance, Procurement, Information Technology and Human Resources departments, providing 1,200 places, including training to promote improvements in Human Resources in Mozambique.

In 2014, investment in education and training in Brazil, where 77% of our employees are located, was US\$25 million, a reduction of approximately US\$9.4 million compared to the previous year. The reduction in investment together with the increase in the average annual number of training hours are a result of the widening of internal training and the launch of some new online courses, in line with our strategy to educate and disseminate knowledge, recognition and valorisation of the intellectual capital of our employees.

We continued with our strategy of training employees to act as internal instructors by launching the Virtual Practice Community, where around 1,400 employees can publish texts, documents, videos and group dynamics, share experience and disseminate good practices. In 2014, around 500 educational actions were delivered.

To reinforce the concept of Active Genuine Caring, 3,100 leaders were trained. Approximately 60,000 operational technicians were trained to expand their awareness of risk in activities that are considered to be critical. In addition, we trained over 250 employees in order to strengthen the role of health and safety professionals as agents of change and catalysts of education for prevention.

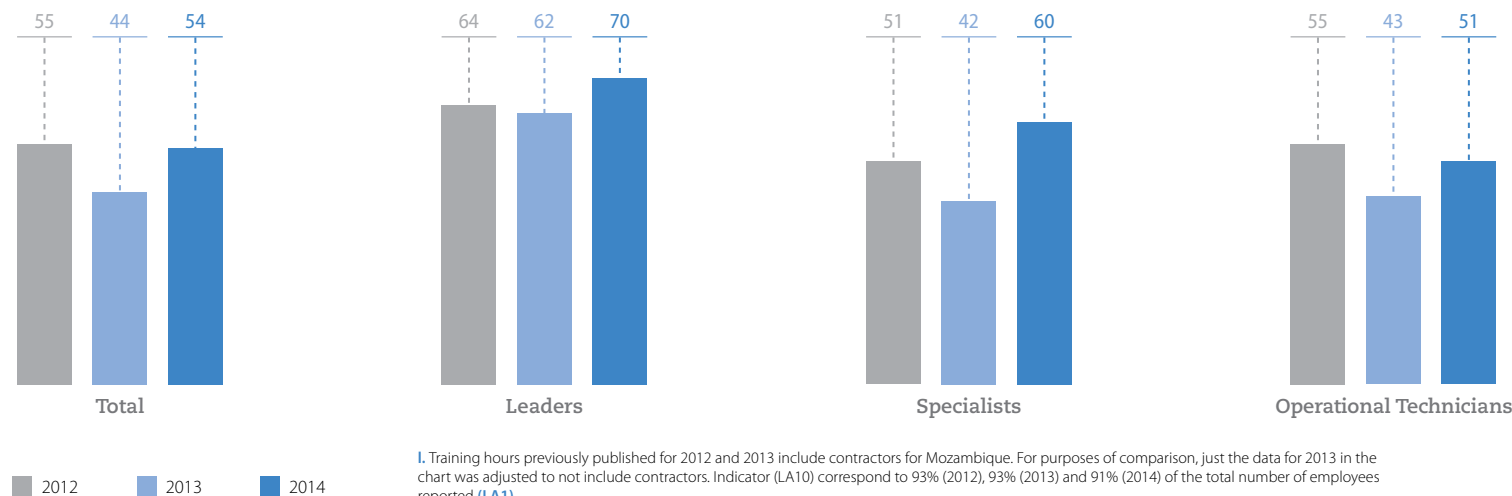
Since 2004, we have carried out initiatives to promote local workforces through our Vocational Training Programme (PFP in Portuguese), which trains young

people to develop their skills to perform functions relating to the operation and maintenance of equipment in the areas of mining, ports, railways and pelletizing. Between 2008 and 2012, over 13,000 young people participated in this initiative in Brazil, Mozambique and Malaysia. In 2014, 1,200 young people were contracted in Brazil as a result of this training. In Mozambique, around 130 young people from Mozambique were trained at our Brazilian operations as a result of this project and 30 places were offered to develop engineers and geologists on our Specialist Professional Training Program.

With these and other actions, we ended 2014 with an average of 54 training hours per employee, an increase of 23% compared to 2013, with increases in 13%, 43% and 19% for leaders, specialists and operational technician employees respectively. This result was influenced by the implementation of new forms of development, such as the use of collaborative technology platforms. **LA10**

### Training hours<sup>I</sup>

annual average



97%

of employees received performance reviews in 2014

### Remuneration

To assess whether the total remuneration offered by Vale is competitive in relation to the reality of the local market,<sup>9</sup> we conduct an annual salary survey in the regions where we operate. Good results achieved by the company are shared through our Profit Sharing Program (PLR in Portuguese),<sup>10</sup> which has Performance Evaluation as the main tool.

Each year the Board of Directors discusses and approves targets for the CEO and the Executive Directors. Targets are then set for all other employees. In addition to the individual performance of each employee, the performance of teams and the annual results of the company are also considered. The percentage of employees receiving performance reviews in 2014 was 97%.<sup>11</sup> This was the same as the percentage for 2013.

Our culture of meritocracy is also reflected in career and succession assessments, which aim to map the skill and potential of employees to guide their development and support managers in making decisions about

people, as well as identifying successors for leadership positions. From the results, employees and managers prepare together an Individual Development Plan (PDI in Portuguese) based on points for improvement, employees' career aspirations, the full performance within their current or future role and the promotion of opportunities. In 2014, 76% of our employees were involved in this process, including all operational technicians in Brazil, and we are planning to implement it in Mozambique, Oman and Malaysia in 2015. **LA12**

### Benefits

One of our guidelines is to ensure that our benefits are offered on a consistent basis in all of the different sites where the company is present, in line with the objectives of its business in each location, our human resources philosophy and corporate strategy, each country's legal requirements and local market conditions.<sup>12</sup> We offer our employees a compensation and benefits package that contributes to our strategy of attraction, retention and engagement.

100% of our employees receive medical insurance and life insurance, and most employees are offered personal accident insurance, private pensions, transportation allowances, education and training, meals at work and/or food assistance and our employee assistance program.<sup>13</sup> **LA3**

In relation to our pension plans, we recommend that a defined contribution pension plan is offered in locations where the financial market enables the management of long-term resources in a sustainable manner (more information on our pension plans can be found in Vale's 20-F Report).

<sup>9</sup>. We respect the minimum wage required in each location where we operate. **ECS**

<sup>10</sup>. Young apprentices, trainees, autonomous, temporary and outsourced employees are not eligible to participate in the program due to labour legislation and collective labour agreements.

<sup>11</sup>. Employees of this indicator (**LA12**) correspond to 100% (2012, 2013 and 2014) of the total number of employees reported (**LA1**).

<sup>12</sup>. In Canada, for casual and temporary work contracts, benefits vary according to location.

<sup>13</sup>. The Apoiar (Support) Program offers free and confidential psychological support, and financial and legal assistance to all employees and their families.

## Turnover

We have started to manage and report our turnover according to a methodology that is widely used in the market,<sup>14</sup> which is different to the methodology we used last year. In order to be able to compare information, the table below presents the turnover rate calculated according to both the previous and newly adopted methodologies.

In 2014, our general turnover rate was 8.1% – 9.6% for women and 7.8% for men – and is a reflection of our austerity policy in place as a result of the current iron ore market and the company's objective to maintain focus on world-class assets. [LA2](#)

<sup>14</sup> The turnover rate is calculated by adding together annual admissions and dismissals, dividing by two and dividing the result by the total number of employees for the previous year.

Turnover	2012 (previous methodology)	2013 (previous methodology)	2014 (previous methodology)	2014 (new methodology)
<b>General</b>	5.1%	6.6%	9.1%	8.1%
<b>By gender</b>				
Men	5%	6.3%	8.6%	7.8%
Women	5.9%	8.5%	12.5%	9.6%
<b>By age bracket</b>				
Under 30	4.4%	5.4%	8.6%	10.9%
Between 30 and 50	4.8%	2.6%	8.4%	6.6%
Over 50 years	10.1%	39.2%	14.4%	10.6%
<b>By region</b>				
Brazil	4.7%	5.9%	8.3%	7.3%
Canada	6.5%	6.2%	6.5%	6.6%
Mozambique	6.7%	11.5%	13.9%	17.6%
Indonesia	5.5%	4.2%	4.2%	3.0%



Marcelo Coelho

# 8.1%

turnover rate evaluated for the year, which was 9.6% for women and 7.8% for men. The methodology used to calculate this was adjusted to that usually adopted by the market



Jayne Russell



## Actions in Mozambique

In 2014 we adopted our Diversity and Inclusion project at our operations in Mozambique, where the workforce is increasingly diversifying. This initiative seeks to enhance employees' awareness and sensitivity in relation to various dimensions of everyday life relating to diversity. In order to do this, we conducted research-based diagnostics with the adherence of approximately 20% (438 individuals) of the workforce at the unit where we held awareness workshops with leaders and employees. Priority themes and related action plans for 2015 were debated, including social responsibility, the challenges faced by women, violence, and sexual harassment, and these were also addressed in forums and lectures.

### Diversity and inclusion

We promote an inclusive environment and respect for differences, both of which are principles included in our Code of Ethics and Conduct and of our Human Rights Policy, through which we reinforce our zero tolerance policy for discrimination of any kind, as well as moral and sexual harassment.

The results of the 2013 Global Employee Survey show that 85% of employees believe that our company's leadership supports diversity in the workplace, recognizing and valuing differences, and 89% agree that the company promotes a working environment that accepts differences between men and women.

In Brazil, initiatives relating to this theme such as the Gender Equity Project were maintained, through which we carry out awareness actions. One of these was our online Diversity and Inclusion course for leaders, which is part of our portfolio of development activities for management and leaders track and which involved approximately 2,300 employees.

We also carry out conversation circles and have adopted a mentoring program for women in Brazil, which was attended by 22 employees from our operational and administrative areas. The focus was

to provide guidance on career development and helping them to assume positions of leadership. Lasting for one year, this initiative included training and workshops discussing topics such as pregnancy and inclusion of women in a traditionally male sector.

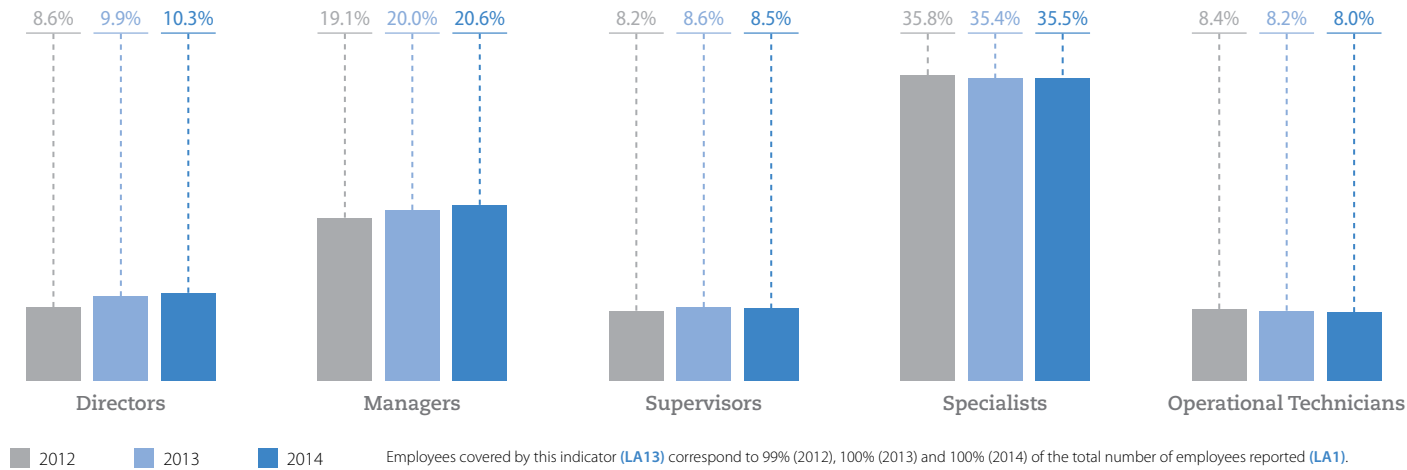
In 2014, the proportion of women out of the total number of employees was 12.9%, which was the same as that for the previous period. Of these employees, 47% held technical positions (administrative and operational), 45% held a specialization (analysts, engineers, geologists, etc.), 3% were supervisors, and 5%<sup>15</sup> were managers or coordinators as shown in the chart on [page 62](#). The Executive Board, Board of Directors and Fiscal Council are made up of 36 professionals, of which three are women. In terms of age bracket, two of the members are under the age of 40, nine are between 40 and 50 and 25 are over 50 years of age. [LA13](#), [LA14](#)

In accordance with Vale's Remuneration Policy, there is no difference in the base salary between men and women who occupy the same role. Any registered salary variations are due to employees' different levels of seniority and experience within their functional category.

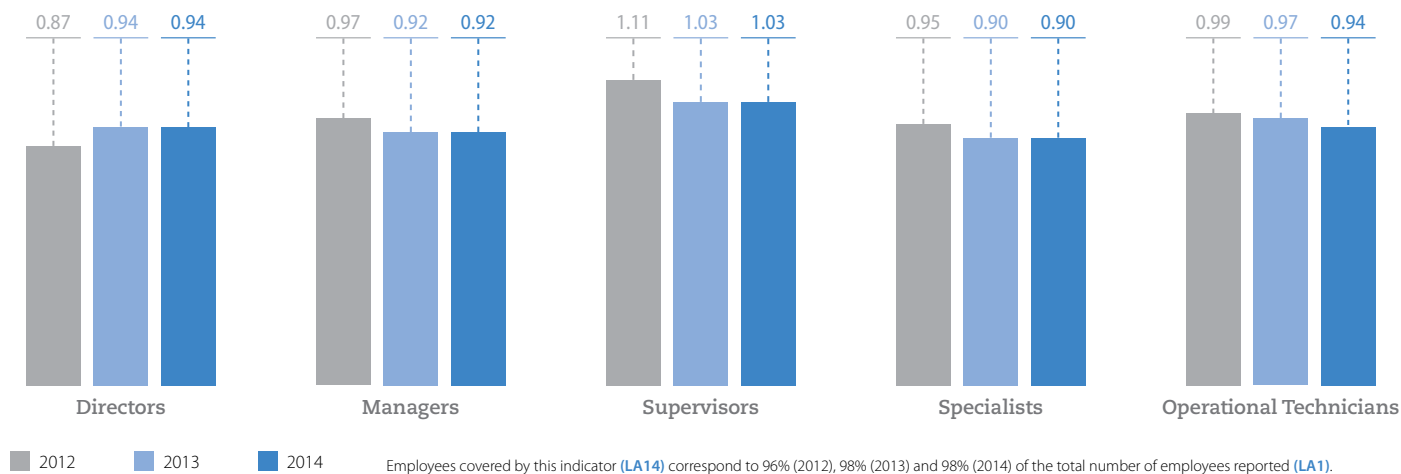
<sup>15</sup>. In 2013 the consolidated value reported (3.7%) did not consider the General Manager role, and the correct value was 4.6%.



### Proportion of women by functional category

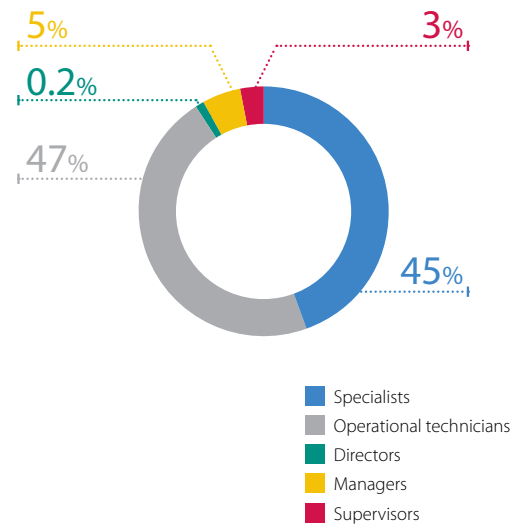


### Proportion of women's salary to men's, by functional category



We work with respect for the legislation of all of the locations where we operate and according to the guidelines of the Global Compact

### Distribution of women by functional category



We contracted  
228 people with  
disabilities in 2014

As part of our Program for Inclusion of People with Disabilities, we disseminated our Accessibility Guidelines, in accordance with Regulation 9050 of the Brazilian National Standards Organization (ABNT in Portuguese), so that managers can carry out the necessary adaptations enabling their areas to receive more people with disabilities. In 2014, 228 disabled people were hired in order to meet the annual hiring requirement of 140 people established in the Conduct Adjustment Agreement (TAC in Portuguese) signed with the Public Prosecution Office in 2004 to comply with Brazilian Law No. 8,213 (July 25, 1991).



### Freedom of association and negotiation

We respect employees' freedom of association and to participate in negotiations. We are committed to not interfering in the establishment, functioning or administration of labour organizations or collective agreements. In accordance with our Code of Ethics and Conduct, we do not tolerate discrimination based on union membership. We guarantee the freedom of association and unionization of employees and trade union rights through collective agreements. [HRS](#)

We have been a signatory of the United Nations (UN) Global Compact since 2007. We respect the laws of the countries where we operate and the eight fundamental conventions of the International Labour Organization (ILO), as shown in the following table:

#### ILO Conventions

No. 29	Forced Labour, 1930.
No. 87	Freedom of Association and the Protection of the Right to Organise, 1948.
No. 98	Right to Organise and Collective Bargaining, 1949.
No. 100	Equal Remuneration, 1951.
No. 105	Abolition of Forced Labour, 1957.
No. 111	Discrimination, Employment and Occupation, 1958.
No. 138	Minimum Age, 1973.
No. 182	Worst Forms of Child Labour, 1999.

## With the creation of the Ombudsman, we increased our number of channels to denounce and prevent harassment

In 2014, 96% of employees were covered by collective work agreements (the same as for 2012 and 2013).<sup>16</sup> The Brazilian Collective Work Agreement, renewed in 2013, is valid until November 2015. In November 2014, as provided for in the agreement, wages and benefits containing financial values were readjusted. **LA4**

Among the most important items is the prevention of harassment and expansion of our complaints service with the creation of the Ombudsman's Channel. During 2014, we held several meetings with trade unions in order to make the use of these channels even more transparent, as described in the Internal and External Governance section.

