

# Vale's Integrated Management System Manual

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## *Integrated Management System*

This Manual describes Vale's Integrated Management System - IMS, providing guidance for application of the specific procedures.



**SUMMARY**

Purpose .....3

Organizational Context .....3

Scope.....3

Application.....3

Definitions .....3

Structure of Vale's IMS.....4

1. Policy, Objectives and Targets .....4

2. Hazards and Risks/ Aspects and Impacts/ Management of Change.....4

3. Legal and Other Requirements.....5

4. Leadership, Roles and Responsibilities .....5

5. Competence, Training and Behavioral Development.....7

6. Communication, Participation and Consultation ..... **Erro! Indicador não definido.**

7. Documents, Records and Information .....8

8. Operational Control .....9

9. Emergency Preparedness and Response .....12

10. Preventive Actions, Incident and Nonconformity Management.....12

11. Inspection and Audits.....12

12. Monitoring, Performance Indicators and Continuous Improvement.....13



## **Purpose**

Present and describe Vale's Integrated Management System - IMS, providing guidance for application of the specific procedures.

## **Organizational Context**

Vale is a miner with acting in the following segments: Iron, Nickel, Coal, Copper, Fertilizers, Manganese and Ferroalloys, from the extraction, processing and marketing and has a logistics network that integrates mines, railways, ships and ports.

Vale's activities vary from exploration in diverse and remote locations to the development of new projects, operations and disposal of assets. These activities are supported by a multicultural workforce and geographically dispersed.

Vale and its subsidiaries are committed to implement management systems and practices of health, safety, quality and environment in all its operations, ensuring the understanding strategic of the issues related to these subjects, which may affect the ability to achieve results expected by the organization.

Such practices are committed to ensure Zero Harm to workers and communities, prevention of pollution and quality in the management of its processes, considering the needs and expectations of the relevant stakeholders.

Vale publishes its Sustainability Report annually under the model of the Global Reporting Initiative (GRI) and, in this report, all internal and external governance is presented, with determination and updating of pertinent issues, determination of internal and external stakeholders and expectations of themselves.

## **Scope**

Vale's IMS covers the activities of mineral exploration, development and implementation projects, extraction, processing, production of ferrous pellets, industrial activities, rail and road transportation and organization's port activities at global level.

Vale's IMS aims to identify and address impacts and risks to the workers, environment and facilities, in order to manage and reduce them within tolerable levels.

The main focus of this workbook is to specify the Integrated Management System requirements, seeking the management of performance in health, safety and the environment, being mandatory the compliance with the guidelines presented here for these disciplines. Matters arising from the Quality Management related to health, safety and environment processes disciplines are also covered in this manual. Similarly, it is noteworthy that specifically within the Requirements 2 - Hazards and Risks/Aspects and Impacts/Management of Change, and 8 - Operational Control, we discuss items related to the themes "Communities" and "Human Rights".

## **Application**

Vale's IMS is applicable in different manners throughout the life cycle of activities, since the mineral exploration, going through development and implementation projects, operation and decommissioning of its assets for all workers, including those of contractors. For the other entities that Vale holds an interest, it is recommended the reproduction according to Planning, Development and Management Standard (NFN-001).

## **Definitions**

**Workers:** All Vale's own employees and service providers.



Contractors of Mineral Exploration and Capital Projects phases can use their own management systems, tools and documents, since these comply the Vale minimum requirements established procurement steps. Contractor's Management System shall be evaluated by Vale in this procurement phase.

## **Structure of Vale's IMS**

Vale's IMS is defined by Sustainability Policy (POL-0019-G), Sustainability Standard (NFN-0009) and this Manual.

Vale's Sustainability Standard defines the structure through twelve (12) requirements and this Manual describes in detail the contents of the requirements and their management.

In order to meet IMS requirements, each area shall implement the associated technical standards, according to their applicability. The list of documents and tools associated with the requirements and/or sub requirements can be found in the Health and Safety Director's SharePoint in the following path: <http://portal.valeglobal.net/sites/hs/en/hse/Pages/Documents,-Records-and-Information.aspx>

## **1. Policy, Objectives and Targets**

### **1.1 Policy**

1.1.1 Vale's IMS is driven by Sustainability Policy (POL-0019-G), available at Global Intranet, reviewed whenever needed in the critical analysis meetings.

