

Social Responsibility and Environmental Sustainability. The Case Study of Vale (Brazil)

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Abstract - Corporate social responsibility deals with companies' actions aiming a positive impact namely on environment, consumers, employees or communities, for example. It requires a set of duties and obligations, in relation to the society and to the communities in which the organization is operating. In Brazil, the corporate social responsibility is still a big challenge, since the actions of social responsibility have not contributed effectively to improve the living conditions of society and the transformation of existing social reality. This study emphasizes the perspective of environmental sustainability that underpins the more general concept of social responsibility. Besides, it is presented the case study of the company Vale, carrying out business in Brazil.

Keywords: Social Responsibility, Sustainable Development, Environmental Sustainability, Vale.

1. Introduction

The evolution of Vale over the years made the company a mining giant. It is the second mining company in the world at the beginning of the century. Vale had got a radical transformation in its concepts with its privatization in 1997 and has expanded throughout the country, with investments in various sectors of the economy, like manufacturing of pulp, rail and port logistics, manufacturing, aluminium, reforestation and holding the exploitation of all kinds of minerals such as gold, manganese, bauxite and kaolin.

In these circumstances, the company began operating in 14 of the 27 states, with much emphasis on the Eastern Amazon in the states of Pará and Maranhão, from the Carajás project installed in 1980 in Pará, considered the largest mining project in the planet and having the iron ore with the best quality. The impact of this project, as well as other smaller ones not necessarily of lesser importance, and the continuous social and environmental concerns, made the company to become the main economic actor in this region. Since its privatization, the dialogue between the society and the company has received much attention considering the existing ideas for economic development and for the sustainability of the region, possible to be made or allowed to be discussed in this dynamic.

Considering that Vale is set in the particular industry of mining, with significant environmental implications, the context of the problem of sustainability and responsibility is very central in any approach in discussion about this theme. The role of Vale in the society in general and in local communities have changed significantly over time.

In fact, companies are today much concerned with the image they have in the public opinion. When organizations commit with social responsibility, they intend to behave ethically and intend to make business considering communities' interests.

If an organization intends to be socially responsible, many presumptions have to be considered and ecological, social, ethical or even cultural concerns have to be taken in account. The organization has also to take into account all stages of decision-making procedure.

The example of Vale in Brazil is presented to show important strategic policies carried out by companies dealing with social responsibility.

The purpose of this study is to emphasize the perspective of environmental sustainability that shows the more general concept of social responsibility. It is intended to analyze the strengths and weaknesses of the development of measures of social responsibility in this area and to see an example of what some companies are doing now on this matter in Brazil.

2. Corporate Social Responsibility: an aim on Business

Corporate social responsibility is the continuing dedication to a responsible business, behaving in ethical premises and contributing to economic development, improving the life quality of workers, of their families and of local communities, aiming to have a positive contribution for the society as a whole.

The organization must be active and lead to the economic, technological and human development. To that extent, its performance requires full respect for human rights, investment in personal enhancement, environmental protection, combating corruption, compliance with social norms and respect for ethical values and principles of the society in which it operates.

Social responsibility requires a set of duties and obligations to be accomplished by individuals and firms in relation to the society and to the communities. Social responsibility deals with companies' actions aiming a positive impact in many areas as the environment, consumers, employees or communities, for example.

In Brazil, the basic needs of large segments of the population are still not being met. Issues related to survival, hunger, unemployment and social exclusion, among others, lead discussions about social responsibility of business to a lower level. In this sense, it is necessary an important debate on the corporate social action in Brazil.

The beginnings of discussions about corporate social responsibility in the United States and Europe dealt with problems relating to environment and consumer rights. The Brazilian reality raises other questions, much more intense and urgent to be tackled and solved. The concept of social action is that, currently, more closely reflects the performance model of the Brazilian companies that practice social responsibility, as defined by the IPEA (Instituto de Pesquisa Economica Aplicada) as those actions that are not obligatory, performed by the companies through donations or projects in areas such as social assistance and food, among others. However some interesting developments in this area are made by some companies in Brazil.

3. The Concept of Social Responsibility

The company management cannot and / or should not be guided towards the fulfilment of interests of the owners of the company, but also because of other stakeholders' interests such as the ones of employees, local communities, customers, suppliers, public authorities, competitors and society as a whole.