We have reinforced a broad dialogue with organizations that represent our employees and we believe that transparency in this area has contributed to the absence of strikes at our major Brazilian operations since 1989 and for there not having been any strike or stoppage registered at any of our other locations in 2014.<sup>17</sup> **LA5, MM4**

One of the themes present in our dialogue with trade union representatives and the collective work agreements signed by the company is the dissemination of a culture of health and safety associated with the challenge of achieving zero harm. We take into account the concerns and views of employees' representatives, which determine requirements and mechanisms for preventing incidents and occupational disease, as well as respecting local laws and regulations. These measures include machinery training, the provision of Personal Protective Equipment (PPE), regular inspections in operational areas and the maintenance of joint health and safety committees. Our employees also have the right to refuse to work in unsafe conditions, which is guaranteed and reinforced by our internal standards.<sup>18</sup> More information on this can be found in the **Life Matters Most** section. **LA9**

### Territorial development

Mining is an activity that generally takes place in areas with significant socio-economic deficits, land ownership issues and conflicts over land use that

can generate positive and negative social impacts, such as increased public taxation and supply in the jobs market, changes in traditional lifestyles and the relocation of families, among other issues (for more information see the chart on **page 64**).

In order to understand these territorial dynamics, be assertive in the management of impacts and define social investments in line with local needs, we have strengthened our social dialogue process using participatory methodologies. This focuses on communities in areas of influence. In order to do this, this process is supported by an integrated management model to address stakeholder demands, critical issues and stakeholders, as well as studying and monitoring of socio-economic indicators.

From our Integrated Management Model results, we registered 3,096 community demands and community complaints. Of this total, 1,757 were resolved, 386 are in the process of being resolved and 953 do not fall within the company's responsibility.

**16.** Direct employees covered by this indicator (**LA4**) correspond to 95% (2012), 98% (2013) and 95% (2014) of the total number of employees reported (**LA1**).

**17.** Prior notification of major changes is not a standard procedure and is not established in Vale's collective agreement. According to the Global Reporting Initiative (GRI), significant changes correspond to changes in the pattern of production, such as restructuring, closures, mergers or acquisitions.

**18.** Health, Safety and Environmental Risk Analysis and Management Instructions.

# Potential social and economic impacts P11.2, EC9



## Direct

- Increase in hiring of local services and products
- Increase in government revenues
- Creation of new jobs in local workforces associated with the mining production chain
- Disturbance of local populations by company activities
- Occasional relocation of families in order to install or expand projects
- Generation of intensification of conflicts over land use
- Reduction in the number of jobs during the demobilization stage at the end of the implantation stage



## Indirect

- Increase in the number of formal indirect jobs
- Increased income
- Attraction of new service and product suppliers
- Attraction of investment from the public and private sector
- Improvement of infrastructure and services
- Boost to other economic sectors
- Encouragement of immigration through employment and business expectations and a consequent increase in local population
- Increase in housing deficit
- Encouragement of real estate speculation
- Pressure on infrastructure and public services
- Changes to traditional ways of life
- Increase and diversification of supply and demand of services and commercial activities (local production)
- Training of local suppliers
- Higher political and economic representation in the municipality
- Regional economic development
- Increase in the prices of food, housing, goods and services
- Professional qualification of local communities to work in the mining chain and other economic activities
- Generation of scientific knowledge

Our strategic guidelines, which include the sustainable development of territories, reinforce the importance of acting on a social scale. For this reason, in recent years we have intensified our partnership with the Vale Foundation to increase dynamics and effectiveness in the management of social issues.

Social issues, in addition to being directly managed by our employees across our different territories, are also coordinated on a corporate level with the aim of providing guidance and support to our projects, supported by policies such as Social Actions, guidelines, support tools, processes and specialist teams. Some approaches involve social dialogue, the management of community demands – including indigenous peoples and traditional communities – the planning and management of social expenditure, volunteering and structured actions on issues such as human rights and involuntary relocation. In addition, the Vale Foundation develops initiatives in priority areas, such as health, education and job and income generation, as well as in complementary action areas of culture, sports, urban development, promotion and social protection.

In addition, we have leveraged the opportunities provided by the economic growth generated by our activities through cross-sector partnerships with the various levels of government, public institutions, private companies and civil society. Also through the Vale Foundation, and based on the concept of Public-Private Social Partnerships (PSPPs in Portuguese), we have developed strategic alliances in our territories, particularly in Pará (find out more about this in the Vale Foundation section).

We believe that relationships based on ethics and transparency with communities are essential to the sustainability of our business. In order to operate safely and work well alongside communities – and especially those adjacent to our operations – we seek to manage and mitigate risk and social impacts and understand their needs and demands, collectively building sustainable solutions for all involved.

### Socio-economic studies

The social actions that we develop, whether voluntary or obligatory, are based on our knowledge of our territories and the size of the impacts generated. From implementation to closure of activities, our operations will impact regional dynamics as a result of both their characteristics and the particular features of each location.

Based on the specific characteristics of each region, we carry out studies that analyse demographic, economic and social indicators. The monitoring of these socio-economic indicators allows us to evaluate the effectiveness of our mitigation actions and manage social investment. The effective management of impacts depends on the synergy between the mitigation actions carried out and the ability of the public authorities to manage territorial development.



Find out more about our partnerships in the [Relationship with People chapter](#).



Márcia Foletto

# 57%

of the 3,096 registered demands and complaints from communities were resolved, 31% did not fall under the responsibility of the company and 12% are ongoing



Roberto Ribeiro

## Programs and practices by operational phase

	License/ Implementation	Operation	Closure
Environmental, social and economic impact assessment	■	■	■
Social Programs (training, culture, income generation, etc.)	■	■	■
Mine Closure Plan (environmental, social, economic aspects)	■	■	■
Community relations (local and traditional)	■	■	■
Management of social, environmental and economic impact	■	■	■
Professional qualification (employees and communities)	■	■	■
Professional qualification for suppliers	■	■	■
Enhancement/Protection Program of Cultural Heritage	■	■	-

■ Intense occurrence – more than six programs implemented
 ■ Moderate occurrence – up to six programs implemented

### Social dialogue

Our social dialogue process has been strategic in strengthening our relationships with communities. We use permanent interaction channels and participatory methodologies to manage impacts, share information and understand the interests and expectations around us, building solutions together. One of these initiatives is the development of Relationship and Social Investment Plans with communities, which are based on the direct involvement of local residents in the definition and execution of social investments that meet local needs. In 2014, 26 plans were monitored in continuation with the previous year's actions, and 14 new Relationship and Social Investment Plans were implemented in Brazil.

### Social Expenditure

Also in 2014, we invested US\$270.4 million from our Multi-Year Plan for Social Expenditure in social actions and projects in the locations where we are present. These plans guide the allocation of resources in our territories and are prepared taking into account community demands, socio-economic studies and internal company guidelines set out by our Social Action Policy. Of the resources invested in this period, 58% were voluntary (more information in the Business Perspectives section).

Of the total invested, US\$50.6 million was used for improving infrastructure, as shown in the next table: [EC8](#)

## Impact management and social dialogue

Antônio Pereira is a district of Ouro Preto (Minas Gerais), located 16 kilometres from the centre of the city and with an estimated population of over 4,000 (IBGE, 2010). This places it in the area of influence of the Timbopeba Mine. Due to the proximity of this community to our project there, one of our main concerns is particle emissions, especially during the driest periods of the year. One other demand raised during participatory social diagnoses was residents' limited access to recreational areas.

Using the Relationship and Social Investment Plan created in 2013, a particulate emission reduction project was developed that modified construction methods of a dam, restructuring equipment, training staff and adopting contingency controls such as a water curtain, a 24-hour water truck, water cannons and valves in the bays. As a result, particulate emissions were reduced by 40%. The project reflected positively on our relationship with the community.

To meet the community's need for increased access to leisure areas, we mobilized residents and employees in a collective effort to revitalize a sports court, which was covered and provided with changing rooms and a stage, and the district's main square, which was completely remodelled and now benefits from a nearby hiking trail. Approximately 40 leaders participated in the plan across all stages, and about 50 young people were involved in activities.



Funds invested in infrastructure (US\$ millions)		2012		2013		2014	
By Type	Construction work	90%	55.8	93%	31.5	89%	45.0
	Support for public services <sup>I</sup>	10%	6.5	7%	2.3	11%	5.6
	<b>Total</b>	<b>100%</b>	<b>62.3</b>	<b>100%</b>	<b>33.8</b>	<b>100%</b>	<b>50.6</b>
By Form	Materials/Services <sup>II</sup>	92%	57.6	88%	29.6	75%	37.9
	Commercial engagement <sup>III</sup>	8%	4.7	12%	4.2	25%	12.8
	<i>Pro Bono</i> <sup>IV</sup>	0%	-	0%	-	0%	-
	<b>Total</b>	<b>100%</b>	<b>62.3</b>	<b>100%</b>	<b>33.8</b>	<b>100%</b>	<b>50.6</b>

<sup>I.</sup> Support for public services: support in the development of master plans in the areas of sanitation, urban infrastructure and health, etc.

<sup>II.</sup> Investment in infrastructure for the provision of services or the delivery of a product.

<sup>III.</sup> Activity that generates a benefit to the public but that primarily represents revenues or return on investment for the company.

<sup>IV.</sup> *Pro bono* work to benefit the public, such as the allocation of people with specific functions to activities during the time scheduled for the work, using company resources.

## Vale Foundation

With 46 years of existence, the Vale Foundation is a partner of the company in its mission to “transform natural resources into prosperity and sustainable development”, and seeks to leave a positive legacy in our territories, leveraging the opportunities provided by the economic growth generated by mining activities and enable corporate social investment. In order to do this, it carries out voluntary social projects in the areas of health, education and job and income generation according to local demands and in partnership with recognized institutions that are experienced in these themes.

The Vale Foundation operates under the premise that long-term territorial development is only effective through cross-sector dialogue and collective construction, by forming links with existing public policy and social actions promoted by local authorities, the private sector and civil society.

Due to the importance of participatory and cross-sector alliances, we conceived the concept of Public-Private Social Partnerships (PSPPs), which is based on bringing together effort, resources and knowledge of government, civil society and the private sector in order to build an agenda with common goals, with a view to territorial development.

## Public-Private Social Partnership

Through this PSPP, we develop social projects in close partnership with governmental institutions, ministries and local government, private companies and non-governmental institutions such as the United Nations Educational, Scientific and Cultural Organization (UNESCO).

We have technical cooperation agreements with the Ministry of Health and the Ministry of Cities. One of the objectives of these agreements are the cross-sector links that were formed in the municipality of Canaã dos Carajás, in Pará (see these initiatives in the case below). A cross-sector effort is made to ensure that both public and private investment is sustainable and long lasting, providing greater transparency to public investment and contributing to a positive legacy for communities after we have finalized our activities.

## Transformative partnerships

Located in the southeast of Pará, the municipality of Canaã dos Carajás is inside the S11D Carajás Iron Project's area of direct influence. The municipality went from an urbanization rate of 35.9% in 2000 to 77.6% in 2010, with a population increase of 144% and 428% urban occupation. This growth has resulted in significant socio-economic challenges.

As the government is interested in working with cross-sector partnerships and the community is interested in this improvement process, a positive environment has been established in which the Vale Foundation can leverage existing opportunities within this territory, attracting investments and partnerships in order to carry out social projects.

Below are some of the social initiatives that were developed at Canaã dos Carajás in 2014 as a result of this partnership.

- In the area of Childhood Education, activities to encourage reading and teacher training initiatives were carried out in synergy with the Brazilian National Pact for Literacy at the Right Age (PNAIC). In order to strengthen public policy, we provided training for the staff at the Municipal Secretariat of Education, contributing to the target set by the Pará State Education Pact, the objective of which is to increase the state's Basic Education Development Index by 30% over the next five years.
- Technical agreement with the Ministry of Cities to acting in the areas of housing, sanitation, regularization of land ownership and urban mobility. One of the initiatives resulting from this agreement was the organization of two regional courses on Politics and Management of Basic Sanitation Services. The material for these courses was then adapted to be used for distance learning. It is now available on the Skills Portal on the Ministry of Cities website and may be used by any municipality in Brazil. Technical assistance was also offered for the development of a Municipal Plan for Urban Mobility, as the municipality does not have any public transport facilities.
- Through a partnership with the Federal University of Pará (UFPA), we were able to review the city's master plan and develop a pilot project for the regularization of land ownership. The aim of this is to support city hall in the construction of a more integrated and effective public management system.
- Support in the implantation of the first Guardianship Council model referenced by Brazil's National Secretariat for Human Rights.
- Technical agreement with the Popular Health Promotion Centre (CEDAPS) in order to deploy the Health Cycle project in 100% of Primary Healthcare Centres in the municipality, training 130 professionals and providing the necessary basic equipment for community care.
- Technical agreement with the government in the revision of the Municipal Health Plan, which presents the intentions and results to be sought by management over a period of four years, expressed in terms of objectives, guidelines and targets.
- Partnership with the Children's Ministry in nutritional support and monitoring 260 children in the municipality.
- Technical support for the municipality in the planning of future actions to improve coverage of Basic Healthcare and technical support for the implantation of new equipment and public services, through a Technical Agreement with the Ministry of Health.

## AGIR Program

The Income Generation Support Program (AGIR in Portuguese) promotes initiatives by groups and local entrepreneurs that strengthen communities and the development of territories, through mapping productive skills, entrepreneurial training and encouraging social actions to increase family income.

Already deployed in six municipalities in the states of Pará, Minas Gerais and Espírito Santo, the program is conducted in three stages. The first involves the prospecting and selection of the groups and individual entrepreneurs to be trained. The training, incubation and acceleration phases are then completed, according to the business profile mapped during training. The third step involves the consolidation of social business and the formation of networks and production arrangements to strengthen local ecosystems of entrepreneurship. In 2014, 281 entrepreneurs were directly involved, indirectly benefitting approximately 1,124 people in the business production chain.

Last year, this initiative arrived at the regions of Nova Lima (Minas Gerais) and Costa Verde (Rio de Janeiro), with a focus on creative economy (AGIR Criativo in Portuguese). In Nova Lima, 60 social and rural business entrepreneurs attended the Entrepreneurship Course for Small Businesses, which resulted in the development of 38 business plans. Of these, eight were selected for business incubation, the next step of the project. In Costa Verde, a diagnostic of productive groups in the municipalities of Itaguaí and Mangaratiba was carried out, with 70 entrepreneurs and institutions being mapped. AGIR Criativo started activities in the municipalities of São Luís (Maranhão) and Parauapebas (Pará), where 39 entrepreneurs participated in the Creative Entrepreneur Training Cycle and 24 business plans were produced, eight of which being selected for the incubation phase. This program works in partnership with the Solidary Socio-economic institute (ISES), the Kairós Institute, the Gênesis Insitute and the Pontifical Catholic University of Rio de Janeiro, the company APRAX and the Brazilian Service Support Small and Companies (SEBRAE in Portuguese) for the state of Pará.

Next we will highlight the main results achieved by the Vale Foundation in 107 Brazilian municipalities in 2014. More information on these projects is available on the website at [www.fundacaovale.org](http://www.fundacaovale.org).

**Education** | In 2014, we trained 552 teachers and 42 school managers. Also this year, we held a range of meetings with the authors of children's books, with the participation of over 2,000 teachers and 4,500 students. In these meetings over 1,800 cases containing over 18,000 books were provided to 1<sup>st</sup> to 3<sup>rd</sup> year elementary school classes. In addition, the Vale Foundation has seven Learning Houses, integration spaces for the exchange of experience and access to different educational activities that are available to the whole community.

**Health** | Around 4,000 health professionals were trained, and these were involved in the implementation of preventative actions and strengthened activities taking place in basic healthcare centres. Social mobilization and health promotion actions, such as preventative campaigns and social projects involved the participation of 22,000 people. Also in 2014, in partnership with the Ministry of Health, teaching material using the Stork Network strategy was developed and launched in order to train health professionals and the community on mother and baby policy.



The Vale Foundation believes that long-term territorial development is only effective through cross-sector dialogue and collective construction, by forming links with existing public policy and local social actions



**Job and Income Generation** | The AGIR Program supports social, creative and rural businesses through the prospecting and development of family businesses and collectives, including the training, consultation, mentoring and monitoring of businesses (incubation or acceleration). In one year, 211 entrepreneurs were trained, which led to the development of 117 business plans. At the end of 2014, 20 social and rural businesses and eight creative businesses were in a process of incubation.

**Urban Development** | A total of 58 people were trained in urban mobility in the state of Pará, 27 in land regularization in Espírito Santo and 80 in basic sanitation policy and management through distance learning provided by Brazil's Ministry of Cities. In the area of housing, the Vale Foundation developed the Seal of Urban Quality in technical cooperation with the ministry, which selects example social projects so

that businesses involved in Brazil's My House, My Life Program can have access to supplementary funding and produce affordable housing.

**Social Promotion and Protection** | A total of 10,852 people including employees, contractors and community members were targeted with the awareness campaign "Proteger é Preciso" (We Must Protect) against the sexual exploitation of children. In addition, five communication centres were inaugurated with the objective of promoting the direct participation of children and adolescents in the surrounding municipalities in community mobilization actions with a focus on the prevention and combat of sexual violence. Over 100 workshops were held with a focus on themes such as educative communication and human and sexual rights, mobilizing around 200 adolescents.

**Sport** | In 2014 alone, the Brasil Vale Ouro sports program involved 2,500 children across five state in Brazil, who attended sports training in athletics, judo, football and swimming outside school hours.

**Culture** | A total of 117,000 people, 27,000 of which students, visited the Vale Museum in Vila Velha, Espírito Santo. The Vale Minas Gerais Cultural Museum in Belo Horizonte received over 138,000 visitors, with 25,000 participants in educational actions, including students from 878 schools.

**Knowledge Centre** | Over 8,650 people benefitted from regular programs, with a total of over 15,400 direct attendances. Of these, 300 families benefitted through rural programs for the generation of jobs and incomes and 3,100 children, adolescents and adults participated in sports programs. A total of 9,500 people were involved in educational activities, such as pedagogical support, support and encouragement for reading, English, information technology, professional training courses and environmental education, among others, and there were 1,100 participants in cultural activities.

## Development of suppliers and local workforce

Our actions have led to increases in products, services and the hiring of labour in our territories. We have reinforced our commitment to respect local realities and needs and identify and implement initiatives that consider regional vocations. In order to do this, we seek to develop our supply chain and train our professionals.