1.1.2 POL-0019-G is committed to comply with applicable legal requirements and continuous improvement, ensuring Zero Harm to workers and communities, pollution prevention and quality to manage its processes.

1.1.3 POL-0019-G shall be communicated and understood by all its workers.

### **1.2 Objectives and Targets**

1.2.1 Top management defines annually the objectives and goals for all hierarchical level and functions, considering the legal and other requirements, IMS risks and aspects, technological options, financial requirements, operational, commercial and stakeholder expectations, making them part of the workers' challenges.

1.2.2 Each area shall unfold the goals and targets at the relevant levels and functions, define the action plan and monitor the results periodically.

## **2. Hazards and Risks/ Aspects and Impacts/ Management of Change**

### **2.1 Hazards and Risks/ Aspects and Impacts**

2.1.1 Vale's business is managed to identify and register risks and opportunities that may influence the range capability of the expected results, minimizing risks and impacts and maximizing opportunities according specific evaluation matrix.

2.1.2 The risks and opportunities process considers legal requirements, hazard and aspects identification, impacts and risks assessment and the adoption of appropriate measures to control health, safety,



environment, communities and human rights risks and impacts for its activities, the organization context and stakeholder requirements.

2.1.3 The areas shall ensure that the management of risks and impacts is implemented as matrix, implementing the necessary controls, according controls hierarchy.

## 2.2 Management of Change

2.2.1 Changes made in processes, facilities and equipment that may affect directly or indirectly the health, safety, environment, communities and human rights shall be preceded by change analysis.

2.2.2 Results of these shall be properly recorded and approved, thus establishing guidelines still in their planning phase.

2.2.3 If the changes are actually performed, shall be reviewed HSE risk and impacts assessments.

## 3. Legal and Other Requirements

### 3.1 Legal and Other Requirements

3.1.1 Vale has management tools for IMS legal and other requirements that provide the identification, update, analysis and register of compliance with them.

3.1.2 The areas shall guarantee the performance of conformity assessments with the legal and other requirements. In case of conflict between the law and the IMS requirements, the most restrictive shall prevail.

### 3.2 Environmental licensing

3.2.1 Vale has the objective of ensuring compliance with legal requirements for proper conduct of the environmental licensing process in its different stages.

3.2.2 The areas shall comply with corporate guidelines and, in their absence, local laws.

3.2.3 For the management of environmental permit and condition information, Vale has a tool developed to ensure compliance with environmental laws and policies and with the commitments expressed in the environmental licensing conditions. The tool allows the management of evidence records of documents and various actions of the licensing process.

## 4. Leadership, Roles and Responsibilities

### 4.1 Leadership

4.1.1 IMS has Integrated Management Committees (CLI), with the participation of leaders, and are intended to discuss the main themes of the management system.

4.1.2 It is up to the Leaders:

- Approve and monitor compliance with the budget, prioritizing resources to resolve issues involving compliance with legal requirements, to minimize or eliminate the risks and impacts of health, safety and the environment;



- Monitor and periodically review the performance in health, safety and environment;
- Carry out and promote in a systematic and regular basis, audits and inspections of the activities under their responsibility;
- Ensure implementation of actions for treatment of HSE nonconformities identified;
- Ensure the implementation and functionality of the HSE control over activities developed;
- Ensure that significant aspects, impacts and risks to health, safety and environmental related to their activities, products and services under their responsibility are identified, assessed, controlled or mitigated;
- Report on decommissioning assets in areas under their responsibility.

## 4.2 Roles, Responsibilities and Authorities

4.2.1 The Corporate Health & Safety Director / Manager and Corporate Environment Director / Manager are the representatives of the top leadership. In addition, each area has a local representative for IMS management.

4.2.2 Responsibility of top leadership:

- Ensure that the processes required for the integrated management system are established, implemented and maintained;
- Report to the Top Management the performance of the integrated management system and any need for improvement;
- Ensure the adequacy, relevance and effectiveness of the IMS.