In practice, corporate social responsibility refers to the adoption of a model of business management in which the companies, being aware of their social commitment of co-responsibility in social and human development, hear, preserve and respect the interests of different parties, their stakeholders, incorporating different needs of the business planning and operating them through their decisions and activities.

There is no doubt that this is a significant change because, a few decades ago, one had the idea that private companies should be accountable only to their shareholders and they should produce profits.

Although much discussed, the concept is not yet finally stabilized. In any case the effort of researchers to differentiate the simple idea of charity has proved essential to its proper scope and understanding by companies and managers.

There are countless interpretations and definitions of corporate social responsibility. Possibly the best way to analyze the concept of corporate social responsibility is to identify some different views (see Melo Neto & Froes, 2001):

- The social responsibility as an attitude and ethical and responsible corporate behaviour. Concept and duty associated with the organization's commitment to assume posture transparent, accountable and ethical relationships with its stakeholders (customers, suppliers, government, community in general).
- The social responsibility as a set of values: not only incorporates ethical concepts, but a series of other concepts that gives sustainability, for example, self-esteem of employees, social development and others.
- The social responsibility as corporate strategic posture: The quest for social responsibility is seen as a social action strategy that generates positive return to business.
- The social responsibility as a relationship strategy: Focusing on quality improvement of relationships with different stakeholders, i.e., social responsibility is used as a strategy of relationship marketing, particularly with customers, suppliers and other collaborators.
- The social responsibility as institutional marketing strategy: The focus is on improving the corporate image. It is the institutional gains that justify the investment in social projects undertaken by the company.
- the social responsibility as a strategy for recovery of the shares: "The reputation of a company and the value of its shares on the market go together".
- The social responsibility as a human resources strategy: The actions are focused on employees and their families with the aim of increasing personal satisfaction and generate increased productivity.
- The social responsibility as a strategy for recovery of products / services: Beyond the mere attestation of quality products and services company, is the purpose of guaranteeing them the status of "socially correct".
- The social responsibility as a strategy of integration in the community: The company seeks to improve its relations with the community and redefining innovative ways to keep it inserted.
- The social responsibility as a strategy of social development in the community: the organization takes over the role of agent of local development, along with other community organizations and the government itself.
- The social responsibility while promoting individual and collective citizenship: By their actions, the company helps its employees to become true citizens and contributes to the promotion of citizenship in the community.

- The social responsibility as an exercise in ecological consciousness: The social responsibility is seen as leading to environmental liability company to invest in education and preserving the environment by becoming a broadcaster of values, attitudes and environmental practices.
- The social responsibility as a strategy for social inclusion: Linked to the concerns of "Social Inclusion".

All these dimensions are, in fact, a part of a comprehensive overview of the concept. Thus, it is possible to withdraw this central idea, as greatest common divisor: Corporate Social Responsibility as a voluntary integration of social and environmental concerns in the daily operations of the organizations and interaction with all stakeholders.

Social responsibility is the fulfilment of duties and obligations of individuals and companies to society in general. Corporate social responsibility is assumed as a form of ethical management and transparency that the organization has with its stakeholders to minimize negative impacts on the environment and community, has to take into account all stages of decision-making procedure and shape it in the context of the community in which it operates.

The organization must be an active agent and must lead the economic, technological and human development. To that extent, its performance requires full respect for human rights, investment in personal enhancement, environmental protection, combating corruption, compliance with social norms and respect for ethical values and principles of the society in which it is operating. Social responsibility requires the accomplishment of a set of duties and obligations, whether individuals or firms in relation to society and the communities in which the organization operates.

Social responsibility presupposes the existence of an attitude and ethical and responsible corporate behaviour, a set of values, an entrepreneurial strategic posture; a relationship strategy, a strategy of institutional marketing; strategy valuation of the shares, a human resources strategy; a strategy to develop products/services, a strategy of integration into the community, a strategy of social development in the community should work as a promoter of individual and collective citizenship, as an exercise in ecological awareness and professional training as an exercise. It is these multiple aspects that constitute an integrated support to a responsibility that organizations must take, including to ensure their long-term operation.

4. Environmental Accounting

The social accounting arises in order to contribute effectively to the prosperity of organizations and nations, transforming the accounting information system

in a broader package, whereby statements are presented not only financial and economic, but also those of social and environmental nature indispensable for the analysis, control, evaluation and decision making, in the world context of globalization and constant change (Kroetz, 1999).