Our local hiring index was 64%,<sup>19</sup> one percentage point above the previous year. Considering just senior management<sup>20</sup> from local communities,<sup>21</sup> this index was 49% – four percentage points higher compared to 2013. The initiatives that contributed to the rise of this indicator included the identification and development of local successors to leadership positions. In addition, we have maintained our hiring policy that prioritizes local candidates (born or residing in the location) and our commitment to train the local workforce. [EC7](#)

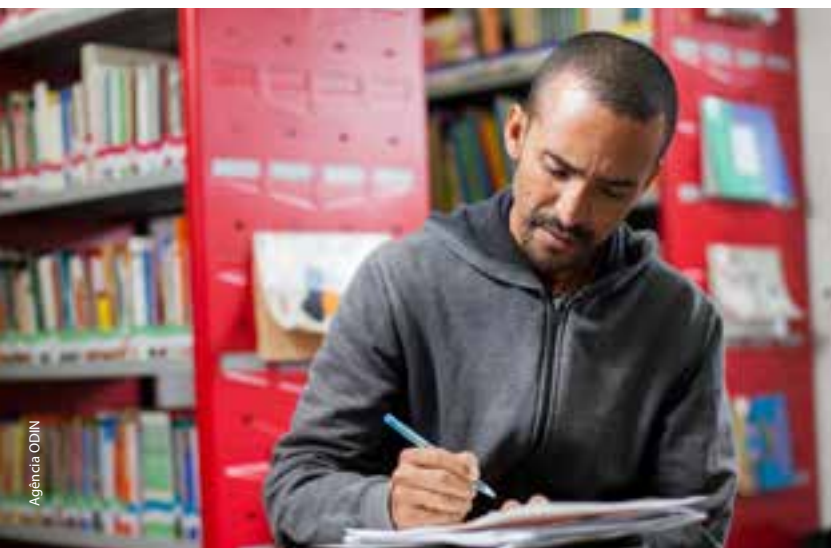
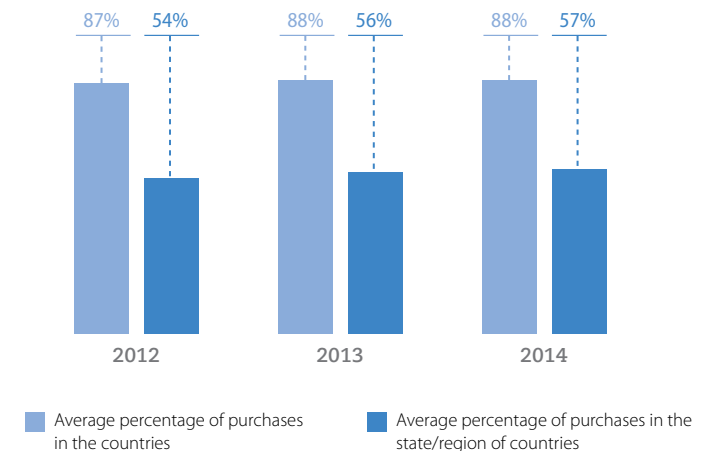
In 2014, our local purchasing percentage was 88%, remaining at the same level as previous years, and 57% for purchases made in the same state/region. In Brazil, this result was 93% (nationally) and 63% (within states), the latter result being seven percentage points higher than it was in 2013. In Mozambique, local purchases reached a rate of 67%, four percentage points up from 2013. [EC6](#)

<sup>19</sup> Direct employees covered by this indicator ([EC7](#)) correspond to 99.1% (2014) of the total number of employees reported ([LA1](#)).

<sup>20</sup> Here we consider senior management to include managers and directors.

<sup>21</sup> Despite the fact that the calculation of this indicator considers the location and state where employees were born, our hiring policy prioritizes, where applicable, those who are resident in the state and not necessarily those who were born there.

### Percentage of local purchases in monetary values – global results



# 88%

Was our local purchasing percentage in 2014, the same level as that registered for previous years







# 73

The number of companies trained over the year on our supply and financial risk analysis processes, in partnership with the industry federations of Pará, Maranhão and Espírito Santo



One of our initiatives to develop local content is the Inove Program, which supports suppliers in each region through training, credit lines, and encouraging business incentives and competitiveness. In 2014, we strengthened our partnerships with important local business development agents linked to the industry federations, which we also support. In doing so, we improved our training plans according to the priorities of each region in the the supply of goods and services.

In partnership with the industry federations of Pará, Maranhão and Espírito Santo, we trained 73 companies on our main supply processes, supplier registration guidelines and financial risk assessment. In addition, we revised and updated the portfolio of courses on our Online Training Platform, which offers over 100 courses in Portuguese in a range of areas.

We launched our Guide to Local Purchasing for Projects, a tool that standardizes best practice in purchasing and aims to disseminate this along our project supply chains.

Another important initiative was the renewal of our technical cooperation agreement with the Brazilian Service. We plan to expand this to include over 500 suppliers in the states of Espírito Santo, Maranhão, Minas Gerais, Mato Grosso do Sul and Pará, and help them to increase their competitiveness. The new cycle will begin in 2015 and will last for two years. Participating companies will be trained in a range of management areas through individual consultations. In 2014, around US\$192.2 million was awarded in funding and loans, and over 100 companies participated in classroom and distance learning courses.



Our On-line Training Platform  
is available at [www.inoveedu.com.br](http://www.inoveedu.com.br)



## Community relations

### Indigenous peoples and traditional communities

Vale focuses on continuously improving our relationship with indigenous peoples and traditional communities, and we have strengthened our team to include professionals with multidisciplinary training and experience with indigenous peoples. In addition, we have trained employees and suppliers on interface with indigenous peoples in areas of influence of our operations. We also participate in a forum to develop best practice in relationships between Companies and Indigenous Peoples, which is organized by The Nature Conservancy (TNC) and the Brazilian Mining Institute (IBRAM in Portuguese), with support from the National Indian Foundation (FUNAI in Portuguese), funding bodies, the private sector and indigenous movements. This way, we seek to establish constructive and mutually beneficial relationships based on respect for cultural diversity and specific rights and with a focus on the ethnic development<sup>22</sup> of indigenous peoples and traditional communities in our areas of influence.

In Brazil,<sup>23</sup> our operations interface with 34 traditional communities and 12 indigenous peoples, with which we have agreements, impact mitigation programs or relationship actions. We have also signed agreements with 12 of the 16 indigenous peoples we interface with in Australia, in Canada, in Indonesia, Malaysia and in New Caledonia. **MM5**

In 2014, we finalized three environmental impact studies and initiated the deployment of six impact mitigation programs, all involving the participation of indigenous peoples and licensing agencies.

Despite the continuous improvement of our community relations, in 2014 we experienced interdiction on our railways due to demonstrations by indigenous peoples or quilombola communities, among other issues.

### Railway interdiction

Our railways are one of the assets that give our company its competitive edge. In Brazil, where our biggest mining systems are located, we operate approximately 1,800 kilometres of railway – 6.3% of Brazil's railway network – including the Carajás Railway (EFC), covering 892 kilometres, and the Vitória – Minas Railway (EFVM), spanning 905 kilometres.

These railways cross through four states, running through various municipalities with significant socio-economic deficits and where there are often no other public transport alternatives or safe access routes. We also operate long-distance passenger trains along these stretches.

<sup>22</sup> The notion of ethnic development refers to the social capacity of indigenous peoples and traditional communities to build their future, in line with their historical experiences and actual and potential resources of their culture, according to projects established that match their values and aspirations. It assumes the necessary conditions for the autonomous capacity of a culturally differentiated society to manifest itself, defining and guiding its development.

<sup>23</sup> In the States of Pará, Maranhão, Minas Gerais, Espírito Santo and Sergipe.

## Support for family farmers

Agricultural activities have great social and economic importance in south-eastern Pará. To support family farmers, the Vale Foundation has assisted with the development of several actions, encouraging the diversification of production, adding value and technical training.

After mapping local demands according to community vocations and respecting best practice, the Vale Foundation identifies partners with the knowledge on specific themes to implement actions in the field: the Solidary Socio-economic Institute (ISES), the company Semear Ambiental and the CAMPPAX Cooperative.

Last year, 1,140 family farmers were benefited in the municipalities of Canaã dos Carajás, Ourilândia do Norte, Tucumã, Parauapebas and São Felix do Xingu. Some highlights include the deployment of poultry production units in the Gelado Environmental Protection Area (APA in Portuguese) in Parauapebas, support for a nut processing cooperative in São Felix do Xingu and training in cocoa production and dairy farming in Ourilândia do Norte and in operation of agricultural equipment in Canaã dos Carajás.

In 2013 and 2014, there were incidents on the EFC and EFVM due to manifestations associated with the need for impact mitigation, the renewal and formalizing agreements and community safety, as well as other issues unrelated to our activities. The main parties involved were traditional communities and indigenous peoples from urban and rural communities located in the areas of influence of our operations, as well as social and political movements. These stoppages impacted both the transportation of our product and local communities as a result of the interruption or delay of passenger transport, fuel and other cargo.

In the case of obstruction, we adopt the appropriate legal measures in order to resume our operations, as this is an important public service and it is our responsibility to ensure its sound operation and the safety of everybody involved. However, we seek to understand the motivations of protesters and we deal with the demands that we are able to contribute to. We are committed to leaving a positive legacy for the communities adjacent our operations and projects through consolidation of a relationship of trust, mutual respect and the promotion of open dialogue.

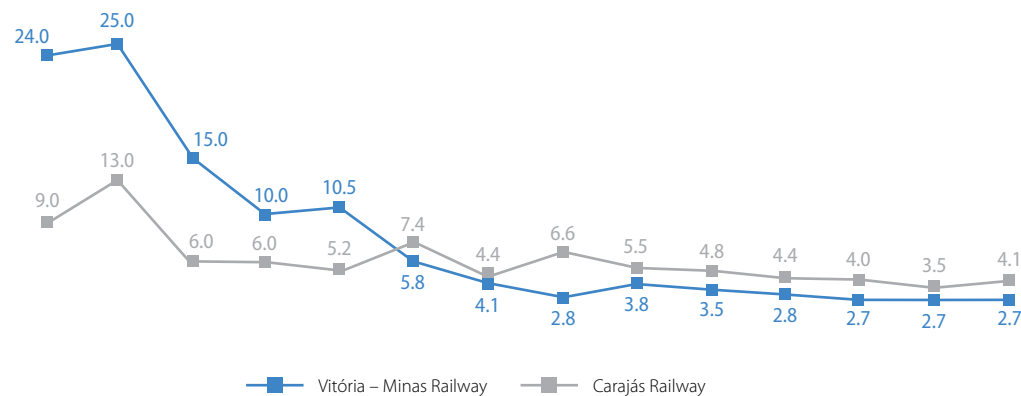
### Railway incidents

We are also still committed to reducing the number of incidents on our railways. We maintain a series of initiatives to mitigate impacts and teams dedicated to management, monitoring, follow up and developing actions that will prevent such incidents.

Our mitigation actions include the identification of critical stretches of track in terms of environmental risk, meteorological monitoring and the expansion of the number of simulations and training courses for train drivers. In addition, we have developed failure prevention systems, standardized operations, regular on-track and rolling stock maintenance, educational and awareness campaigns in the communities adjacent to our railways and the modernization and expansion of our signalling systems.

### Incidents

Per million train/kilometre (Mtkm)



We have developed various actions aligned with our commitment to reducing the number of incidents on our railways

### Monitoring lawsuits

We maintain wide-ranging, permanent, structured dialogue with indigenous peoples and traditional communities close to our operations and projects.



Available at  
[www.vale.com/rs2013](http://www.vale.com/rs2013)

In 2014, we did not record any new lawsuits, and legal issues were consistently managed with transparency and in permanent dialogue with communities. Currently, Vale has 10 active processes, which were reported in the 2013 Sustainability Report. **HR9**

### Conflicts over land use

Our business is often located in remote areas and indigenous peoples and local communities are found in the areas adjacent to our operations. The land and its resources are of fundamental importance to these communities, as they live on it and make a living from it.

Our community relations teams and specialists deal directly with all local leaders. Some relationships with local communities require special attention due to a history of conflict or social vulnerability. Therefore, we prioritize dialogue in the management of conflict. Sometimes we need to conduct proceedings within the legal system, and in these situations we seek reconciliation and act with respect for the rights of those involved, negotiating agreements that enable the support and preservation of cultural and social identities, as well as territorial development.

According to the legislation, for safety reasons it is our responsibility to maintain the sound functioning and safety of the right of way of our railways. Most of the conflicts that occur in these areas along the EFC and the EFVM arise from occupations and irregular boundaries, the installation of fences for family farming and the illegal construction of houses or small commercial buildings.

In 2014, we dealt with 44 cases of conflict over the use of land, with 33 improper occupations on our properties, 32 in Brazil distributed across Minas Gerais, Pará and São Paulo, and one in Mozambique. Another ten cases disputed issues related to basic services, such as transport, food and public supply.

There was also a protest by the Tupiniquim indigenous community in Espírito Santo as a result of the Barra do Riacho branch railway line, which was interfering with the Comboios Indigenous Land approved in 2010. In order to resolve this conflict, a social environmental commitment agreement was signed, in the area of environmental licensing, providing for projects carried out in the areas of education, health, housing, productive activities and social projects to benefit indigenous people.

All of these cases are being duly monitored so that they can be resolved. **MM6, MM7**

### Involuntary Relocation

The involuntary relocation of communities can be indispensable for the development of our activities, due to the fixed location of mineral deposits, and for this reason we have used our Involuntary Relocation Guidelines Norm since 2014 to guide these processes. In addition to this, we use our Community Relations Manual for Capital Projects, our Community Relations Guide and our Involuntary Relocation Procedure, documents that have been developed in line with international guidelines, particularly those defined by the World Bank and the International Finance Corporation (IFC).

Involuntary relocation processes underway in 2014 are related to operations at Onça Puma (Pará), the S11D Logistics Project (Pará and Maranhão), the Drilling of Wells for Sylvinitic Ore Research (Sergipe), the Patrocínio Mineral Complex Project (Minas Gerais), the Modernization Project (Minas Gerais) in Brazil, and the Nacala Corridor Project in Mozambique and Malawi.

These processes are all currently in execution, according to the provision set out in the company's regulations: planning, scenario analysis (diagnostics), preparation of Assistance Plans and negotiation, before, during and after removal.

In Mozambique and Malawi, the relocation process underway in 2014 enabled the vacation of operational areas required for the implementation of the Nacala Corridor Project and provided compensation for the loss of infrastructure and other assets for 8,406 families and the inclusion of 1,798 families in assisted compensation programs.

In Brazil, nine families were provided with basic compensation for the loss of infrastructure and other assets; 49 were included in assisted compensation programs and two were resettled. **MM9**

Involuntary relocation activities are described according to project in the following table:

Project name	Location	Country	State/District	Provided simple cash compensation (without follow-up)	Removed through assisted compensation	Removed through resettlement
BH – Sabará Modernization Project	Nações Unidas	Brazil	Minas Gerais	4	12	0
Patrocínio Mineral Complex Project	Mata da Bananeira	Brazil	Minas Gerais	0	0	2
Well Drilling for sylvite ore Research	Patioba	Brazil	Sergipe	0	1	0
S11D Logistics Project	Cajuapara	Brazil	Maranhão	0	2	0
	São Félix	Brazil	Pará	4	32	0
Onça Puma Operational Site	Campos Altos and Tucumã Settlement Project	Brazil	Pará	1	2	0
Nacala Corridor Project (Section 2)	Catete, Nhassossa, Cachoeira, Inhangoma, Nhamitsatsi, Monga, Cituavua, Mpassi, Mameme, Madamba, Ntsanha Mbembezi e Kalango ya Ntchenga	Mozambique	Tete	151	11	0
Nacala Corridor Project (Sections 6 and 7)	Mecanhelas, Cuamba, Malema, Ribaue, Mecuburi, Rapale, Nampula, Meconta and Monapo	Mozambique	Nampula and Niassa	5,460	1,176	0
Nacala Corridor Project (Section 8)	Nacala-a-Velha, Mossuril	Mozambique	Nampula	0	611	0
Nacala Corridor Project (Sections 3 and 5)	Senior Chief Nasamala, Liwonde Town, Traditional Authority Sitola, Senior Chief Liwonde, Traditional Authority Mlomba anda Senior Chief Kawinga	Malawi	Balaka District and Machinga District	2,795	0	0
<b>Total</b>				<b>8,415</b>	<b>1,847</b>	<b>2</b>

## Atmospheric emissions, noise and vibration

We maintain our commitment to continuously improve control mechanisms for atmospheric emissions, noise and vibrations. In 2014 we invested US\$75.4 million to enhance processes and actions on this control.

In mining, the most significant particulate matter emissions are from diffuse sources (fugitive emissions). These originate mainly from traffic on unpaved roads, exposed areas subject to wind drag, the handling of loose materials and rail transport.

We have adopted various measures to control diffuse emissions, including sprinkler systems, dust suppressing agents, enclosures, wind fences<sup>24</sup> and the revegetation of embankments.

At our pelletizing plants 1 to 4 at the Tubarão Complex, we have introduced a project to modernize the glycerine application system on the pellet routes, improving the control of emissions. This project is being implemented in plants 5 to 8 and is expected to go into operation in 2015.

At the Moatize Industrial Complex in Mozambique we have developed an action plan to reduce atmospheric emissions based on the Study of Global Best Practice in Controlling Particulate Matter Emissions and a Diagnostic of Complex Control Systems. One of the

measures adopted was the installation of three water spray jets to control emissions in critical areas and the application of dust suppressants on roads. In addition, new meteorological and air quality monitors have been installed. These are automatic, provide real-time results and will contribute to modernizing our monitoring network and improving the management of emissions at the complex.

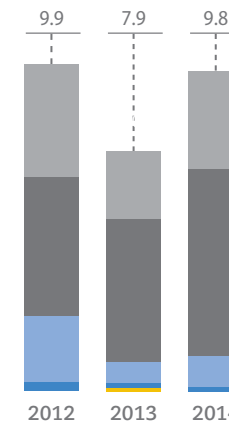
In order to develop and disseminate best practice, we also hold internal technical training programmes at our operational units, and conduct regular meetings in two thematic subcommittees, the Atmospheric Emissions, Noise and Vibration and Environmental Technology working groups.

Particulate emissions from stationary sources (nickel, pelletizing, fertilizers and ferroalloys) in 2014 totalled 9,800 tons, 25% higher than these emissions in 2013. The main reason for this increase was increased production and operational problems with the control system for particulate material in Indonesia. The emissions were in conformity with local standards, however. **EN20**

<sup>24</sup> Wind barriers are installed around our product stockyards to reduce the spread of dust.

## Particulate matter emissions **EN20**

In thousand metric tons



Business area	2012	2013	2014
Pelletizing	3.4	2.2	2.6
Nickel	4.2	4.7	6.0
Fertilizers	2.0	0.7	1.0
Manganese	0.3	0.2	0.2
Others*	0.0	0.1	0.0
<b>Total</b>	<b>9.9</b>	<b>7.9</b>	<b>9.8</b>

\* Includes coal and copper emissions.