4.2.3 The responsibilities of the areas participating in the Integrated Management System are indicated in their procedures and are communicated through training.

4.2.4 Supporting these committees, Vale has subcommittees and working groups specific to the main themes of IMS.

4.2.5 It is up to health teams, Safety and Environment Locations:

- Support project leaders and operations in the implementation of processes and programs of health, safety and environment;
- Provide technical support to carry out risk assessments and identifying hazards and aspects of health, safety, environment, community and human rights;
- Collect, consolidate and make available information and indicators of health, safety and environment of its board, allowing the performance of critical analysis.

4.2.6 It is up to all employees:

- Immediately report any incidents of HSE, fines, non-compliance of HSE and environmental liabilities (actual and potential) identified;
- Know the risks, aspects and impacts of health, safety and environment of the activities which it is involved and not perform any task, activity or operation, whenever they are identified risks or potential harm to the health, safety, environment and communities.
- Implement, maintain and ensure the functionality of the HSE systems and control devices, as set out in the programs, risk analysis and surveying aspects and impacts of health, safety, the environment, communities and human rights related to its activities.

## 4.3 Resources

4.3.1 Vale's leadership conducts the continuous improvement process, defines the expectations and/or needs and provides the necessary resources to the effectiveness of IMS management, ensuring that the policy and the stated objectives are consistent with the context and strategy of the organization, that IMS requirements are integrated into the process, and that their planning, guidance and monitoring is



carried out by the health, safety and environment areas and supported by other areas of the organization.

## 5. Competence, Training and Behavioral Development

### 5.1 Competency and Training

5.1.1 Vale ensures that all workers are properly trained to ensure the appropriate level and a set of skills for the IMS effectiveness.

5.1.2 It is the responsibility of all Vale areas:

- Manage your trainings according to the specific matrix;
- Ensure competencies of workers related to IMS, based on appropriate education and/or qualification and/or experience, providing the development and awareness of them;
- Include IMS in the ambience programs / introductory;
- Define and review periodically the requirements of training and competence linked to IMS themes for the positions and relevant levels;
- Conduct periodically the identification of training needs and the preparation of the training plan;
- Evaluate the training as their effectiveness registering the results. Whenever necessary shall be developed and implemented adequate plans to ensure that available training is achieving the objectives expected by Vale;
- Implement awareness programs in the IMS themes, from the dissemination of the Policy, the Concept Active Genuine Care, and the use of behavioral tools and encouraging continuous improvement.
- Retain in an organized way the necessary and sufficient information to guarantee the conformity of our processes and the continuous improvement.

### 5.2 Behavioral Development

- Areas shall implement awareness programs on IMS themes, based on the dissemination of the Sustainability Policy and the concept of Active Genuine Care.
- A behavioral development process should be implemented, focusing on prevention and continuous improvement. This process must be educational, stimulating the perception of risks, reducing inappropriate behaviors and valuing the appropriate ones.
- The behavioral development process should consider: the involvement of leaders, workers; Observation and recording of behaviors, immediate feedback and the training of those involved and the statistical analysis of the results.

## 6. Communication, Participation and Consultation

### 6.1 Communication

6.1.1 The IMS communication is essential to direct the continuous improvement processes. For that, Vale has internal channel of communication with its workers through the platform of the Integrated Management System, available on the global intranet.

6.1.2 Vale, through its Sustainability Report, communicates externally relevant information to the IMS.

6.1.3 Vale decides not to carry out external communication on the significant environmental aspects of its activities.

6.1.4 The IMS guidelines, as well as the best practices related, shall be shared with workers and, where appropriate, with other stakeholders.

6.1.5 Each area shall develop a communication, participation and consultation program on the IMS with all levels and other stakeholders, which contains minimally:



- Internal and external communication flow issues related to IMS, including access channels for receiving demands, feedback, complaints and mediations;
- Conducting health, safety and the environment dialogues and social themes;
- Communication Effectiveness evaluation contemplating the deviations found.