Environmental accounting is the record of environmental assets. Paiva (2003) defines it as the activity of identifying data and records of environmental events, processing and generating information that assists the user serving as a parameter in his decision making.

For Ferreira (2003), the development of environmental accounting results from the need to provide information tailored to the needs of environmental management. The author states that the environmental accounting does not refer to a new accounting, but a set of information to report fairly, in economic terms, the actions of an entity that alters its assets. This set of information is no other accounts but a specialization. This is a new base and a new system of recognition and measurement of costs, including externalities.

For Bergamini Jr. (1999), environmental accounting aims the registration of the company's transactions that impact on the environment and their effects that affect or should affect the economic and financial position of the business, ensuring that costs, environmental assets and liabilities are accounted in accordance with generally accepted accounting principles or in its absence, with the generally accepted accounting practices and environmental performance and with the wide transparency that users of accounting information need.

For the Environmental Reporting Guidelines cited by Tinoco and Kraemer (2004), environmental accounting is a framework that quantitatively estimates the environmental conservation efforts in monetary terms. It is also a significant technique that may indicate the state of environmental conservation to stakeholders. This accounting is more ambitious than the traditional, since it aims to know the negative externalities and record, measure, assess and disclose all environmental events.

Yet in the view of Taylor (2004), the role of environmental accounting is to provide regular information to internal and external users about the environmental events that caused changes in the assets of the respective entity, measured in currency.

5. Environmental Event

Environmental event is any entity's interaction with the environment that generates economic consequences of present or future, in view of the regulatory standards

or social responsibility that is subject to a specific company.

Examples of environmental events have been spending on development or acquisition of technologies, machinery and antipollution equipment; search for waste reduction, employee training methods of clean production and the laws, raising revenue, as a consequence of materials recovery (recycling), among many others.

Tinoco and Kraemer (2004) list events and environmental impacts related to operational activities of various sectors that affect the assets and business continuity, quality of life, fauna, flora, rivers and seas, and that therefore shall be subject to registration, collection, measurement, evaluation and dissemination by the accounts, highlighting in particular:

- Coal Mining: causes impacts on the environment evidenced in the atmosphere, soil and surface water and groundwater.
- Steel: Degradation of water quality, which requires local water-treating, construction of landfills, air pollution, pollution emissions from power plants, especially particulate matter, release of oils and greases, organic loading, soluble manganese, ammonia, etc. involving investments to control them.
- Other activities that also deserve mention: the production of lime, cane sugar, pulp and paper production and the oil industry.

Based on these events it is possible to quantify and record, through the accounting techniques, the environmental interactions surrounding businesses and entities.

6. Advantages of Environmental Accounting

According to Tinoco and Kraemer (2004), several advantages related to the use of accounting in the environmental focus may be pointed, such as:

- Measurement and allocation environmental costs, allowing a continuum of planning applications;
- Measurement of environmental liabilities;
- Intensive use of explanatory notes and environmental performance indicators;
- Being able to accurately verify the reductions in resources such as water, energy, soil and other potential physical environment;
- Making decisions based on the costs and benefits recorded in their own environmental accounting;
- Providing information and statements about the effectiveness and economic feasibility of the environmental actions;
- Publishing the social and environmental issues, creating transparency and social interest;

- Constant corrections of environmental actions, reducing the level of aggression against nature in the manufacture of products and services essential to the population,
- Quality data analysis and interpretation by both internal and external audiences, allowing an evaluation of the quality of environmental management of the entity.

7. Environmental Preservation

The concept of sustainable development has emerged from studies of the United Nations on climate change in the early 1970s, as a response to the concern of humankind, given the environmental and social crisis that has befallen the world since the second half century. This concept, which seeks to reconcile the need for economic development of society to promote social development and respect for the environment, today is a vital topic on the agenda for discussion on a variety of organizations, and with different levels of organization society, as in discussions on the development of cities and regions, current day-to-day society. Follows a short presentation of the evolution of the concept since its inception to the present.

The year 1968, according to Camargo (2003) was the first serious sign of popular discontent with the model of industrial capitalism towards the end of its cycle, with the outbreak of student protest in the chain, started in Paris in May 1968, rising Berkeley, Berlin and Rio de Janeiro.