Regarding the control of environmental noise, we have developed a Structured Plan for the Vitória – Minas Railway containing short, medium and long-term actions to reduce noise at our railway operations, aiming to reduce noise pollution in surrounding communities. In addition, a best practices and awareness program has been carried out for operators and managers at our units involving loading and the application of dust suppressants in order to improve the control of emissions during rail transport.

The Environmental Control Center (CCA in Portuguese) in Nova Lima, Minas Gerais, maintains a multidisciplinary team responsible for the management and environmental monitoring of operational units of the South System, comprising the production of iron ore and pellets, and their surrounding areas. Certified according to International Organization for Standardization (ISO) Regulation 17025 for the self-monitoring of air quality, seismography and environmental noise, in 2014 a new system was installed at the CCA deployed to

monitor environmental noise, equipped with 11 automatic stations providing real-time analysis, which enables noise control actions to be adopted. This is a pioneering initiative in South America, and 27 other stations are planned to be installed by 2018.

### Demobilization of assets and mine closure

Mineral reserves are not infinite. For this reason, we prepare to close our operations via mine closure plans, which consider all of the associated technical, economic and environmental aspects. These plans permeate the entire life cycle of our projects, from the exploration phase through to decommissioning, and are developed for new projects. As well as complying with the specific laws of each of the locations in which we operate, our mine closure actions are designed to ensure a positive legacy.

In Brazil, we have completed mine closure plans for all our mining units. In our international operations, 93% of our mining units are covered by such plans, and are aligned with the legislation of each location.

In addition, Vale has an internal procedure, which is aligned with international standards, that regulates the creation of a fund for the Release of Resources for Asset Demobilization. Each structure (asset) is evaluated on an annual basis to determine its cost of demobilization. This process has been in place since 2003 and is included in our financial statement. By the end of 2014, this fund had an approximate nominal value of US\$3.369 billion, covering all of our business in Brazil. Around US\$37.3 million was used in demobilization actions for mines reaching the end of their life cycles. These actions promote the gradual rehabilitation of these areas, as they are initiated during the useful life of the mine and not just after demobilization. The application of the funds made available for this is monitored by the company and subject to external audit, ensuring transparency in the management of resources. **MM10**



Márcia Foletto

The Environmental Control Center in Nova Lima, Minas Gerais, maintains a multidisciplinary team responsible for the management and environmental monitoring of operational units of the South System



Marcelo Coelho



- Climate Change and Energy
- Water Resources
- Biodiversity and Land Use

# Relationship with the Environment and Climate Change

# We maintain our commitment to our Carbon Goal, that involves reducing our direct GHG emissions by 5% in 2020

## Climate change and energy

Climate change is a global challenge that impacts the whole of society, especially as it involves the availability of water resources and energy, biodiversity, land use and communities. To reduce the effects of climate change, a universal effort must be made to reduce greenhouse gas (GHG) emissions, in order to limit global warming to 2°C.<sup>1</sup>

Vale's Global Climate Change Mitigation and Adaptation Policy includes the company's Carbon Goal to reduce GHG emissions by 5% in 2020, and we encourage our value chain to do the same.

We support the mobilization of sectorial organizations, governments and corporations, actively participate in debate forums on climate change, keep up to date with the legislation of the countries where we operate and evaluate solutions for emission reduction.

For the fifth year we were included in the Climate Disclosure Leadership Index (CDLI)<sup>2</sup> from CDP,<sup>3</sup> and our inventory<sup>4</sup> was classified with the Golden Seal from The Brazilian GHG Protocol Program. The methodologies, guidelines, global warming potentials, references and emission factors adopted in our inventory are published annually by the CDP Climate Change Program and The Brazilian GHG Protocol Program.<sup>5</sup>

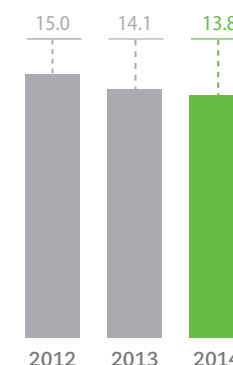
We ended the year with 13.8 million tCO<sub>2</sub>e of direct GHG emissions (scope 1),<sup>6</sup> and with 2.1 million tCO<sub>2</sub>e of indirect emissions (scope 2).<sup>7</sup> Renewable emissions<sup>8</sup> from direct emissions sources totalled 0.3 million tCO<sub>2</sub>e. Our scope 1 emissions were reduced by 2%, as a result of the sale of logistics assets and production disruption in our coal and manganese business. Our scope 2 emissions increased by 30% – mainly impacted by the Brazilian electricity system's emission factor, which increased by 40%. **EN15, EN16, EN17, EN29**

1. As established by the Copenhagen Accord: [www.unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf](http://www.unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf)  
2. Available at: [www.cdp.net/CDPResults/CDP-brazil-climate-change-report-2014-english.pdf](http://www.cdp.net/CDPResults/CDP-brazil-climate-change-report-2014-english.pdf), page 34  
3. This global system allows companies to measure, manage and share information on GHG emissions and other environmental issues: <https://www.cdp.net/en-US/Pages/HomePage.aspx>  
4. Prepared using an operational control approach, this uses a mobile base year and includes CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and hydrofluorocarbons (HFCs).

5. Available at: [www.registropublicodeemissoes.com.br/index.php/statistic](http://www.registropublicodeemissoes.com.br/index.php/statistic)  
6. This includes emissions from the use of fuels and production processes through our own sources or sources controlled by the company.  
7. This includes emissions through the purchase of electricity and process steam from sources not controlled by the company.  
8. Emissions from inexhaustible sources such as biofuels, solar and wind energy. Adapted from the GHG Protocol – [www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf](http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf), Page 101.

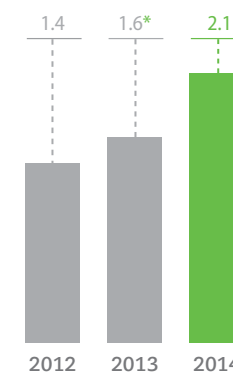
## Greenhouse gas emissions

Scope 1 – million metric tons of CO<sub>2</sub>e



## Greenhouse gas emissions

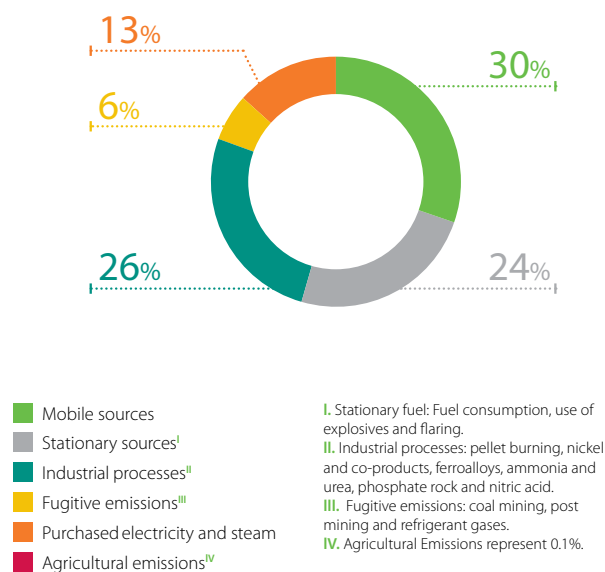
Scope 2 – million metric tons of CO<sub>2</sub>e



\* Scope 2: For 2013, this value was recalculated from 1.3 to 1.6, as the Ministry of Science, Technology and Innovation (MCTI) corrected the emission factors.

## Direct and indirect emissions by source

Total of million metric tons of CO<sub>2</sub>e



Our GHG emissions reflect the profile of our energy matrix, which is composed of 21% of renewable energy and 79% of non-renewable energy, with diesel and natural gas being the main sources of energy and emissions. Our energy consumption was 195,000 TJ and our indicator of emission by energy consumption was 81 tCO<sub>2</sub>e/1,000 TJ, 1% lower than the previous year.

Consolidated energy sources	(%)	Type
Diesel	24%	■
Natural Gas	18%	■
Renewable Grid Energy	14%	■
Coal and Coke	12%	■
Shipping Oils	7%	■
Non-Renewable Grid Electricity	7%	■
Renewable Fuels	7%	■
Others	2%	■

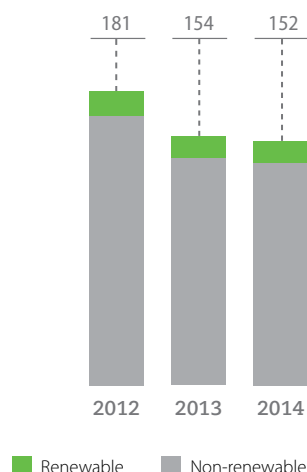
■ Renewable **(21%)**  
 ■ Non-renewable **(79%)**

Our electricity consumption (42,000 TJ) corresponds to 21% of our energetic matrix, and 51% of this total comes from our own electricity production.

In 2014, our investments in renewable energy totalled US\$117 million and were applied to the generation of hydraulic energy and energy efficiency. This result reinforces our commitment to guarantee our energy supply in a competitive and sustainable way, giving priority to renewable resources and energetic efficiency in our operations and seeking to reduce costs and GHG emissions. **EN3, EN4, EN16, EN17**

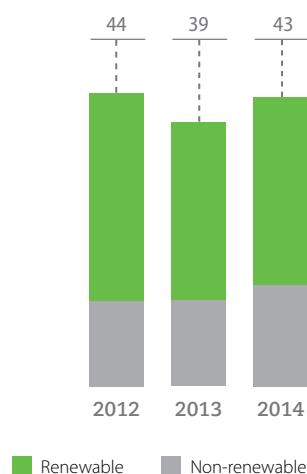
### Consolidated direct energy consumption

Thousand TJ/year



### Consolidated indirect energy consumption

Thousand TJ/year



Vale maintains corporate participation in nine hydropower plants (UHEs) in Brazil and in three in Indonesia, as well as four small hydropower plants (SHPs) in Brazil and five in Canada. We also have an indirect participation in Norte Energia S.A., a special purpose company whose objective is the construction and operation of the Belo Monte hydroelectric power plant.

On February 27, 2015, we concluded the transaction initiated in 2013 with CEMIG GT to form the joint venture Aliança Geração de Energia S.A., which took over control of some electricity generation projects and assets belonging to the two companies. Vale and CEMIG GT retained a participation of 55% and 45% respectively in the total capital of Aliança Geração. The transaction with CEMIG GT to sell 49% of Vale's participation in Norte Energia was also concluded, which took place in two stages: first Vale transferred its 9% participation in Norte Energia to its subsidiary Aliança Norte Energia Participações S.A. (Aliança Norte) and then CEMIG GT acquired 49% of the shares of this company. The conclusion of the Aliança Norte transaction took place on March 31, 2015, and Vale and CEMIG GT retained a participation of 51% and 49% in the capital of the company respectively.<sup>9</sup>

<sup>9</sup> More information on this agreement with Cemig Geração e Transmissão S.A. can be found in Reference Form.

### Mitigation measures

Energy management is critical for the company to achieve its Carbon Goal, and this can be demonstrated through targets to reduce the consumption of fuel and electricity at our operations, which make up our Action Plan on Sustainability (PAS).

We are working on the conservation and rational use of energy resources through the identification and implantation of projects to reduce consumption in transportation systems for material (pumping and conveyor belts), utilities (ventilation, water and compressed air) and thermal systems (furnaces, boilers and burners).

An example of the efforts we made to promote the conservation of energy in 2014 was the implantation of two energy efficiency projects at the Alegria Mine in Mariana (in the state of Minas Gerais): the conversion of a feeder in semi-mobile crushers from diesel to electricity, as well as the installation of "Caçamba Quente" kits in the buckets of 13 off-road trucks that prevent the transport of "dead" material that sticks to the bucket. This reduces diesel consumption and



# 34%

reduction achieved  
through projects  
related to fuel  
substitution such  
as oil or LPG for  
natural gas



at the same time increases productivity. These two actions generate a saving of US\$344,800 and 1,500 tCO<sub>2</sub> and 17 TJ every year.

Vale also implemented an Energy Information System in its pelletizing operations in Vitória and Vale Fertilizers, allowing the detailed monitoring of the energetic performance of these sites and the mapping and identification of opportunities to reduce consumption.

We seek alternatives to replace diesel at our operations through investments in fuels such as natural gas and biodiesel. In 2014, we achieved a reduction of 1.2 million tCO<sub>2</sub>e, 20% of which results from new projects implemented during the year and the other 80% correspond to previously implanted projects. Of the total reduction, 46% was a result of GHG elimination

projects (such as the use of flares and catalysts); 34% of fuel switching (such as substituting oils and LPG for natural gas); 18% of increases in efficiency (such as substituting equipment and improving processes) and the remaining amount was due to changes in modes of transport and operator behaviour. **EN5, EN7, EN18**

### Risks and opportunities associated with climate change P11.2, EC2

Mining is particularly susceptible to the impacts of climate change as it is concentrated within specific geographical locations, involves fixed assets with a long useful life and works with global value chains. In addition, mining activities include the management of water resources, climate-sensitive energy and the expectations of different stakeholders.



We seek alternatives  
to diesel in our  
operations through  
investment in natural  
gas and biodiesel

Our risks related to climate change are classified into two main dimensions:

**Physical** | physical changes that prevent the continuity and safety of production. We are mapping our vulnerabilities,<sup>10</sup> as well as the possible impacts that may arise from these, in order to integrate this theme into the reality of our operations and businesses and with an emphasis on four major climatic event groups: increases in temperature, sea level rise, changes in precipitation patterns and increased frequency and/or intensity of extreme climatic events (droughts, floods, storms).

The company's logistics assets are considered the most susceptible to the physical impacts of climate change. We are dedicated to seeking solutions that minimize these risks, taking into account the areas and communities where we operate. In order to do so, in 2014 we started risk assessments specific to climate change in three ports: Tubarão, São Luis and the Ilha Guaíba Terminal (TIG).

An example of one of our adaptation measures was the installation of a meteorological radar at the Capixaba Hydrometeorological Monitoring Centre (CCMH) in partnership with the government of the state of Espírito Santo, providing greater safety and protection for the site's equipment and, more importantly, to people's lives at our operations at Tubarão Port.

**Regulatory** | There are two main risks of a regulatory nature. The first are the emission limits or carbon taxes that can lead to decreased economic activity and a reduction in demand for our products. The second are new regulations requiring investment in new technologies for industrial processes, monitoring systems and emission abatement or new infrastructure, resulting in rising costs of production, transportation and extraction. **EC2**

### Supplier engagement

In 2014, we promoted our third Forum on GHG Management in order to exchange experiences and debate the challenges on this theme. Since 2012, we have trained 195 of our suppliers in the preparation of GHG inventories to encourage our value chain to manage its emissions, and in 2014, we received 102 inventories in line with our voluntary clause.<sup>11</sup>

Our Scope 3 emissions verified for the entire value chain totalled 255 million tCO<sub>2</sub>e, and renewable emissions totalled 6,732 tCO<sub>2</sub>e over the year. The chart below presents Vale's Scope 3 emissions by category.<sup>12</sup>

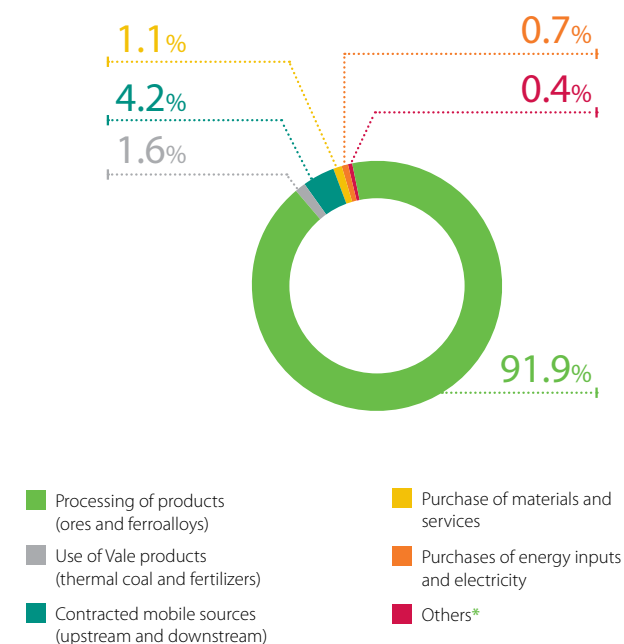
<sup>10</sup> The Intergovernmental Panel on Climate Change (IPCC) defines vulnerability as "the degree of a system's susceptibility to the adverse effects of climate change, or its inability to administer these effects, including variable or extreme climatic conditions. Vulnerability is a function of the character, dimension and level of climatic variation to which a system is exposed, its sensitivity and ability to adapt".

<sup>11</sup> We have included a voluntary clause in our contracts on the provision of GHG emission inventories since 2012.

<sup>12</sup> The following categories are not included in Scope 3 emissions: generated waste, as this is not material; treatment of end of life products sold, leased assets and franchises, as these are not applicable; and investments, as these have still not been calculated.

### 2014 Indirect GHC Emissions

Scope 3 – Total of 255 million metric tons of CO<sub>2</sub>e



\* Capital goods, employee air travel, contracted employee land transport.

In 2014 we promoted our third Forum on GHG Management in order to promote debate and exchange experiences



## Water Resources

Faced with new patterns of population growth, energy production and climatic conditions, the need to protect the planet's water resources is increasing, as this is an important asset for current and future generations. In 2014, the importance of water efficiency led the United Nations (UN) to draw the world's attention to the relationship between water and energy.

Water is an indispensable input in the mining process, although other activities use more of this resource, both in Brazil and globally. According to the National Water Agency,<sup>13</sup> about 60% of the water extracted from the environment is used for irrigation for agriculture and livestock activities. The industrial sector, which includes mining, requires 17% but consumes 7%, returning 10% to the environment. The total extraction for the industrial sector has been calculated as 2.2%.<sup>14</sup>

We seek to ensure water conservation through initiatives that go beyond the legal requirements. We do this in a range of ways: from the development of innovative technologies to participation in the development of legal instruments for the management of water resources. In 2014, about 9% (US\$76 million) of Vale's total environmental investments were directed to water resource management.

We extended our challenge to reduce the volume of new water to include our total demand: water extracted from the environment and reused and recycled water. From 2015, we will be concentrating our efforts into optimizing productive processes.

As some of our operations are located in regions with low levels of water infrastructure, we support development in this area, benefitting the surrounding communities. This is the case for around 160 families in the rural community of Rio Grande in São Luís (Maranhão). They have benefitted from the implantation of the Community Centre Water Supply System and the Rio Grande Community Allotment. These went into operation in February 2014, contributing to domestic tap water supplies and vegetable production over more than 11 hectares of community allotments, livestock and fish farming activities.

<sup>13</sup>. Data for 2010 obtained from the National Water Agency's publication: Conjuntura dos Recursos Hídricos no Brasil (The Water Resource Situation in Brazil), from 2013.