## 6.2 Participation and Consultation

6.2.1 Vale, through the corporate, has a plan of participation and consultation of workers, including:

- Reporting and analysis of health, safety and environment incidents, with the critical/catastrophic potential severity. This process is implemented, available and occurs periodically;
- E-mail key for receiving questions, suggestions and participation of all the workers, and sending updates to the processes of the Integrated Management System;
- SharePoint for sharing relevant information of the IMS.

## 7. Documents, Records and Information

### 7.1 Documented Information

7.1.1 The structure of the normative documents Vale follows the guidelines of the Planning, Development and Management Function Standard, NFN-0001 and IMS hierarchy Vale is aligned with it.

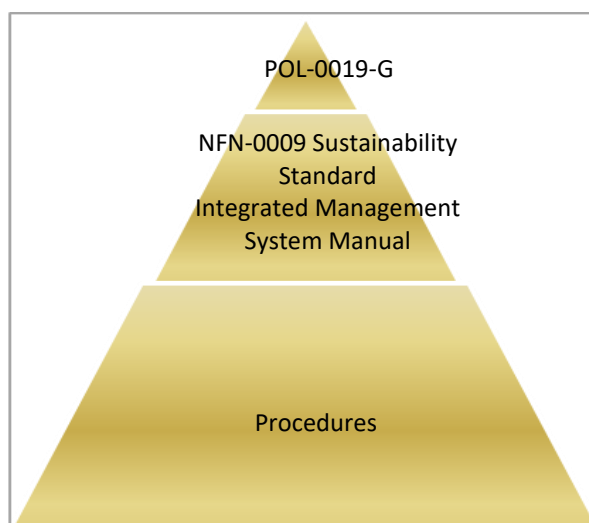


Figure 02 – IMS Structure

#### Procedures:

- PGS – Management System Standard: HSE Management Documents, dictate "What" shall be done;
- PTP – Process Technical Standard: HSE Technical Documents, dictate "What" and/or "How" shall be done;
- PRO – Operational Standard: HSE Operational Documents, dictate "How" shall be done;
- RG – Guarantee registers: Confirms or evidence the execution of particular task;
- EPS – Specification of Products and Services/Support.





- 7.1.2 The normative areas that make up the IMS are responsible for issuing and managing documents the type POL, NFN, PGS, EPS, PTP and PRO, this latest in exceptional cases. Type of documents POL and NFN are inserted into Global Intranet – Normative Documents. The other documents are inserted into \*Global Intranet – IMS Global Platform. If the normative area not established a PGS or PTP, the minimum amount on its theme will be inserted in the text of this manual.
- 7.1.3 The areas can deploy the documents through specific PRO that does not infringe the general guidelines of the normative documents.
- 7.1.4 Business Areas can deploy the documents by PRO (Operational Standard) specific since they do not infringe the general guidelines specified in normative documents and have RG (Guarantee registers) and EPS (Specification of Products and Services/Support).
- 7.1.5 Business Areas shall also ensure identification, control, reliability, storage, traceability of information and dispose of them through its own page on Global Intranet.

## 8. Operational Control

Vale establishes its operational controls based on risk and impacts assessments, opportunities, other priority issues related to the organization's context and requirements of the relevant stakeholders in accordance with applicable legal requirements and commitments set out in the Sustainability Policy.

Described below are the main operational controls identified by Vale:

### 8.1 Waste Management

- 8.1.1 Each area shall implement programs as legal requirements, corporate guidelines, ensuring the implementation of effective actions to control the identified aspects.

### 8.2 Water Resources Management

- 8.2.1 Each area shall implement programs as legal requirements, corporate guidelines, ensuring the implementation of effective actions to control the identified aspects.

### 8.3 Noise and vibration management

- 8.3.1 Each area shall implement programs as legal requirements, corporate guidelines, ensuring the implementation of effective actions to control the identified aspects.

### 8.4 Management of Air Emissions and Air Quality

- 8.4.1 Each area shall implement programs as legal requirements, corporate guidelines, ensuring the implementation of effective actions to control the identified aspects.