Breaking the walls of the economics bastion, environmentalism came to question the economic rationality in terms of its own criteria. More specifically, the new debate shows that, compared to several problems and dilemmas that industrial development poses, the solution or the way to overcome them may not require a new jolt, but the adoption of restrictive measures to increase economic production, which raises the idea of ecological rationality as the basic principle and limiting the economic rationality and self development.

The Club of Rome, an entity formed by intellectuals and businessmen, who were not environmentalists, was an initiative that grew out of discussions regarding the preservation of natural resources of the planet. He produced the first scientific studies about environmental preservation, which were presented between 1972 and 1974, and that related to four major issues that should be resolved in order to reach sustainability: control of population growth, control of industrial growth, lack of production food, and depletion of natural resources (Campbell, 2002).

Development and environment have merged on the concept of eco-development, which in the early 80's was supplanted by the concept of sustainable development

that has been adopted as the official expression in UN documents, IUCN (International Union for Conservation of Nature) and WWF (World Wild Fund for Nature).

8. Social Responsibility and Environmental Sustainability in Brazil

Note that the concept of social responsibility can be understood at two levels:

- The internal level, it relates to workers and, more generally, with all actors and stakeholders (who are affected by business and, in turn, may influence the results);
- And the external level which considers the consequences of the actions of an organization on its external environment, including, among other things, its business partners and the environment.

In Brazil, although with regional differences in the way of realization of social action for communities, donating resources is the most used by many companies from all regions, and in South and Southeast, this donation is directed to organizations running social projects.

In the northeastern region of Brazil, the large majority of donations of funds are held by companies for direct assistance to needy individuals and communities. However, from the real meaning of corporate social responsibility, donating resources is not the essence, but the severity of problems in Brazil and the large proportion of the population lives below the poverty line make the social performance a big problem.

Besides, nowadays there are already many actions being planned by companies in order to incorporate activities of environmental sustainability and contribute through programs to the well fare of populations and resources preservation.

9. Vale and Environmental Sustainability

9.1 *Environmental Issues in Brazil*

The evolution of society especially after the re-democratization of Brazil and the 1988 Constitution, which guaranteed political participation through questioning of autonomous social organizations, NGOs and other institutions, and international pressure of all kinds on the expansion of economic projects in the region showed a new way to analyze the environmental and social impact.

With the new ecological and social concerns, the state itself has changed its approach to geopolitics to the area and began to seek a return to society of the projects to be implemented and also the approach to sustainability, long-term perspective, the degree of exploration and

employability. The companies that own or want to develop projects in the region began to show a series of socio-environmental in their statements, in addition to campaigning for clarification of their participation in the region. The main tool for informing the government and investors on these issues is the company's economic accounting and after the social and environmental accounting that can come as a part of the accompanying financial statements that have already been published by the company.

9.2 *The Company: a bit of History*

Vale (originally state-owned enterprise, privatized in 1997), called Companhia Vale do Rio Doce, was founded by decree on June 1, 1942, with operations concentrated in Minas Gerais, with the purpose of mining iron, during the government of President Getúlio Vargas, then a dictatorship began with the Revolution of 1930.

The connotation of the nationalist government Vargas was incorporated in the vision of the company that originally served only the domestic demand particularly CSN (Companhia Siderurgica Nacional). However, in the 60s the company takes an entrepreneurial leap and is now exporting iron ore to Japan. This change take the company to the next level to insert performance as an exporter of long range.

The evolution of Vale over the years turned it into a mining giant, the second mining company in the world at the beginning of the century, when the company had undergone a radical transformation in its concepts with its privatization in 1997. Vale expanded throughout the country, with investments in various areas of economy, such as pulp manufacturing, logistics, rail and port, aluminium fabrication, reforestation energy than the holding of all kinds of minerals such as gold, manganese, bauxite and kaolin.

In these circumstances, the company began operating in 14 of the 27 states, with much emphasis on the Eastern Amazon in the states of Para and Maranhão, from the Carajás project installed in Pará, the largest mining project in the planet and having the iron ore with the best quality. The impact of this project, as well as other smaller but no less important and constant social and environmental concerns, the company became the main economic actor in the region. Since its privatization, the dialogue between the society and the company has been focused on the economic developments and sustainability, which are possible to be reached or just discussed in this process.