<sup>14</sup>. Percentage calculated from our data published in the 2010 Sustainability Report and data from the 2013 publication of Conjuntura dos Recursos Hídricos no Brasil.

## Green Seal Program

In order to adapt our facilities to match the concept of Efficient Buildings, which use solutions to save natural resources, reduce pollution and respect the environment, in 2012 our operational management for the Vitória-Minas Railway created the Green Seal Program. This is based on PGS standard 002585 and uses a classification system from E to A, from less to more efficient and evaluating a range of requirements including use of rainwater, use of solar panels, light sensors in communal areas, timers on taps and urinals, LED-bulb lighting, toilets with double flush mechanisms, separation and correct disposal of waste and the substitution of normal batteries for rechargeable batteries. In 2014, 40 buildings belonging to the Logistical Operations Department received this recognition for their solutions to reduce the consumption of natural resources and waste generation.



# 9%

Total environmental expenditure over the year destined towards the management of water resources. This percentage represents an investment of around US\$76 million



## Engagement Mechanisms

We follow discussions on water in the global and local spheres, and work closely with government bodies, enabling us to predict trends and participate in regulatory changes. In Brazil, we participate in 33 River Basin Committees (CBHs) incorporated at our 39 operational units located in river basins, including those in the four river basins from which we have the highest demand for new water: Cubatão, Araguari, Piracicaba and das Velhas. CBHs, in accordance with Brazilian water resources policy are, amongst other attributes, responsible for:

- addressing priorities for water use, conflict management, the approval of plans for water resources in river basins;
- defining and establishing charging mechanisms; and

- suggesting the amounts to be charged, which need to be approved by the National Water Resources Council or by the respective State Councils, depending on the water's dominion.

According to the legislation, charges can only be made for water use that is subject to approval, meaning that charges have not yet been established for all Brazilian river basins. Therefore, our operations incur water charges in river basins where the values of these charges have already been established.

We seek to mobilize our water specialists from different areas of the business through Water Resources Subcommittee, where we discuss technological challenges and regulatory trends

related to water and waste management. In 2014, we promoted a meeting focused on the exchange of experience in activities developed by the River Basin Committees and on the current scenario in water resources policy in Brazil, with the aim of improving our interaction with other users of water resources, in a coordinated and integrated manner.

In addition, we maintained our participation in the National Confederation of industry's (CNI) Water Resources Network, and, in 2014, we also occupied the Presidency of the Water Thematic Chamber of the Brazilian Business Council for Sustainable Development (CEBDS), representative of the World Business Council for Sustainable Development's (WBCSD) in Brazil.

## Monitoring

The improvement of monitoring programmes and equipment is essential in the management of water resources, as this identifies waste and potential improvements, contributes to the reliability of data and reduces total water demand.

From 2011 to 2014 we developed over 500 projects to install leak monitoring equipment, and 300 of these have already been purchased or installed. At the Tubarão Complex, the installation of modern and automated meters has led to a reduction in total water demand of approximately 30%.

In addition, we continued our studies related to the company's water footprint, with a pilot project being developed at our Ferrous Metals sites using ISO Regulation 14046: Water footprint – Principles, Requirements and Guidelines as a reference. **EN8**

We have also developed the Integrated Surface Water Monitoring Network in Minas Gerais, in the river basins of the Velhas and Paraopeba rivers where 14 of our operational sites are located. Launched in 2012, this project aims to optimize monitoring by establishing standards and partnerships with environment and water agencies. In 2014, this initiative was replicated in 12 of our operations located in the river basins of the Carmo, Piracicaba and Santo Antônio rivers, in Minas Gerais, and in four operations in the North System and the S11D project, currently being installed, in the river basin of the Itacaiúnas River, in Pará. The three proposals for these networks and their respective network plans, where we extracted approximately 30% of our total volume of new water in 2014, were referred to the relevant environmental bodies for evaluation. The projects designed for our operations in the river basins located in Minas Gerais have been approved by the Minas Gerais Institute for Water Management (Igam in Portuguese), covering 26 operational sites.

As presented in the following map, around 80% of our sites are located in areas of "low" or "low to medium risk" of hydric stress and represent approximately 90% of the volume removed from the environment. Less than 7% of our operations are located in regions of high or extreme risk of hydric stress and are responsible for approximately 8% of the total volume of water captured by the company. At our Complexo de Bayovar site in Peru, the water supply for processes is obtained by desalination of seawater.

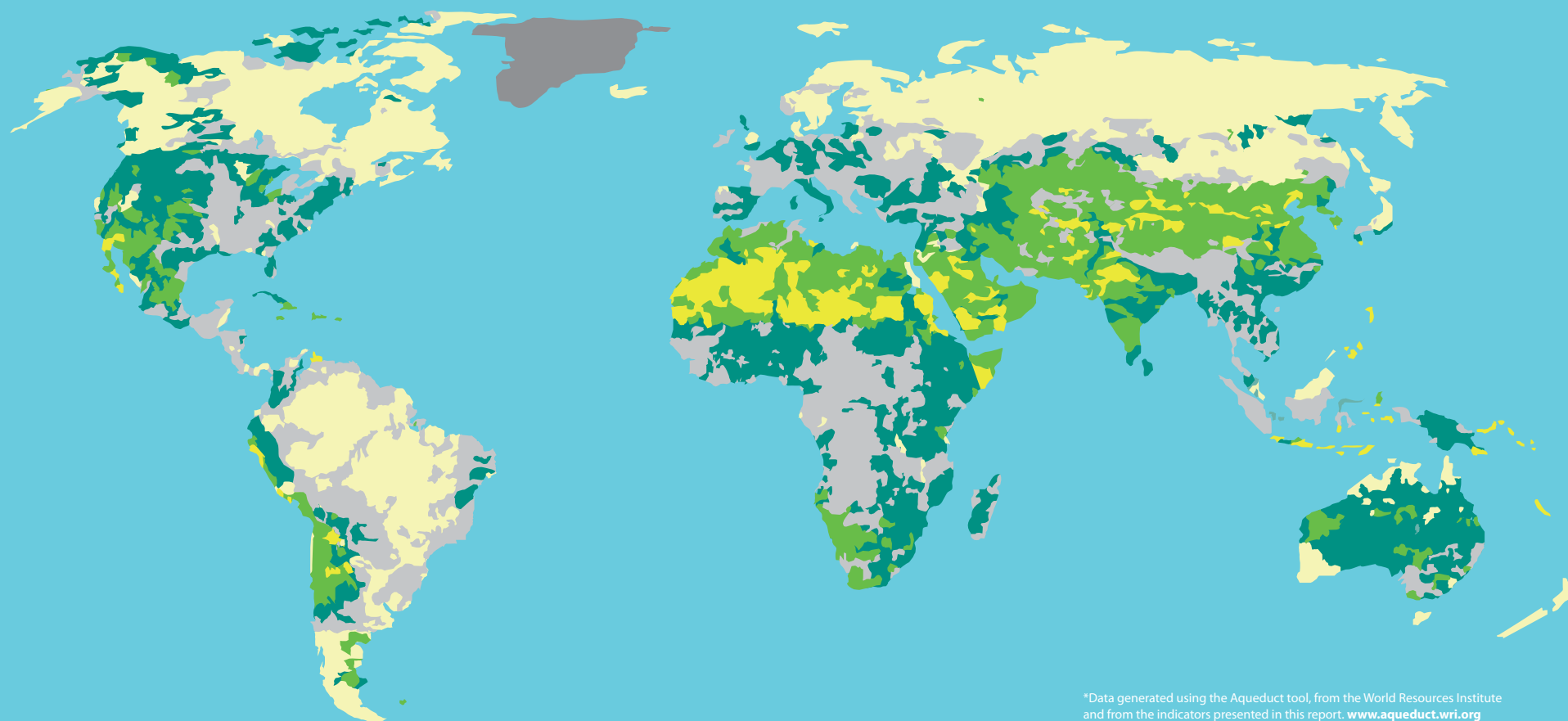


# 30%

Reduction in total  
water demand at the  
Tubarão Port as  
a result of the  
installation of modern  
automated meters



# Water stress risk areas\*



\*Data generated using the Aqueduct tool, from the World Resources Institute and from the indicators presented in this report. [www.aqueduct.wri.org](http://www.aqueduct.wri.org)

## Vale operations in these areas

Argentina	01
Australia	02
Brazil	44
Canada	04
China	01

Indonesia	01
Japan	01
Mozambique	01
New Caledonia	01
Oman	01

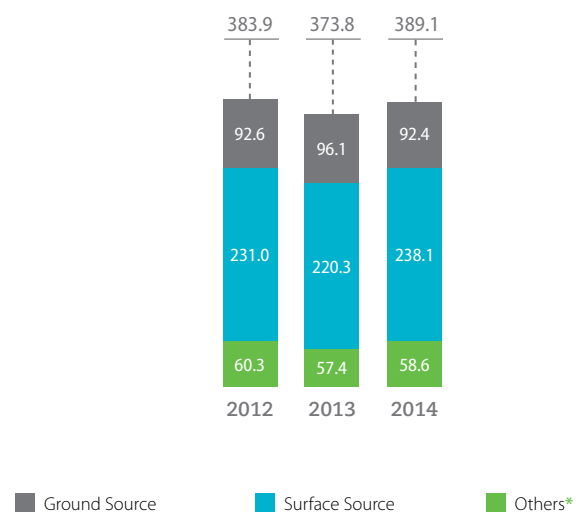
Paraguay	01
Peru	01
United Kingdom	02
Taiwan	01

Risk	Operations	Distribution (%)
Low	13	21%
Low to medium	36	58%
Medium to high	8	13%
High	3	5%
Extreme	1	2%
No data	1	2%



## Total water extracted by source EN8

In million m<sup>3</sup>/year



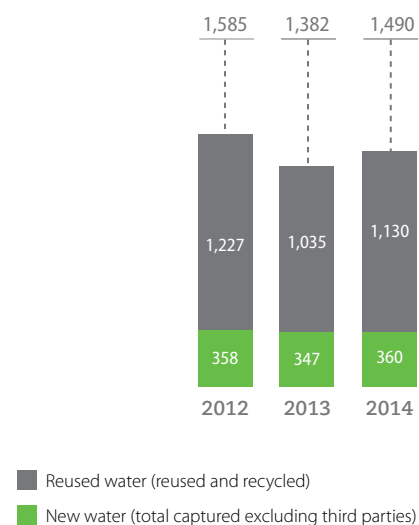
\* Rainwater capture, from water supply/concessionaire companies or other organizations. Surface water and groundwater, which is captured exclusively for the use of third parties, is also included in this category.

## Total demand

In 2014, Vale reused 76% of its water. We no longer extract 1.130 million m<sup>3</sup> of water from natural resources. The company's water reuse increased by 1% compared to 2013 (75%). Concerning the total demand (extracted, recycled and reused water), there was an increase of approximately 8% in relation to

## Total water demand\*

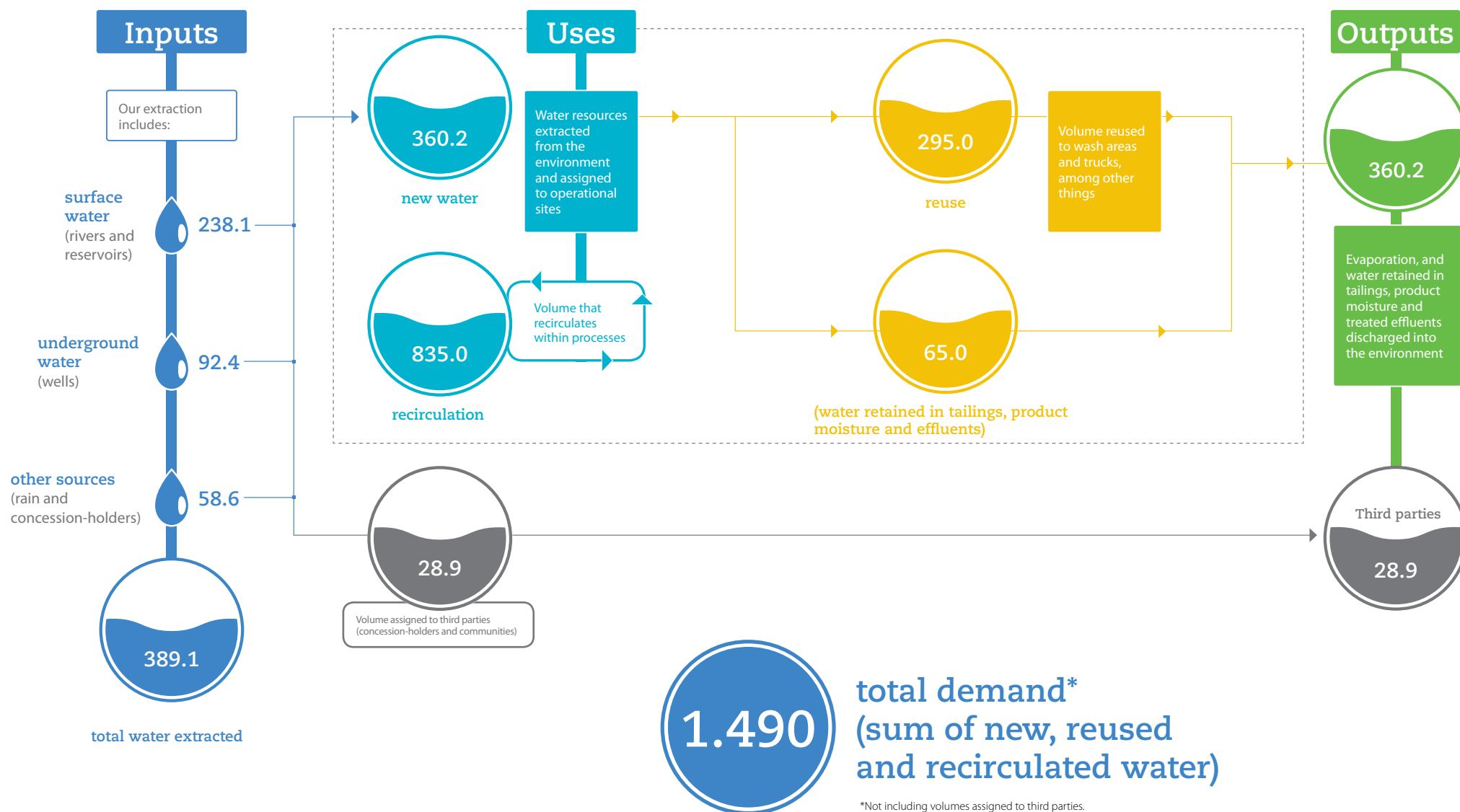
In million m<sup>3</sup>/year



\* In general, data is obtained through direct measurement, except for some operations, in which estimates are taken and analysed according to the respective water balance. We are continuously improving our measurement processes.

the previous year. This is due to increases in production in the following business areas: iron ore (6.8%), pellets (10.2%), nickel (5.7%), copper (2.6%) and phosphate rock (1.7%). EN8, EN10

# Vale's simplified water balance (million m<sup>3</sup>)








# 2,600

square kilometres is  
the size of our total  
operational area, with 39%  
of this dedicated to the  
extraction of ore and 61%  
to industrial plantations

## Biodiversity and land use

Vale has made progress in constructing its corporate strategy for biodiversity, and aligned with its Sustainable Development Policy, has established prevention, control, mitigation and compensation actions for all stages of project life cycles.

The company's goal is to mitigate the impacts of land use while preserving and recovering territories in the regions where we operate and including our approach to ecosystem services<sup>15</sup> to our activities relating to water, climate change, energy, and communities. The aim is to take into account the specific characteristics of each region and seek net positive impacts<sup>16</sup> over the long term. **EN14**

To strengthen this goal, in 2014 we joined the Business Partnership for Ecosystem Services (PESE II), with the completion of training on the implementation of the Business Evaluation of Ecosystem Services (ESR) methodology. In addition, we contributed to the development of the document "Payment for Environmental Services: Recommendations for the

Brazilian Regulatory Framework" (developed by the Biodiversity and Biotechnology Thematic Chamber of the Brazilian Business Council for Sustainable Development (CEBDS)).<sup>17</sup>

Our operational sites correspond to 2,600 km<sup>2</sup>, 39% of which are dedicated to the extraction of ores, industrial production, processing and product transportation, and 61% are used for initiatives relating to industrial plantations. Of these, 60% are focused on the rehabilitation and maintenance of native vegetation<sup>18</sup> and the remainder are dedicated to productive planting. In comparison to 2013, Vale's operational areas sites were reduced by an area of 2,300 km<sup>2</sup> (47%) as a result of the divestment of Vale Logística Integrada (VLI), Vale Florestar (industrial plantation) and Três Valles (sold in 2013 but reported).

Of all of Vale's operations, 73.7% are in areas classified as wilderness areas and 16.4% in hotspots,<sup>19</sup> distributed over nine countries as follows:<sup>20</sup>

- 11.9%, or 307.6 km<sup>2</sup> in areas of high biodiversity value outside protected areas;
- 8.5%, or 220.5 km<sup>2</sup> adjacent to areas of high biodiversity value;
- 23.2% or 600 km<sup>2</sup> close to legally protected areas; and
- 8.6%, or 222.3 km<sup>2</sup> in legally protected areas (conservation areas). **EN11**

The removal of vegetation may be necessary during the implementation of projects or during the development of operational activities, such as the expansion of mining areas, of waste rock disposal and of tailings dams.

<sup>15</sup>. Functions and processes of ecosystems and the species that contribute to maintaining life on the planet, including the provision of resources (food, water, timber and fibre), support (soil formation, photosynthesis and nutrient cycles) and regulation (associated with climate regulation, flood control, control of infectious diseases and pests and maintenance of water and air quality).

<sup>16</sup>. When the results of actions taken by the company outweigh the negative effects of its operations.