### 8.5 Greenhouse Gases

- 8.5.1 Each area shall implement a program according to guidelines established by the mitigation and adaptation to climate change policy, POL-0012-G, with a commitment to reduce their emissions.



## **8.6 Environmental Liabilities – Contaminated areas and recovery of degraded areas**

- 8.6.1 Each area shall ensure the identification, assessment, treatment, disposal or control the identified environmental liabilities, associated with contaminated and degraded areas characterized, according to legal requirements and guidelines of Vale.
- 8.6.2 Vale establishes general guidelines for the recovery of degraded areas in Vale, applicable to both mining and non-mining features. The treatments should be adequate to the conditions of the sites involved, in line with legal, administrative, technical, legal and good practice requirements, which should be consolidated in a specific technical project that will guide the implementation, maintenance and monitoring of treatments.
- 8.6.3 Each area should establish its RAD process, according to the following steps: inventory, diagnosis, planning, implementation, maintenance, monitoring and evaluation of the effectiveness of RAD projects and management of contaminated areas, taking corrective action whenever necessary, and thereby ensure the recovery and / or remediation of the areas in accordance with the defined projects and applicable legal requirements. The RAD process in the mined areas must be in line with its closure process.

## **8.7 Demobilization of Assets and Provisional Facilities and Mine Closure**

- 8.7.1 All Vale's Operating Units must have a Mine Closure Plan, which covers the design, implementation, operation, closure and post-closure phases. The Mine Closure Plan must comply with legal, technical and good practice requirements applicable to the region / country where the enterprise is located.
- 8.7.2 All active, deployed, shut down or paralyzed assets that represent company obligations for deactivation or demobilization should have their estimated costs for the composition of the Asset Retirement Obligation (ARO).

## **8.8 Critical Activities Requirements (CAR)**

- 8.8.1 The Critical Activities Requirements (CAR) are minimal health and safety regulations set by Vale in order to ensure Zero Harm and shall be followed by the workers, as the applicability of each RAC activities.

## **8.9 Fatality Prevention Program**

- 8.9.1 Each area shall set a fatality prevention strategy, according to corporate guidelines, ensuring Zero Harm.

## **8.10 Occupational Hygiene**

- 8.10.1 Each area shall set an occupational hygiene program, according to corporate guidelines, ensuring Zero Harm.

## **8.11 Ergonomics and Fatigue**

- 8.11.1 Each area shall set an ergonomics and fatigue program, according to corporate guidelines, ensuring Zero Harm.

## **8.12 Personal Protective Equipment (PPE)**



8.12.1 Each area should define the PPE appropriate to the risks associated with their activities, according to corporate guidelines and legal requirements, ensuring the Zero Harm.

## **8.13 Work Permit**

8.13.1 Each area shall set a work permit program, according to corporate guidelines, ensuring Zero Harm.

## **8.14 Chemicals**

8.14.1 Each area shall ensure control of the transport, storage, handling, use and disposal of chemical products, according to legal requirements and guidelines of Vale.

## **8.15 Maintaining the Integrity of Facilities and Equipment**

8.15.1 Facilities, machinery and equipment considered critical to health, safety, environment and quality shall be identified, recorded and entered into the maintenance program (preventive maintenance, corrective maintenance, inspection and calibration) of the area in order to ensure their functionality within the set control parameters.

8.15.2 Each area shall prepare and keep up your maintenance plan, inspection and calibration of the facility, machine and critical equipment.

## **8.16 Contractors Management**

8.16.1 Vale has HSE management process contractors, which includes the steps of pre-qualification, recruitment, mobilization, management and decommissioning. This process takes into account legal requirements and other HSE.

8.16.2 Contractors shall be evaluated periodically during the contract management of their performance, they may be disqualified or generated action plans for the improvement of its processes.

## **8.17 Health Management (Medical, Industrial Hygiene, Ergonomics, Organization and Cleaning)**

8.17.1 Each area shall have health programs according to legal requirements and corporate guidelines, such as occupational hygiene, ergonomics, fatigue, substance abuse, absenteeism management, rehabilitation and vocational rehabilitation, health promotion and wellness, control of endemic diseases and health traveler, in order to ensure Zero Harm.