9.3 *The Company in the XXI Century*

The company Vale is the second largest diversified mining company in the world in market value. World leader in the production and export of iron ore and

pellets, and an important producer of nickel, copper concentrate, bauxite, alumina, potash, kaolin, manganese, ferroalloys and coal, the company has offices and operations in over 30 countries on five continents. Vale was the first Brazilian company to achieve the rating of investment grade and the first Brazilian company to trade its shares on Euronext (Paris).

The company has gained an enormous strength with the ore extraction in the Amazon, more specifically in the Carajas region, located in the southeastern state of Para Company, in its first year, produced 40 tons of iron ore, equivalent amount that is loaded per hour today. Vale has diverse activities within the mining sector.

The company operates in the segments below:

- **Ferrous:** iron ore and pellets, manganese and ferroalloys.
- **Non-ferrous:** kaolin, potash, copper and nickel.
- **Logistics:** Railroads, port terminals, coastal shipping and logistics solutions.
- **Aluminum:** Bauxite, alumina and aluminum.
- **Energy:** Eight hydroelectric dams, seven of which are already in operation.
- **Coal:** The Chart 1 shows the diversity of work, identifying what each product represents in the composition of gross revenue.

CVRD holds maximum production of nickel, bauxite, alumina, copper, thermal coal, cobalt, platinum group metals and precious metals. The company guarantees sales *maxima* of iron ore, nickel, copper, alumina, cobalt, precious metals, platinum group metals and thermal coal.

Privatized in May 6, 1997, the company had a net worth in 1997 of U.S. \$ 350 million, with a market value around \$ 10.5 billion by offering 11 thousand direct jobs. In less than a decade after massive investment, the company increased nearly 10 times its gross revenue, according to data presented in chart 2.

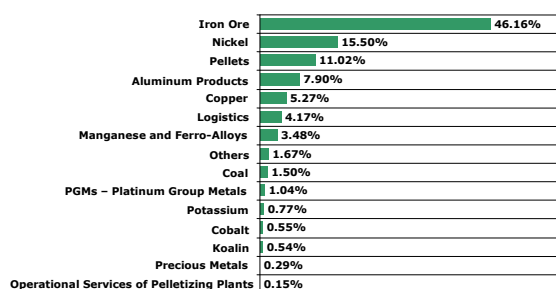


Chart 1. Composition of gross revenue (Source: Vale)

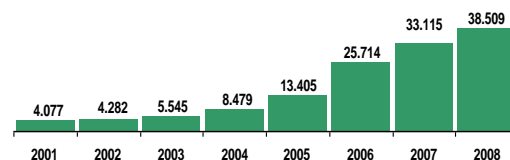


Chart 2. Gross Revenue in Millions (Source: Vale)

The privatization of Vale, whose sale is even nowadays questioned, brought to the company an enormous investment sum. On August 11, 2006, CVRD made a public offer of \$ 18 billion for Inco, Canada, which owned the largest reserves of nickel in the world. This business became an historic deal. It was the biggest investment made abroad by a Brazilian company. Vale has become one of the largest nickel producers in the world, with a production of 234,900 tons in 2006.

The transaction increased the market value of Vale and in December 2007 the company was valued in U.S. \$ 151,711 billion, with a number of employees of 152,724 in 2007.

In 2008, the company was considered the mining company that most invests in its production processes, as shown in the chart 3:

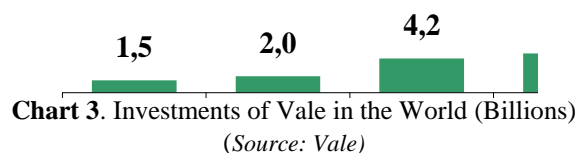


Chart 3. Investments of Vale in the World (Billions) (Source: Vale)

According to the data, Vale has invested more after its privatization in 1997 (and has increased its profitability).

9.4 Vale and the Environment

According to the company report, the essence of its work is the search for a balance between socio-economic development of territories and maintaining the quality of natural resources, biodiversity and life.

To do so, Vale has made continuous investments in the management of environmental impacts of operations and research of new technologies that improve the environmental control systems. The guidelines that guide its actions are explained in the policy of sustainable development of Vale, a document that guides the process from decision making to the actions performed on the day to day operations.