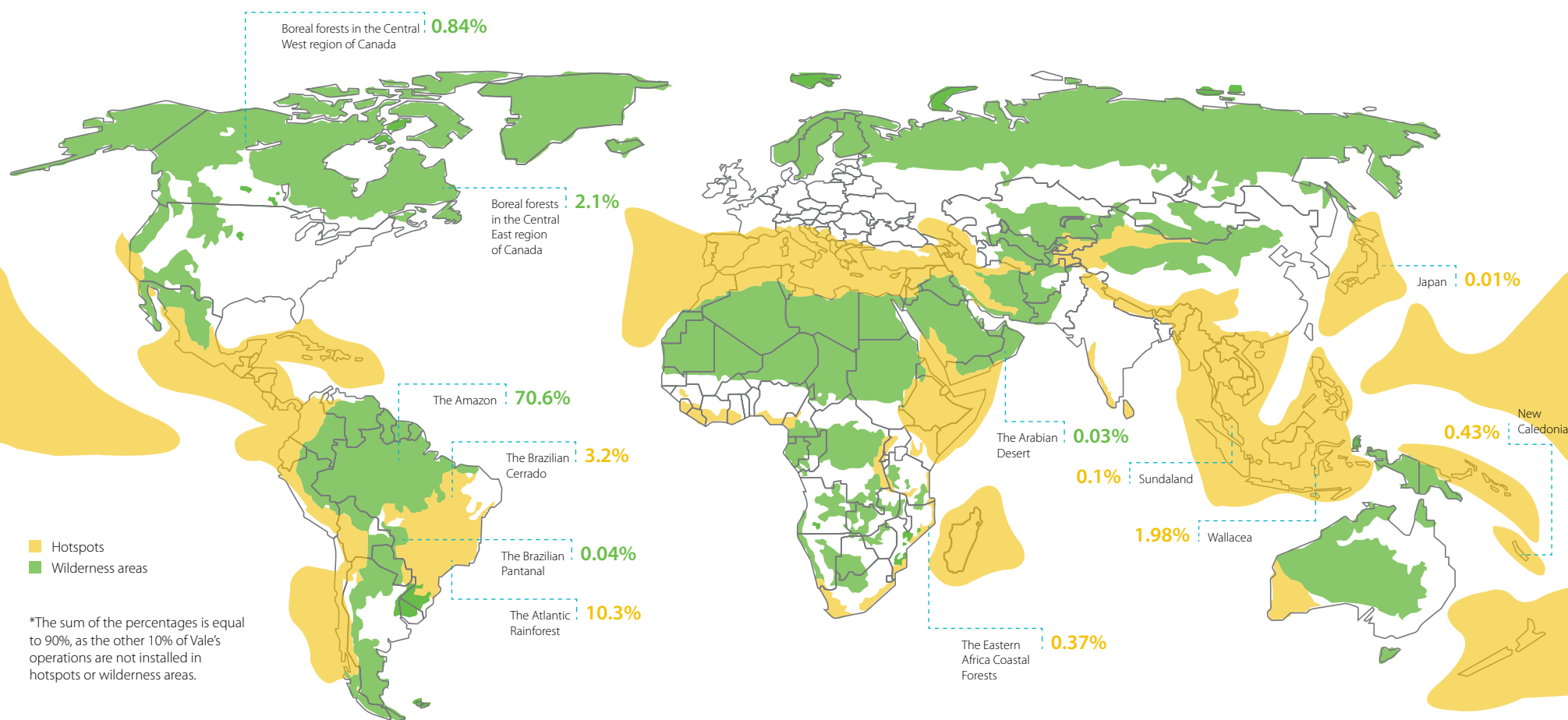
<sup>17</sup>. Available to the public at: [cebds.org/publicacoes/pagamento-por-servicos-ambientais](http://cebds.org/publicacoes/pagamento-por-servicos-ambientais).

<sup>18</sup>. Areas dedicated to the recuperation and maintenance of native vegetation include Legal Reserves and Permanent Preservation Areas (APP) at properties used for industrial plantation.

<sup>19</sup>. Hotspots and wilderness areas are large geographical areas considered to be important for world flora and fauna conservation. They function as complimentary categories of biodiversity importance and are officially recognized by various international organizations.

<sup>20</sup>. For the calculation of adjacent areas, a buffer of 10 km from the external boundaries of protected areas and areas of high biodiversity value (surroundings) were considered, and their overlap with operational areas was evaluated. Territories related to indigenous land were not considered in these analyses.

# Distribution of Vale's assets in hotspots and wilderness areas



Map adapted from Mittermeier *et al*, 2003 and 2004

## Some highlights of our biodiversity management programs include:

**In the state of Pará – monitoring of fresh water fauna and flora in the areas of influence of the Sossego Mine**, with the aim of monitoring endangered, endemic, rare, new and potentially invading species, as well as mapping habitats in order to guide action plans.

**In the state of Minas Gerais – contribution to biodiversity protection policy**, with the aim of raising awareness about respect and protection for animals and disseminating information on biodiversity to increase protection and assist public authorities in the management of the state's fauna.

The main risks and direct and indirect impacts on biodiversity related to our activities are primarily associated with changes in components of the physical environment that support the biotic environment (flora and fauna), and can cause changes in biodiversity and ecosystems. Some of the main direct impacts are the loss of species (removal of flora and accidental death of fauna specimens) and fragmentation and loss of habitats. Indirect (secondary) impacts include the scaring off of species and changes in the composition of populations and communities (fauna and flora). In addition, there may be changes to ecosystem functions, such as interference in water bodies caused by digging or the construction of tailings dams. **EN12**

In 2014, 4,172 plant species and 3,342 animal species were identified at our operational areas, of which approximately 6.2% are on the Red List of the International Union for the Conservation of Nature (IUCN) and 2.4% are on the official endangered species lists produced by Brazil's Ministry of Environment. **EN15**

### Biodiversity management

We develop Biodiversity Management Plans for every stage of the company's project life cycles. These plans include actions to prevent, control, mitigate and compensate for the impacts of the company's activities, and include compulsory and voluntary actions. In addition, we adopt initiatives to conserve biodiversity, including the maintenance of protected areas.

In 2014, 48% of our operations required a Biodiversity Management Plan, totalling 75, of which 88% have already been implemented, and the remainder are in scope definition or detailing phase. We also began to map initiatives and mitigation measures for the management and reduction of impacts on biodiversity. In total, 55 actions were analyzed, 57% of which were mandatory and 43% voluntary. **MM2**

### Protected natural areas

One of our main conservation measures is the maintenance of protected areas, which contributes to the environmental balance and the preservation of natural resources and ecosystems services. We protected 15,200 km<sup>2</sup> of natural areas through our own initiatives

and through partnerships, which are almost 5.9 times larger than the total sum of the area taken up by our operational sites, which is 2.6 thousand km<sup>2</sup>. Without taking into account land used for industrial plantations, this area is 15 times bigger.<sup>21</sup> In comparison to 2013, the number of protected areas is 2,800 km<sup>2</sup> larger as a result of the inclusion of the Serra do Amolar Protection and Conservation Network area in the Pantanal, protected as part of a partnership.

Of this total, 98% of these areas were protected in conjunction with local governments and 2% were in areas belonging to the company. An example of this is the development of Private Natural Heritage Reserves (RPPNs in Portuguese) and State Conservation Units located in the Iron Quadrangle of Minas Gerais, which are owned by Vale, as well as the Forêt Nord Nature Reserve in New Caledonia, which we protect through partnerships. In terms of location, 57% of these areas are in regions classified as wilderness areas and 43% are located in hotspots. In addition, 76% of these natural areas are close to our operational units and 24% are in areas outside of our operations.

<sup>21</sup> This value is significantly higher than 2013 due to the sale of assets and increase in protected areas.



# 15,200

square kilometres  
of natural areas are  
protected by us,  
whether through our  
own initiatives or  
through partnerships





Protected area	Location	Biome	Property	Area (km <sup>2</sup> )
Carajás National Forest	Brazil (Pará)	Amazon Rainforest	ICMBio Partnership <sup>I</sup>	4,119.5
Tapirapé-Aquiri National Forest	Brazil (Pará)	Amazon Rainforest	ICMBio Partnership	1,900.0
Itacaiúnas National Forest	Brazil (Pará)	Amazon Rainforest	ICMBio partnership	1,414.0
Tapirapé Biological Reserve	Brazil (Pará)	Amazon Rainforest	ICMBio partnership	1,030.0
Igarapé do Gelado Environmental Protection Area	Brazil (Pará)	Amazon Rainforest	ICMBio Partnership	216.0
São Luís Botanical Park	Brazil (Maranhão)	Amazon Rainforest	Vale owned	1.1
Tubarão Botanical Park	Brazil (Espírito Santo)	Atlantic Forest	Vale owned	0.3
Vale Nature Reserve	Brazil (Espírito Santo)	Atlantic Forest	Vale owned	227.1
Sooretama Biological Reserve	Brazil (Espírito Santo)	Atlantic Forest	ICMBio Partnership	240.0
12 Private Natural Heritage Reserves (RPPN) in the Iron Quadrangle in Minas Gerais	Brazil (Minas Gerais)	Atlantic Forest	Vale owned	70.4
Two Private Natural Heritage Reserves (RPPN) associated with Vale's fertilizer operations	Brazil (Minas Gerais)	Brazilian Cerrado	Vale owned	1.6
32 State Conservation Sites located in the Iron Quadrangle	Brazil (Minas Gerais)	Atlantic forest and Brazilian Cerrado	SEMAD/IEF <sup>II</sup> Partnership	3,090.8
Protected areas at four small hydropower plants (SHPs)	Brazil (Minas Gerais)	Atlantic Forest	Vale owned	3.3
Ilha Grande State Park	Brazil (Rio de Janeiro)	Atlantic Forest	INEA Partnership <sup>III</sup>	120.5
Serra do Amolar Protection and Conservation Network	Brazil (Mato Grosso do Sul)	Pantanal	IHP Partnership <sup>IV</sup>	2,760.9
Forêt Nord Nature Reserve	New Caledonia	Forest and Maquis Shrubland <sup>V</sup>	Partnership with the Government of New Caledonia	2.7
Pic du Grand Kaori Reserve	New Caledonia	Forest and Maquis Shrubland	Partnership with the Government of New Caledonia	3.1
Vale Malaysia Ecological Centre (Vale Do Eco Centre)	Malaysia	Sundaland	Vale owned	2.9
Total				15,204.2

I. Source: Chico Mendes Institute for Biodiversity Conservation (ICMBio) (<http://www.icmbio.gov.br>) Ministry of Environment.

II. Environment and Sustainable Development State Secretariat (Semad), State Forestry Institute (IEF), Minas Gerais State Government.

III. Source: State Environment Institute (INEA), Rio de Janeiro State Government.

IV. Source: Homem Pantaneiro Institute (IHP).

V. Type of natural vegetation in the New Caledonia hotspot.

In addition, in 2014 the Fundo Vale increased by 21% its contribution to the protection and/or sustainable development of natural areas in conservation sites, settlements and indigenous land, covering 279,000 km<sup>2</sup> across six sites in the Amazon (Acre, Amazonas, Mato Grosso, Pará, Rondônia and Roraima). With a focus on conservation and the containment of illegal deforestation, the Fundo Vale's Protected Areas and Biodiversity Program works through partnerships with socio-environmental institutions, government and local communities for the integrated management of protected areas, supporting actions that strengthen environmental governance, form social and biodiversity value chains and strategically monitor our territories (more information can be found at [www.fundovale.org](http://www.fundovale.org)). **EN13**

### Recovery of areas

As part of its biodiversity strategy, Vale conducts land restoration activities. In degraded areas recuperation measures aim at a level of recovery which allows areas to develop without further human interference. We also contribute to the environmental balance of these areas through the maintenance and protection of factors that prevent the harmful agents from affecting the recovery of the land.

The recovery process occurs in parallel with operational activities, and the quality and effectiveness of activities are monitored through the use of appropriate indicators and technical procedures. We adopt a methodology that allows us to demonstrate

the effectiveness of our work along time, using geographical data analysis and the registration of geo-referenced polygons in recovering and suppressed areas superimposed onto high resolution images. In addition, during mine closure our final results are verified by independent external professionals.

In the search for new technological solutions and best practice in environmental restoration, we have developed Research and Development (R&D) projects, often in partnership with educational and research institutions. These projects are focused on cost reduction, the selection of native plant species for potential use in environmental restoration, improvements to technique and the development of indicators to show the quality of environmental restoration. We also seek greater knowledge of native species ecology, transforming this into a positive legacy for scientific communities and collaborating in the adoption of the practices in use.

To disseminate our actions and best practices, we also support events and initiatives promoted by universities and research institutions. In 2014, we sponsored the X National Symposium on the Recovery of Degraded Areas (SINRAD in Portuguese), the main event of this kind in Brazil. Focused on market expectations, the objective of the symposium is to create practical solutions that are applicable to companies' activities so that academic knowledge can be translated for use in operations. **EN13, MM1**

### Impacted and restored areas\* (in km<sup>2</sup>)

Status	2012	2013	2014
Impacted	22.9	18.4	35.8
Recovery (total)	12.8	17.8	24.4
Permanent	7.2	10.8	16.5
Temporary	5.6	7.1	7.9

\* Considering all of our activities.

We develop Research and Development projects in order to seek new technological solutions and best practices in environmental recuperation

## Opening and closing balance (in km<sup>2</sup>)\* MM1

Year	Impacted areas (opening balance)	Impacted areas in the reference year	Areas undergoing permanent restoration in the reference year	Impacted areas (closing balance)
2012	588.8	14.8	7.1	596.5
2013	596.5	11.0	8.1	599.4
2014	599.4	28.4	15.5	612.3

\* Considering just our extraction and ore production activities.

### Caves

Natural underground caves, also known as caverns or grottos, are an important subject for Vale's business. We have a dedicated speleology area that ensures maximum utilization of mineral reserves and complies with legal requirements for the conservation of speleological heritage. We also seek to enhance technical knowledge of these natural structures, contributing to the growth and the spread of scientific knowledge.

At the Carajás S11D Project in Pará, for example, all the caves in the project area have been studied in terms of their physical, biological, cultural and historical attributes, complying with legal requirements related to licensing in areas with natural caves and considering their relevance in a local and regional context. The caves classified as being of maximum significance<sup>28</sup> will be fully preserved.

Vale develops environmental programs and actions specifically aimed at the area's speleological heritage. One example is our Bio-Speleology Program involving innovative biotelemetry initiatives in bats, infrared molecular analysis and DNA extraction for taxonomic purposes. The program also involves the remote monitoring of environmental and vibration indicators in these caves and the development of a robot capable of inspecting caves with a high risk of collapse, significantly increasing our operational security.

In addition, we carry out operational research to evaluate the interference of mining activities in the biological and physical characteristics of caves in ferriferous lithology. Priority was given to relevant aspects and speleological variables that can increase the understanding of cave formation processes, cave ecology and the maintenance of their physical integrity.

At the Carajás S11D Iron Project, all of the caves in the area were studied, fulfilling legislative requirements

The results obtained reinforce our commitment to the evaluation and development of actions aligned with the main concerns raised by our stakeholders.

### Cangas and rocky outcrops

Canga is a type of rock, originally described in Brazil, that is also found in various tropical and subtropical regions around the world. It is a product of the weathering of iron-rich rocks. Owing to its hard surface, it has a higher resistance and is responsible for supporting sloped areas. This same characteristic promotes surface drainage, leading to seasonal waterfalls and difficulties in the installation of bulky vegetation. Therefore, the predominant vegetation in canga regions are rocky outcrops – ecosystems rich in biodiversity yet still relatively unstudied.

<sup>28</sup> Caves with unique or rare genesis, unique morphology, notable dimensions in terms of length, area or volume or with unique speleothems.



Restoration programs for areas impacted by mining activities in these environments require more consistent information to achieve good results. Aware of the importance of this issue, Vale has developed several projects to rehabilitate these environments in its operational areas, as well as supporting research projects together with a number of Brazilian universities, some of which through the Vale Institute of Technology (ITV).

Vale has been investing in ecological studies of canga environments since 2007, in order to increase our understanding of the biology of the species that inhabit this ecosystem and then implement these results in preservation, conservation and restoration projects. Studies with the same purpose are also being developed in the Iron Quadrangle region. In addition to benefitting from the results of these studies in terms of its own activities, Vale has also contributed to the scientific community, sharing the knowledge it has generated.

### Rural Environmental Record

Created by the Ministry of Environment (MMA in Portuguese) for the online registration of environmental information on property and rural assets throughout Brazil, the Rural Environmental Record (CAR in Portuguese) aims to control, monitor, plan and combat deforestation.

Registration of rural property on the CAR is nationwide, single and permanent. Through MMA Regulation 2/14, of May 5, which deployed this register on a nationwide basis, the legal deadline for landowners to register is one year, and this may be renewed for the same period.

Registration on the CAR is required in order to obtain Permit to Remove Native Vegetation, to register with the Environmental Regularisation Program (PRA) and to obtain access to agricultural credit lines, among other actions. Registered companies must provide information on the property owner or possessor, the location of any remaining native vegetation, of Permanent Preservation Areas (APPs), Legal Reserves, areas of restricted use, public easement and compensation areas and consolidation areas, and must provide georeferenced terrain plans.

The CAR imposes a direct relationship between the delimitation of legal reservation areas and the identification of areas of restricted use and permanent preservation areas. In this way, it acts as a tool to bring together information and integrate actions for Environmental Regularization Programs (PRA).

Aiming to comply with the required percentages for Legal Reserves and the recovery of Permanent Preservation Areas, as well as forestry legislation in general, Vale operates seamlessly and effectively in registering its rural properties with the CAR.

In order to do this, we evaluate the different means of compensation for Legal Reserves established by federal forestry and state legislation. The Legal Reserve compensation alternatives provided for by law enable the compliance of our operations, expansions and projects while meeting the requirements of this territorial conservation and management mechanism. At the same time, they contribute to reducing the fragmentation of forest areas, providing the conditions that ensure their ecological function.

# 21%

The increase in 2014 of the Fundo Vale's contribution to the protection and/or sustainable development of natural areas in conservation sites, settlements and indigenous land




# 48%

of our operations in 2014 required Biodiversity Management Plans, a total of 75, of which 88% have already been implemented and the remainder are in the scope definition or detailing phase

## Environmental compliance

In 2014, two new relevant lawsuits<sup>29</sup> for environmental non-compliance were filed and two were closed<sup>30</sup> after agreements were signed and fines<sup>31</sup> were paid to the value of approximately US\$6.47 million. **EN28**

A lawsuit was filed by the community questioning the environmental licensing of one of the pelletizing plants at the Tubarão Complex in Vitória, Espírito Santo. This lawsuit questions the quality of the environmental studies that were presented to the regulator. We disagree with these allegations, and presented our case for defence in 2014. The case is currently under analysis by the relevant judge.

In May, there was a spill of industrial effluent from our operations in New Caledonia, which reached the North Bay Creek in the Southern Province of New Caledonia. The leak was contained within a few hours by neutralizing and pumping back the neutralized

effluent, and there were no significant lasting impacts to the environment or local indigenous populations. As a result of this leak, an action was filed against the company for compensation. Consideration is ongoing in respect of communications with the NGOs and our response to the civil claim.

## Lawsuits previous to 2014

The Chico Mendes Institute for Biodiversity Conservation (ICMbio) filed a Notice of Violation against Salobo Metais S.A. as a result of a fire that occurred in the Carajás National Forest. Our defence, based on technical expert reports, demonstrated that our activities had no relation to the fire, and we requested that the Notice of Violation be dismissed and that the imposed file be suspended. We are awaiting the analysis and decision from the regulator.