## **8.18 Social Impact Management**

8.18.1 Each area shall ensure the mapping, assessment and treatment of social impacts and implement programs and initiatives according to legal requirements and corporate guidelines, such as: Diagnostics and Indicators Monitoring Socioeconomic Programs, Environmental Education Programs, Involuntary Removal, Health and Safety Community, Social Dialogue, among others.

## **8.19 Allegations of Human Rights**

8.19.1 Each area shall ensure the mapping, assessment and treatment (communication and/or remediation) of the identified human rights allegations, according to legal requirements and guidelines of Vale.



## **9. Emergency Preparedness and Response**

### **9.1 Emergency Preparedness and Response**

- 9.1.1 Vale has a georeferenced tool for information relating to emergency preparedness and response properly stored, ensuring the resources necessary for the prompt service.
- 9.1.2 Each area shall establish an Emergency Response Plan (ERP), by identifying the risks of incidents and their potential consequences.
- 9.1.3 Whenever possible shall be promoted integration between the Emergency Response Plans of the same unit (including contractors) and implemented system of mutual assistance with other companies.

## **10. Preventive Actions, Incident and Nonconformity Management**

### **10.1 Incident Management**

- 10.1.1 Vale has systematic for Incident Management, in order to identify the factors that contribute to the occurrence of incidents and the prevention and mitigation of the risks and negative impacts.
- 10.1.2 Each area shall register, classify, analyze and document all incidents, using Vale tool (SAP-IM) where it is available.
- 10.1.3 The areas shall communicate to stakeholders and establish action plans for the treatment, verifying the effectiveness of actions.

### **10.2 Nonconformity Management**

- 10.2.1 Vale has systematic for Incident Management and Nonconformity, in order to identify the causes, treatment and effectiveness evaluation.
- 10.2.2 Each area shall register, classify, analyze and document all nonconformities, using Vale tool (SAP-IM) where it is available.
- 10.2.3 The areas shall communicate to stakeholders and establish action plans for the treatment, verifying the effectiveness of actions.

## **11. Inspection and Audits**

### **11.1 Inspection**

- 11.1.1 An inspection program according to corporate guidelines should be developed.
- 11.1.2 The inspections should focus on the treatment of actions and / or nonconformities that may cause damage to health, safety and the environment.
- 11.1.3 The recording of the results of the inspections must be done through a specific tool (SAP-IM) where it is available.



## 11.2 Audits

11.2.1 Vale has Operating Units certified in ISO 9001 (Quality Management System), ISO 14001 (Environmental Management System) and OHSAS 18001 (Health at and Safety Management System). These units are audited by external certifying body at intervals defined by the certification.

11.2.2 In addition to the certification audits, Vale has audit corporative program, to verify the conformity with the IMS.

11.2.3 The results registers of audits and inspections shall be carried out through specific tool (SAP-IM) where it is available

## 12. Monitoring, Performance Indicators and Continual Improvement

### 12.1 Monitoring and Performance Indicators

12.1.1 Vale establishes and maintains communication performance leading and lagging indicators in the IMS issues, considering the objectives and goals. In addition to these areas can define specific indicators.

12.1.2 The monitoring of results shall be conducted through the modules: SAP EC (Environmental Compliance), SAP Waste, SAP IM (Incident Management), Credit360 and SD2000, when available and/or through specific systems where the need arises.

### 12.2 Management Review

12.2.1 The IMS's qualitative and quantitative results should be consolidated by all areas.

12.2.2 Local Leadership of the units should periodically promote critical reviews of the IMS.

12.2.3 The units must report to the Health and Safety Board the relevant resolutions for the whole corporation and the information on how they are implementing the commitments established in the Sustainability Policy.

12.2.4 The Health and Safety Board will consolidate all relevant information for deliberation by High Leadership.

### 12.3 Continual Improvement

12.3.1 The promotion of continual improvement should be encouraged by all levels of the organization.

12.3.2 Those that have benefits and a significant and sustainable return over time should be recognized as good practices. These should be recorded and shared to promote organizational learning.