Vale considers the respect for the environment a key component of its sustainability strategy, seeking to

balance environmental protection and economic development. To come to this end, the company has an Environmental Policy, in which commitments to environmental aspects are clearly explained.

The company's main points of its environmental policy are as follows:

- Maintain an environmental management system, aiming to ensure that activities comply with applicable laws and standards set by the company, in the absence of specific legislation, Vale will implement the best measures of environmental protection and minimizing risk.
- Educate and train employees to act in an environmentally responsible, ensuring the implementation of environmental policy.
- Develop research and incorporate new technology for continuous improvement activities, aimed at reducing environmental impacts and consumption of energy and matter.
- Maintain on-going dialogue with its employees and the community, aiming at improving environmental actions.
- Strive to their subsidiaries and affiliated companies to adopt practices consistent with this environmental policy.
- Request their products and services suppliers with proven environmental quality.

Vale policies, standards and environmental procedures are defined by the Department of Environment and Sustainable Development, which coordinates the Management System for Environmental Quality (SGQA) of the company, setting guidelines and targets, monitoring the development of environmental performance and providing tools for managing the environmental aspects related to the activities, products and services of Vale.

The Environmental Policy with the subsidiaries is still in process of discussion and alignment. In the context of the Management System of Environmental Quality are developed measures for monitoring, conservation, environmental protection and recovery which ensure the maintenance and recovery of ecosystems in which Vale operates.

The environmental management system is based on the guidelines ISO 14001 (International Organization for Standardization). Periodically, the operations are subject to external audits.

In recent years, important achievements were obtained in the rational use of water and energy, waste disposal and the awareness of people to environmental quality. Follows the environmental performance of the last three years. Vale is in fact aware that there are opportunities for improvement and is committed to the continuous improvement in building an environmentally friendly business model.

According to the report of the company, Vale has a great concern for environmental issues, and as a consequence there are significant investments in the environment. Its commitment is not limited to the environmental control systems that are required. The environmental aspect is an important component of the evaluation of new projects and decision-making investment for expansion of the company. Expenditures are monitored monthly and reported quarterly to the public opinion, and it counts with periodic financial audits.

The relationship with the various stakeholders is present in Vale environmental management. In each area where Vale acts, the company tries to be an agent of change, listening from outside and proposing alternatives and looks for integrating other social actors in the effort of finding solutions to environmental issues.

In 2008, Vale volume of resources invested in the environmental area was U.S. \$ 678 million, almost 50% higher than that achieved in 2007. Most of the resources were allocated to three lines of expenditure:

- acquisition and implementation of environmental control equipment, aiming to improve performance in existing operations;
- maintaining environmental and geotechnical safety of dams and waste dumps;
- Reforestation and rehabilitation of degraded areas, which form the program Florestar Vale.

9.5 Environment Quality

The management system of environmental quality determines the development of effective monitoring, conservation, environmental protection and rehabilitation, aiming to ensure the maintenance and recovery of ecosystems in which Vale operates. The system is based on the guidelines of ISO 14001 (International Organization for Standardization) to which additional aspects were added making up the standard of environmental quality in Vale. Aiming to assess the management and guarantee the evolution of performance, multiple transactions are submitted periodically to internal and external audits.

Policies, standards and environmental procedures of a general nature are defined corporately, and management is under responsibility of operations and business areas.

9.6 Social Aspects

The quest to build a positive social, economic and environmental legacy in regions where Vale operates is one of the principles that underlie the Sustainable Development Policy of Vale.

Activities, especially mining, are limited to the lifetime of the mineral deposit and therefore the presence in a particular place, in general, is finite.

Along the mineral cycle, there is a challenge to Vale: to make that actions are catalyst for regional economic development based on regional competences, which can ensure the perpetuity of social welfare in equilibrium with the environment. In that search, Vale performs management actions that enhance the positive effects of the presence of Vale, reducing the social risks of operations and at the same time, contributing to strengthening the foundations for local development in the long run.

Vale invests in integration, in cooperation with public and social agents, to encourage:

- The hiring of local employees and suppliers;
- Education for human development, for work and income generation;
- Planning the use of taxes generated by the operations of the company;
- The diversification of local economies;
- The strengthening of institutions;
- Environmental conservation and cultural heritage.