The Human Rights Society for the State of Maranhão is heading up a group that filed a public-interest civil action against the company, questioning the environmental licensing procedure for the expansion work to the Carajás Railway (EFC) and the impacts to neighbouring communities. We clarified that the environmental licensing procedure was carried out according to federal, state and municipal law and based on dialogue with indigenous and quilombola communities. A recent legal decision by the Regional Federal Tribunal (TRF) recognized that the measures adopted by Vale were in full compliance with the requirements of the relevant technical and environmental authorities, authorizing the continuation of the expansion work to the EFC.

**29.** Legal proceedings are considered relevant based on at least one of the following criteria: a) their value, including compensation claims and fines over US\$2.15 million; b) if they involve a subject of interest to the company or affect the general public, regardless of value; c) cases where activities are paralysed.

**30.** The company Ferrovia Centro-Atlântica (FCA), controlled by Vale until August 2014, has been sold and there will be no more reports into this company's processes.

**31.** Vale states that existing cases that fit the relevant criteria and discloses only the values that have a certain amount recognized as due or already paid, to better serve the scope of **EN28** and **SO8** GRI indicators and to avoid possible distortions regarding the reality of administrative and judicial proceedings, as they are still awaiting a final decision, usually have no definition or precision of values under discussion. Estimated provisioned values according to accounting criteria are available in Vale's 20-F report.

We were fined by the Brazilian Institute of Environment and Natural Resources (IBAMA) for the inputs used in the expansion and maintenance of the Carajás Railway (EFC) and the possible environmental effects this generated. We presented our case for defence, but this being unsuccessful we ended up paying the amount due. This case was closed in 2014.

In the municipality of Vitória (Espírito Santo), there is an ongoing public-interest civil action filed by the Brazilian National Friends of the Environment Association (ANAMA) which involves VALE, IEMA, IBAMA, the Municipality of Vitória and the Federal Union, for alleged atmospheric pollution, which is claimed to have caused harm to health, safety and well-being in the population of Baía de Camburi, as a result of operations at the Tubarão Complex. We have carried out a range of strict emission prevention and mitigation measures, and that the company is not the sole and principal source of pollution in the region, which will be clarified as the case proceeds. This action is currently in the technical evaluation phase.

Also in relation to atmospheric emissions, we have an ongoing case in Oman in which the Vale Oman Pelletizing Company LLC, among other defendants,

is being questioned on the control of particulate emissions from the company's pelletizing plant. We are waiting for technical expert evaluations to be completed in order to verify these allegations.

The Ubu and Parati Fishermen Association (APUP) in Espírito Santo filed a collective action against Vale, in which it alleges alleged environmental damage and interference in fishing activities as a result of the company's marine surveying. No agreement was reached during the conciliation phase, and the parties involved presented their cases. This case has been awaiting a decision since November, 2014.

Urucum Mineração S.A.<sup>32</sup> presented a case for defence in a public-interest civil action at the Court of Corumbá (Mato Grosso do Sul), which request the rehabilitation of the Urucum Stream and the recuperation of environmental damage. This action was suspended in order to carry out environmental studies and for the inclusion of the relevant regulatory authorities.

In the municipality of Itabira (Minas Gerais) we have two cases of compensation claims for alleged environmental and social damage caused by our iron ore operations in the area. We also have another

four ongoing cases in Minas Gerais questioning the licensing of the Capão Xavier mine, belonging to Minerações Brasileiras Reunidas S.A. (MBR).<sup>33</sup>

In the state of Maranhão, we are disputing the alleged interference in fishing activities, allegedly caused by iron ore falling into the sea during loading onto our ships. This process is currently at the beginning stages.

We also have an administrative case in which we are disputing the value due regarding Environmental Compensation for the Salobo Project. After an arbitration ruling by IBAMA on the amount of compensation due, we filed an appeal requesting that the costs associated with social and environmental measures and programs be deducted, as provided by law.

In addition, we are disputing a request by the Federal Prosecution Office for the annulment of our Installation Licence for the Carajás Railway expansion project, as a result of the alleged inadequacy of studies on the impacts generated in the municipality of Açailândia

<sup>32</sup>. Urucum Mineração S.A. was recently incorporated by Mineração Corumbaense Reunida S.A.

<sup>33</sup>. MBR was recently incorporated by Grupo Vale S.A.

(Maranhão). The injunction sought by the Federal Prosecution Office was rejected and the process is currently in the evidence collection phase. We are also questioning a similar demand by the Federal Prosecution Office that we suspend our construction work on another branch of the Ferro Carajás Railway.

We have also inherited more lawsuits associated with the companies incorporated into the Vale Group as a result of acquisitions in the area of fertilizers.<sup>34</sup> One of these is related to the alleged pollution of groundwater at the Uberaba Industrial Complex in Minas Gerais, where the company has signed a legal agreement and finalized the process.

We are also presenting our case for defence in compensation claims in the community of Barreiro in Araxá (Minas Gerais) for alleged contamination. This action is currently in the technical evaluation phase.

Vale and Vale Fertilizers, together with many other companies, are being investigated for the alleged illegal disposal of waste that was sent to a company responsible for adequate waste disposal, located in the municipality of Ulianópolis (Pará). It was established that this company was not carrying out its obligations correctly. An investigation is underway to verify if there has been any contamination of the soil and to propose correct remediation measures to be managed by the public authorities and the companies involved in the case.

We also have another action relating to the restoration of the Serra do Mar Park, where negotiations are underway to sign a legal agreement between the companies at the Cubatão Petrochemical Pole and the State Prosecution Office (GAEMA).

Vale Fertilizers is also disputing a fine being imposed for delays in the fulfilment of obligations in a Conduct Adjustment Agreement (TAC), signed during a public-interest civil action, for the construction of a Effluent Treatment Plant (ETEL), among other construction projects, at the site in Cajati (São Paulo). The construction of the ETEL has been finalized and the facilities have already been awarded a temporary Operational Licence. Other compensation actions are still being disputed with the public authorities.

We regret the need to resolve social and environmental issues within the legal system, and we make every effort to ensure that cases are resolved in a way that is adequate for all parties involved and for the environment.

<sup>34</sup> The company has abandoned the Anitápolis Project (Santa Catarina), that was reported in previous years, and is now seeking to have this lawsuit discontinued.



We have invested in ecological studies of canga environments in order to increase our understanding of the biology of the species that inhabit this ecosystem



# Report scope

In accordance with GRI methodology, companies can be classified into three categories, and these categories will determine the way that they will be covered in this report.

**Performance indicators** | In addition to our own units, this classification includes companies controlled and/or operated by Vale. For companies in this category, sustainability performance is reported through the indicators included throughout this report.<sup>1</sup> Information on recently-acquired companies or new projects is considered where applicable and according to the progressive reporting of indicators that we have already adopted. The scope of the companies and projects included in each indicator reported may vary according to the availability of information. The main exceptions, where applicable, are highlighted.

**Management approach** | This category includes companies or entities over which Vale has significant influence. It includes affiliates, of which Vale owns 20% to 50% of the voting capital, either directly or indirectly, and companies or entities in which Vale exercises shared control. Vale has positions in the different governing bodies of these organizations, and may also participate in committees dealing with environmental, health and safety, human resources and finance issues, among other topics. Through these mechanisms,<sup>2</sup> Vale participates in strategic decision making and influences the development of rules and policies at these companies or entities,<sup>3</sup> including in terms of sustainability issues.

**Issues and dilemmas** | This classification includes companies over which Vale has influence, including affiliates in which Vale owns less than 20% of the voting capital, directly or indirectly. In these cases, relevant themes in sustainability are those associated with: any environmental issues as a result of our activities (ThyssenKrupp-CSA and Mineração Paragominas S.A.), exposure to environmental risks in offshore oil and gas exploration activities (BM-ES-27 oil and gas consortium); transit in areas with urban communities (MRS Logística S.A.); and issues related to the use of water resources for electricity generation (Consórcio Machadinho). This reduction in participation in Norte Energia S.A. is consistent with Vale's strategy to maximize value for its shareholders.

<sup>1</sup>. Companies with no productive activity, such as commercial offices, were not included in the report on performance as they had a limited impact on sustainability.

<sup>2</sup>. Not applicable for companies in oil and gas consortia.

<sup>3</sup>. In accordance with legislation in effect in the company's place of establishment.

The following table presents how Vale's main companies (according to trade name), were considered in this report in terms of sustainability.

Business	Performance indicators	Management Approach	Issues and Dilemmas
Iron ore and Pellets	■ Vale S.A. <sup>4</sup>	■ Samarco Mineração S.A.	
	■ Companhia Ítalo-Brasileira de Pelotização (Itabasco) <sup>5</sup>	■ Zhuhai YPM Pellet Co. Ltd.	
	■ Companhia Coreano-Brasileira de Pelotização (Kobrasco) <sup>5</sup>	■ Anyang Yu Vale Yongtong Pellet Co. Ltd.	
	■ Companhia Nipo-Brasileira de Pelotização (Nibrasco) <sup>5</sup>		
	■ Companhia Hispano-Brasileira de Pelotização (Hispanobras) <sup>5</sup>		
	■ Vale Oman Pelletizing Company LLC		
	■ Mineração Corumbaense Reunida (MCR)		
	■ Vale BSGR Limited (VBG) (Simandou Project) <sup>6</sup>		
Manganese and Ferroalloys	■ Vale Manganeês S.A.		

<sup>4</sup>. Including operations by the companies Minerações Brasileiras Reunidas S.A. (MBR), Minas da Serra Geral S.A. (MSG) and Baovale Mineração S.A. (Baovale).

<sup>5</sup>. Assets operated by Vale.

<sup>6</sup>. On March 13, 2015, Vale transferred its stake in this joint venture. The project's activities had been paralyzed since 2013.



Business	Performance indicators	Management Approach	Issues and Dilemmas
Copper	<ul style="list-style-type: none"> <li>Vale S.A.</li> <li>Vale Canada Limited</li> <li>Salobo Metais S.A.</li> </ul>	<ul style="list-style-type: none"> <li>Lubambe Copper Mine Ltd.</li> </ul>	
Logistics	<ul style="list-style-type: none"> <li>Vale S.A.<sup>7</sup></li> <li>Mineração Corumbaense Reunida (Gregório Curvo Port)</li> <li>Transbarge Navegación (TBN)</li> <li>Companhia Portuária Baía de Sepetiba (CPBS)</li> <li>Vale Oman Distribution Center</li> <li>Seamar Shipping</li> <li>Vale Shipping Singapore</li> <li>Vale Shipping Company</li> <li>Vale Shipping Enterprise</li> <li>Vale Logística Argentina S.A. (San Nicolás Port)</li> <li>Central East African Railway (CEAR) – Nort Development Corridor (CDN)</li> <li>PT Vale Indonesia Tbk (PTI) (Balintang and Harapan Tanjung Mangkasa special ports)</li> <li>Vale Malaysia Minerals</li> </ul>	<ul style="list-style-type: none"> <li>Consórcio de Rebocadores da Barra dos Coqueiros (CRBC)</li> <li>Consórcio de Rebocadores da Baía de São Marcos (CRBSM)</li> <li>VLI S.A. (Ferrovia Centro-Atlântica S.A. (FCA) and Ferrovia Norte-Sul S.A. (FNS)<sup>9</sup></li> </ul>	<ul style="list-style-type: none"> <li>MRS Logística S.A.<sup>8</sup></li> </ul>
Fertilizers	<ul style="list-style-type: none"> <li>Compañía Minera Miski Mayo S.A.C. (Bayóvar Project)</li> <li>Vale Fertilizantes S.A.<sup>10</sup></li> <li>Potasio Río Colorado S.A.<sup>11</sup></li> </ul>		
Steelmaking		<ul style="list-style-type: none"> <li>Califórnia Steel Industries (CSI)</li> </ul>	<ul style="list-style-type: none"> <li>ThyssenKrupp-CSA Siderúrgica do Atlântico Ltda.<sup>12</sup></li> </ul>
Aluminium		<ul style="list-style-type: none"> <li>Mineração Rio do Norte S.A. (MRN) (Bauxita)</li> </ul>	<ul style="list-style-type: none"> <li>Mineração Paragominas S.A.</li> </ul>
Coal	<ul style="list-style-type: none"> <li>Vale Moçambique S.A. (Moatize)</li> <li>Vale Australia Pty Ltd.<sup>13</sup></li> </ul>	<ul style="list-style-type: none"> <li>Shandong Yankuang Int. Coking Co. Ltd.</li> <li>Henan Longyu Energy Resources Co. Ltd.</li> <li>Vale Austrália (Isaac Plains)<sup>14</sup></li> </ul>	

<sup>7</sup>. Including operations on the Carajás Railway (EFC) and the Vitória-Minas Railway (EFVM).

<sup>8</sup>. Vale gave up its voting and veto rights for its share in MRS, according to ANTT Resolution No. 1,394 of April 11, 2006.

<sup>9</sup>. Even though Vale kept 37.6% of the total capital of VLI S.A., as this transaction was concluded during 2014, we have maintained the performance of some environmental indicators for Ferrovia Centro-Atlântica S.A. and Ferrovia Norte-Sul S.A.

<sup>10</sup>. Vale Fertilizantes S.A. includes the performances of various different companies within the business.

<sup>11</sup>. The project's activities have been paralyzed since 2013.

<sup>12</sup>. Despite Vale having a 26.87% participation in this company, it falls within this category, as according to an agreement with the shareholders, Vale cannot recommend administrators for the management of the company.

<sup>13</sup>. Integra Coal's operations were paralyzed in May 2014, but as it still belongs to the Vale S.A. group, some indicators were still reported. Only Carborough Downs' operations are still active.

<sup>14</sup>. Operation under care and maintenance since September 2014.



Business	Performance indicators	Management Approach	Issues and Dilemmas
Energy	<ul style="list-style-type: none"> <li>■ Biopalma da Amazônia S.A. (Reforestation, Industry and Trade)</li> </ul>	<ul style="list-style-type: none"> <li>■ Vale Soluções em Energia S.A. (VSE)<sup>15</sup></li> <li>■ Energy consortia:<sup>16</sup> Igarapava, Porto Estrela, Candonga, Capim Branco, Funil,<sup>17</sup> Aimorés,<sup>17</sup> Consórcio Estreito Energia (CESTE) and Geração Santa Isabel (GESAI)</li> <li>■ Companies in the Santo Inácio Wind Project<sup>16</sup> (Central Eólica Garrote Ltda., Central Eólica Santo Inácio III Ltda., Central Eólica Santo Inácio IV Ltda., Central Eólica São Raimundo Ltda.)</li> <li>■ Central Eólica Santo Inácio V Ltda<sup>19</sup></li> <li>■ Central Eólica Santo Inácio VI Ltda<sup>20</sup></li> <li>■ Oil and gas exploration consortia (Consórcio BM-PAMA-10, Consórcio BM-PAMA-11, Consórcio BM-PAMA-12, Consórcio SF-T-81)<sup>21</sup></li> </ul>	<ul style="list-style-type: none"> <li>■ Machadinho Consortium</li> <li>■ Norte Energia S.A. (UHE Belo Monte)<sup>18</sup></li> <li>■ BMES- 27 Consortium<sup>21</sup></li> </ul>
Nickel	<ul style="list-style-type: none"> <li>■ Vale S.A. (Onça Puma)</li> <li>■ Vale Canada Limited</li> <li>■ Vale Newfoundland &amp; Labrador Ltd.</li> <li>■ Vale Europe Limited</li> <li>■ PT Vale Indonesia Tbk</li> <li>■ Vale Nouvelle-Calédonie S.A.S.</li> <li>■ Vale Nickel (Dalian) Co. Ltd.</li> <li>■ Vale Japan Limited</li> <li>■ Vale Taiwan Limited</li> </ul>	<ul style="list-style-type: none"> <li>■ Korea Nickel Corporation</li> </ul>	

<sup>15</sup>. Although Vale has the majority of votes for entities recorded using the equity method, consolidation is prevented as the control is shared.

<sup>16</sup>. From February 2015, Vale has participated in these ventures through the Aliança Geração de Energia S.A. (Aliança Geração) joint venture.

<sup>17</sup>. Consortia terminated with their assets managed by Aliança Geração de Energia S.A. (Aliança Geração).

<sup>18</sup>. Vale has participated in this company since March 2015 through Aliança Norte Energia Participações S.A. (Aliança Norte), which retains a participation of 9% of the capital of Norte Energia S.A. As a result, Vale's indirect participation in the capital of Norte Energia is 4.59%.

<sup>19</sup>. At the end of 2013, the consortium "Central Eólica Santo Inácio V Ltda." had its name changed to Aliança Geração de Energia S.A., 55% of which belongs to Vale and 45% to CAMIG GT.

<sup>20</sup>. At the end of 2013, the consortium "Central Eólica Santo Inácio VI Ltda." had its name changed to Aliança Norte Energia Participações S.A., 55% of which belongs to Vale and 45% to CAMIG GT.

<sup>21</sup>. Oil and gas activities are provided through a consortium according to the different percentages of participation and Vale's resulting influence over this asset.

# GRI Content Index



## Profile

Strategy and analysis		Global Compact	Compliance with GRI	Page
1.1	Statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization and its strategy.	-	●	9 and 10
1.2	Description of key impacts, risks, and opportunities.	-	●	2, 20, 47, 64 and 83
Organizational profile		Global Compact	Compliance with GRI	Page
2.1	Name of the organization.	-	●	13
2.2	Primary brands, products, and/or services.	-	●	13
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	-	●	13
2.4	Location of organization's headquarters.	-	●	13
2.5	Number of countries where the organization operates and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	-	●	13
2.6	Nature of ownership and legal form.	-	●	13
2.7	Markets served (including geographic breakdown, sectors served and types of customers/beneficiaries).	-	●	13
2.8	Scale of the reporting organization.	-	●	13, 40 to 43 and 55
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	-	●	2 and 3
2.10	Awards received in the reporting period.	-	●	32

- Complete
- ◐ Partial
- Not material

Report parameters		Global Compact	Compliance with GRI	Page
3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	-	●	2
3.2	Date of most recent previous report (if any).	-	●	2
3.3	Reporting cycle (annual, biennial, etc.).	-	●	2
3.4	Contact point for questions regarding the report or its contents.	-	●	3
3.5	Process for defining report content, including: a) determining materiality, b) prioritizing topics within the report and c) identifying stakeholders the organization expects to use the report.	-	●	2
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, and suppliers).	-	●	3
3.7	State any specific limitations on the scope or boundary of the report.	-	●	3
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations and other entities that can significantly affect comparability from period to period, and/or between organizations.	-	●	3
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.	-	●	2
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/ acquisitions, change of base years/periods, nature of business, and measurement methods).	-	●	3
3.11	Significant changes from previous reporting periods in the scope, boundary or measurement methods applied in the report.	-	●	3
3.12	Table identifying the location of the Standard Disclosures in the report.	-	●	104 to 116
3.13	Policy and current practice with regard to seeking external assurance for the report.	-	●	2
Governance, commitments and engagement		Global Compact	Compliance with GRI	Page
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	1-10	●	18
4.2	Indicate whether the Chair of the highest governance body is also an executive officer (and, if so, their function within the organization's management and the reasons for this arrangement).	-	●	19
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent, and/or non-executive members.	-	●	19

Governance, commitments and engagement		Global Compact	Compliance with GRI	Page
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	-	●	19
4.5	Linkage between compensation for members of the highest governance body, senior managers and executives (including departure arrangements) and the organization's performance (including social and environmental performance).	-	●	19 and 20
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	-	●	21
4.7	Process for determining the qualifications and expertise of the members of the highest governance body for guiding the organization's strategy on economic, environmental, and social topics.	-	●	19
4.8	Internally developed statements of mission or values, codes of conduct and principles relevant to economic, environmental, and social performance and the status of their implementation.	-	●	18
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	-	●	19
4.10	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	-	●	19
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	7	●	21
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	1-10	●	29
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations in which the organization: a) has positions in governance bodies, b) participates in projects or committees, c) provides substantive funding beyond routine membership dues or d) views membership as strategic.	1-10	●	29
4.14	List of stakeholder groups engaged by the organization.	-	●	2, 28 and 29
4.15	Basis for identification and selection of stakeholders with whom to engage.	-	●	2, 28 and 29
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	-	●	2, 28 and 29
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	-	●	2 and 3

## Economic performance indicators

Aspect: Economic performance			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 4, 6 and 7	●	40 and 41
EC1	Core	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers, and governments.	-	●	41
EC2	Core	Financial implications and other risks and opportunities for the organization's activities due to climate change.	7	●	83 and 84
EC3	Core	Coverage of the organization's defined benefit plan obligations.	-	○	-
EC4	Core	Significant financial assistance received from government.	-	●	Read more information in the Tax Incentives section in the Report 20-F available at <a href="http://www.vale.com">www.vale.com</a> .
Aspect: Market presence			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 4, 6 and 7	●	58, 71 and 72
EC5	Additional	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.	1	◐	58. Vale does not disclose salary values as this information is confidential.
EC6	Core	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	-	●	71
EC7	Core	Procedures for local hiring and proportion of senior management hired from the local community at locations of significant operation.	6	●	71
Aspect: Indirect economic impacts			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 4, 6 and 7	●	63 to 65
EC8	Core	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, inkind, or pro bono engagement.	-	●	44 and 45; 66 and 67
EC9	Additional	Understanding and describing significant indirect economic impacts, including the extent of impacts.	-	●	64

## Environmental performance indicators

Aspect: Materials			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7, 9	○	-
EN1	Core	Materials used by weight or volume.	8	○	-
EN2	Core	Percentage of materials used that are recycled input materials.	8, 9	○	-
Aspect: Energy			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	80 to 84
EN3	Core	Direct energy consumption by primary energy source.	8	●	81 and 82
EN4	Core	Indirect energy consumption by primary source.	8	●	81 and 82
EN5	Additional	Energy saved due to conservation and efficiency improvements.	8, 9	●	83
EN6	Additional	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	-	○	-
EN7	Additional	Initiatives to reduce indirect energy consumption and reductions achieved.	8, 9	●	34 and 37; 83
Aspect: Water			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	85 to 90
EN8	Core	Total water withdrawal by source.	8	●	89
EN9	Additional	Water sources significantly affected by withdrawal of water.	8	○	-
EN10	Additional	Percentage and total volume of water recycled and reused.	8, 9	●	89
Aspect: Biodiversity			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	91 to 97
EN11	Core	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	8	●	91 and 94
EN12	Core	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	8	●	93
EN13	Additional	Habitats protected or restored.	8	●	95
EN14	Additional	Strategies, current actions, and future plans for managing impacts on biodiversity.	8	●	91
EN15	Additional	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	8	●	93



Aspect: Emissions, effluents and waste			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	77 and 78; 80 to 84
EN16	Core	Total direct and indirect greenhouse gas emissions by weight.	8	●	80 and 81
EN17	Core	Other relevant indirect greenhouse gas emissions by weight.	8	●	80 and 81
EN18	Additional	Initiatives to reduce greenhouse gas emissions and reductions achieved.	7-9	●	83
EN19	Core	Emissions of ozone-depleting substances by weight.	8	○	-
EN20	Core	NOx, SOx, and other significant air emissions by type and weight.	8	●	77
EN21	Core	Total water discharge by quality and destination.	8	○	-
EN22	Core	Total weight of waste by type and disposal method.	8	○	-
EN23	Core	Total number and volume of significant spills.	8	○	-
EN24	Additional	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	8	○	-
EN25	Additional	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	8	○	-
Aspect: Products and services			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	○	-
EN26	Core	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	7-9	○	-
EN27	Core	Percentage of products sold and their packaging materials that are reclaimed by category.	8, 9	○	-
Aspect: Compliance			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	98 to 100
EN28	Core	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with environmental laws and regulations.	8	●	98
Aspect: Transport			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	80 and 81
EN29	Additional	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	8	○	80

Aspect: Overall			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	44 and 45
EN30	Additional	Total environmental protection expenditures and investments by type.	7, 9	●	44 and 45

### Labor practices and decent work performance indicators

Aspect: Employment			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 3 and 6	●	55;58 and 59
LA1	Core	Total workforce by employment type, employment contract, and region.	-	●	55
LA2	Core	Total number and rate of employee turnover by age group, gender, and region.	6	●	59
LA3	Additional	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	-	●	58

Aspect: Labor/management relations			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 3 and 6	●	62 and 63
LA4	Core	Percentage of employees covered by collective bargaining agreements.	1, 3	●	63
LA5	Core	Minimum notice period(s) regarding operational changes, including whether it is specified in collective agreements.	3	●	63

Aspect: Occupational health and safety			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 3 and 6	●	49 to 54
LA6	Additional	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	1	●	53
LA7	Core	Rates of injury, occupational diseases, lost days, and absenteeism, and number of workrelated fatalities by region.	1	●	50 and 53
LA8	Core	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	1	●	52
LA9	Additional	Health and safety topics covered in formal agreements with trade unions.	1	●	63

Aspect: Training and education			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 3 and 6	●	56 to 57
LA10	Core	Average hours of training per year per employee by employee category.	1	●	57
LA11	Additional	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	1	○	-
LA12	Additional	Percentage of employees receiving regular performance and career development reviews.	1	●	58
Aspect: Diversity and equal opportunity			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1, 3 and 6	●	60 to 62
LA13	Core	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	1, 6	●	60
LA14	Core	Ratio of basic salary of men to women by employee category.	1, 6	●	60 and 61
Human rights performance indicators					
Aspect: Investment and procurement practices			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	○	-
HR1	Core	Percentage and total number of significant investment agreements that include human rights clauses or that have undergone human rights screening.	1-6	○	-
HR2	Core	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	1-6	○	-
HR3	Additional	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	1-6	○	-
Aspect: Non-discrimination			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	●	23 and 24
HR4	Core	Total number of incidents of discrimination and actions taken.	1, 2 and 6	●	24
Aspect: Freedom of association and collective bargaining			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	●	62 and 63
HR5	Core	Operations identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.	1-3	●	62

Aspect: Child labor			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	○	-
HR6	Core	Operations identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.	1, 2, 5	○	-
Aspect: Forced and compulsory labor			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	○	-
HR7	Core	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of forced or compulsory labor.	1, 2, 4	○	-
Aspect: Security practices			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	○	-
HR8	Additional	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	1, 2	○	-
Aspect: Indigenous rights			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-6	●	73 to 75
HR9	Additional	Total number of incidents of violations involving rights of indigenous people and actions taken.	1, 2	●	75
Society performance indicators					
Aspect: Community			Global Compact	Compliance with GRI	Page
Disclosure on management approach			10	●	64 to 66
SO1	Core	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	-	●	66
Aspect: Corruption			Global Compact	Compliance with GRI	Page
Disclosure on management approach			10	●	21 to 24
SO2	Core	Percentage and total number of business units analyzed for risks related to corruption.	10	●	22
SO3	Core	Percentage of employees trained in organization's anti-corruption policies and procedures.	10	●	22
SO4	Core	Actions taken in response to incidents of corruption.	10	●	23

Aspect: Public policy			Global Compact	Compliance with GRI	Page
Disclosure on management approach			10	●	24, 67 and 86
SO5	Core	Public policy positions and participation in public policy development and lobbying.	10	●	24
SO6	Additional	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	10	●	24
Aspect: Anti-competitive behavior			Global Compact	Compliance with GRI	Page
Disclosure on management approach			10	●	34
SO7	Additional	Total number of legal actions for anticompetitive behavior, anti-trust, and monopoly practices and their outcomes.	-	●	34
Aspect: Compliance			Global Compact	Compliance with GRI	Page
Disclosure on management approach			10	●	33 and 34
SO8	Core	Monetary value of significant fines and total number of non-monetary sanctions for noncompliance with laws and regulations.	-	●	33
Product responsibility performance indicators					
Aspect: Customer health and safety			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-8	○	-
PR1	Core	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	1	○	-
PR2	Additional	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	1	○	-
Aspect: Product and service labeling			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-8	○	-
PR3	Core	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	8	○	-
PR4	Additional	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	-	○	-
PR5	Additional	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	-	○	-

Aspect: Marketing communications			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-8	○	-
PR6	Core	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	-	○	-
PR7	Additional	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	-	○	-
Aspect: Customer privacy			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-8	○	-
PR8	Additional	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	-	○	-
Aspect: Compliance			Global Compact	Compliance with GRI	Page
Disclosure on management approach			1-8	○	-
PR9	Core	Monetary value of significant fines for noncompliance with laws and regulations concerning the provision and use of products and services.	-	○	-
Environmental section					
Aspect: Biodiversity			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	91 and 97
MM1	Amount of land (owned or leased, and managed for production activities or extractive use) disturbed or rehabilitated.		-	●	91 and 96
MM2	The number and percentage of total sites identified as requiring biodiversity management plans according to stated criteria, and the number (percentage) of those sites with plans in place.		-	●	93
Aspects: Emissions, effluents and waste			Global Compact	Compliance with GRI	Page
Disclosure on management approach			7-9	●	77 and 78; 80 to 84
MM3	Total amounts of overburden, rock, tailings, and sludges and their associated risks.		-	○	



## Social section

### Labor practices and decent work performance indicators

Aspect: Labor/Management Relations	Global Compact	Compliance with GRI	Page
<b>Disclosure on management approach</b>	<b>1,3,6</b>	●	<b>62 and 63</b>
MM4 Number of strikes and lock-outs exceeding one week's duration, by country.	-	●	<b>63</b>

### Human rights performance indicators

Aspects: Indigenous Rights	Global Compact	Compliance with GRI	Page
<b>Disclosure on management approach</b>	<b>1-6</b>	●	<b>73 and 74</b>
MM5 Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities.	-	●	<b>73</b>

### Society performance indicators

Aspect: Community	Global Compact	Compliance with GRI	Page
<b>Disclosure on management approach</b>	<b>10</b>	●	<b>75</b>
MM6 Number and description of significant disputes relating to land use, customary rights of local communities and Indigenous Peoples.	-	●	<b>75</b>
MM7 The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes.	1, 2	●	<b>75</b>
Aspect: Artisanal and Small-scale Mining	Global Compact	Compliance with GRI	Page
<b>Disclosure on management approach</b>	-	○	-
MM8 Number (and percentage) of company operating sites where artisanal and small-scale mining (ASM) takes place on, or adjacent to, the site; the associated risks and the actions taken to manage and mitigate these risks.	-	○	-

Aspect: Resettlement		Global Compact	Compliance with GRI	Page
Disclosure on management approach		-	●	75 and 76
MM9	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process.	-	●	75 and 76
Aspect: Closure planning		Global Compact	Compliance with GRI	Page
Disclosure on management approach		-	●	78
MM10	Number and percentage of operations with closure plans.	-	●	78
Product responsibility performance indicators				
Aspect: Materials stewardship		Global Compact	Compliance with GRI	Page
Disclosure on management approach		8, 9	○	-
MM11	Programs and progress relating to materials stewardship.	8, 9	○	-

● Complete  
 ● Partial  
 ○ Not material

# Independent assurance statement

## Bureau Veritas certification



### Introduction

Bureau Veritas Certification Brazil (Bureau Veritas) was hired by Vale S.A. (Vale), to conduct an independent assessment of its Sustainability Report (hereinafter referred to as the Report), encompassing assessment of the content, quality, and boundaries of same with regard to the year 2014.

The information published in the Report is the sole responsibility of Vale's management. Our responsibility was to provide independent verification, in accordance with the scope of work defined below.

### Scope of Work

A limited level of assurance (ISAE 3000)<sup>1</sup> was provided and conducted according to the Guidelines and Principles<sup>2</sup> of the Global Reporting Initiative GRI-G3 (2006). The Assurance scope included the GRI Mining and Metal Sector Supplement, 2010, referred to as Version 3.0/MMSS, Final Version.

The main objective of a Limited assurance is to assess the ability of the organization to prepare a Report that adheres to the Principles of the GRI and does not prioritize the assessment of internal control mechanisms.

Excluded from the scope of this work was any assessment of information relating to:

- Activities outside the defined assessment period;
- Statements of position (expressions of opinion, beliefs, goals, or future intentions) on the part of Vale;
- Economic and financial information contained in this Report which has been taken from financial statements verified by independent financial auditors.

### Methodology

The Assurance covered the following activities:

1. Interviews with the personnel responsible for material issues and Report content;
2. Analysis of documentary evidence provided by Vale in relation to the reporting period (2014);
3. Verification of performance data relating to the principles that ensure the quality of the information, pursuant to the GRI Version 3.0/MMSS;
4. Review of Vale's internal systems for data aggregation;

5. Visits to the following sites: Global Head Office (Rio de Janeiro/RJ), Industrial Complex of Cubatão (CCB and Phosphate CUB)<sup>3</sup> and Piaçaguera (CPG)<sup>3</sup>; Complex of: Carajás (Pará), Tubarão, (Espírito Santo), Itabira (Minas Gerais) and Bayovar (Peru).

6. Desk review of Vale's stakeholder engagement activities.

<sup>1</sup> ISAE 3000: International Standard on Assurance Engagements and the GRI G3 guidelines

<sup>2</sup> Materiality, Stakeholder Inclusiveness, Sustainability Context, Completeness, Balance, Comparability, Accuracy, Periodicity, Clarity, and Reliability

<sup>3</sup> These units were verified according to the Principles of Accuracy and Reliability, limited to the following indicators linked to the Green House Gas Emission Inventory: **EN3, EN4, EN16, EN17 and EN19**

## Our findings against the report and assurance process

- Vale elaborated the Report pursuant to the model of GRI version 3.0/MMSS, embracing the GRI Principles and the Mining & Metal Sector Supplement, final Version 2010;
- We verified the application of the Protocol of Limits of the GRI (2005) to determine the scope of the Report and the nature of the reported information (Operational data/ Management Performance/ Description of the Strategy and Dilemmas) that represents those companies in which Vale has an interest. It is considered that the report is easily comparable by readers with previous versions;
- Vale conducted a new Materiality assessment in 2014, pursuant to the GRI-G4 methodology. The four dimensions presented, which organize the material issues, provide a logical structure for the development of these issues over the Report and enable better balance of the information published. However, we verified that the sample of external stakeholders consulted in the process of Materiality assessment was limited;
- Data published to meet GRI indicators EN3, EN4, EN16, EN17 and EN19 are part of the Inventory of greenhouse gas (GHG) emissions, that has been compiled based on ISO 14064-1/07 and the Brazilian Program - GHG Protocol and certified by Bureau Veritas through a separate independent assurance process. We verified that the presentation of data concerning the emissions inventory was based on the da GRI-G4 methodology;
- Vale uses a system of data sheets for collecting data and information from its operational units. During our field visits we identified some discrepancies in the interpretation of the data requested, which made the compiling of the information associated therewith more difficult;
- Vale presents satisfactorily the results of the implementation of the Sustainability Module,

associated with the risk analysis of suppliers. This work is of utmost importance for the responsible development of the company's supply chain;

- In the course of our verification the inconsistencies identified in the Report regarding one or more principles of the GRI 3.0/MMSS were satisfactorily revised;
- Vale has published data or justified its absence regarding the applicable core indicators of GRI Version 3.0/MMSS, rightfully self declaring GRI application level A+;

## Opportunities of improvement for the nex reporting cycle

- Continue presenting the results of the implementation of the Sustainability Module, which has been developed by Vale, in its analysis of suppliers risks, since 2013;
- Increase the sample of external stakeholders to be consulted in the next Materiality assessment, as this allows a better balance for the definition of the material issues;
- Strengthen the qualification in the operational units regarding the understanding of the data and information requested through the data sheets for the collection of indicators.

## Conclusion

As a result of our Assurance nothing has come to our attention that would indicate that:

- The information presented in the Report is not balanced, consistent and reliable;
- Vale has not established appropriate systems for the collection, aggregation and analysis of quantitative and qualitative data used in the Report;
- The self-declaration of level of application A+, pursuant to the criteria of GRI G3/SSMM, shall not be trustworthy.

## Declaration of independence and impartiality

Bureau Veritas Certification is an independent professional services firm specializing in Quality, Health, Safety, Social and Environmental Management, with more than 180 years' experience in independent assessment.

No member of the assessment team has any commercial links with Vale. We performed this assessment independently and understand that there was no conflict of interest.

Bureau Veritas has implemented a Code of Ethics throughout its business, in order to preserve high ethical standards among its staff in the performing of their activities.

At the end of the assessment, a detailed report was drawn up, showing all the topics verified, any deviations found, corrective action taken and opportunities for improvement. This Report ensures the traceability of the process and is kept as a Bureau Veritas management system record.

## Contact

<http://www.bureauveritascertification.com.br/fale-conosco> or by telephone (11) 2655-9000.

São Paulo, abril de 2015.



**Alexander Vervuurt**

Lead Auditor; Assurance Sustainability Reports (ASR)  
Bureau Veritas Certification – Brazil

# Production

## General coordination

Environment

## Editorial support

Corporate Communication

## Operational support

Ernst & Young

## External verification

Bureau Veritas Certification

## Editorial coordination and graphic production

TheMediaGroup

## Translation

Batata Comunicações