Thus, Vale tries to build social transparent networks, based on dialogue and permanent respect for the culture of each community. At the same time, tries to invest in management tools to foster the development of the territories. The intention is to build, considering society as a whole, the foundation for continuous improvement of quality of life.

9.7 Management of Local Development

Vale has several programs and tools, in different areas and regions of operation, to manage social and environmental impacts arising from the activities.

In the analysis of the feasibility of implementing projects, the methodology Front-End Loading (FEL) is adopted covering social, health, safety and environment, and economic and operational risks.

Furthermore, based on environmental, social and economic assessments, performed in the EIA/RIMA (Environmental Impact Assessment and Impact Report for the Environment), potential impacts of the presence of Vale are considered in the regions already in the phase of licensing and deployment projects.

These tools, together with the socioeconomic diagnoses made by Vale Foundation, conduct the Management Programs of Environmental and Socioeconomic Impacts, intending to find the mechanisms to avoid or minimize negative impacts and to maximize the positive impacts on the performance of Vale. These programs are implemented according to the needs of each project and consider the particularities of each region. Through these tools, it identifies the main impacts associated with the presence of mining. Among them stands out:

- Direct economic impacts
 - **Positive:** Generation of Employment, Vocational Training, Increased taxes, Hiring of local products and services, investments in infrastructure.
 - **Negative:** Environmental impacts such as dust and noise, interference with land use, risks of accidents.
- Indirect economic impacts
 - **Positive:** increase the wages, benefit income making, Leverage of other economic sectors, suppliers attraction, development of local suppliers, attraction of investments from various spheres of public and private sectors.
 - **Negative:** Pressure on infrastructure and public services, due to population increases; speculation in remote areas, due to the low housing supply and high demand; generation of economic leakage effects, due to the hiring of suppliers and employees of other regions, due to the lack of local businesses and experts.

9.8 Programs and Management Impact Practices

In order to leverage and maximize the positive outcomes of Vale in the territories, Vale works with structured programs considering the various relationships that Vale has set.

9.8.1 Qualification

Vale seeks to maximize the hiring of residents of the localities where it operates, especially in developing countries and remote areas.

Vale invests in professional training programs related to mining activities and other activities of the local economy. Through these programs, Vale aims to contribute to employment and income generation and diversification of the economy of the communities where it operates.

9.8.2. Relationship with Communities

At all stages of the company's ventures, from the start to the closing of operations, Vale counts with an Institutional relations and communications team. There are programs for establishing relationships with the communities that are based on a permanent and participatory dialogue between the community and Vale. Programs include visits to mining communities, meetings with leaders and participatory forums. In addition, it is intended to establish a direct and transparent dialogue with not only the community but also with the local government in order to build a harmonious relationship.

9.8.3. Relations with Traditional Communities

Vale gives special attention to the traditional communities in the localities where it operates. The basic guideline of the Interaction Program with Indigenous Communities is to ensure that the benefits generated by the project are enjoyed by the indigenous

communities, respecting their cultural traditions in order to avoid, minimize or offset any adverse effects that the activity may stimulate.

9.8.4 Culture appreciation

It is understood that anyone can contribute and participate in programs of recovery, revitalization and protection of cultural property. Projects are supported and agreements settled to the restoration of cultural and archaeological heritage of places where it operates. An example is the project of rescuing the language of the Kanak communities.

Besides these programs, implanted directly in the units, Vale Foundation works for the development of communities where Vale is present, helping to empower people and respecting local cultural identities through social programs structured.

9.9 Investment in Infrastructure

Over the past three years, the amount applied was approximately \$ 169 million. There is a fall in the investment in infrastructures in 2008 due to the completion of current projects.

In the following years, southeastern Pará may have significant investments to remedy deficiencies in existing social infrastructure and prepare the region for a projected economic growth of 18% per year. To deal with these investments, the municipalities have counted with an ability of own investment which may have generated gross savings of \$504 million between 2006 and 2010.

This is one of the main conclusions of the Integrated Socioeconomics Diagnostic of Southeastern Pará, a study made between 2006 and 2007, by Vale and Vale Foundation, under the auspices of *Diagonal Urbana*, a Brazilian consultant, specialized in integrated social management that counts with the participation of communities.

Although a significant structural deficit, the Southeast of Pará has great opportunities for sustainable development. After all, it is one of the richest regions of the world in natural resources and one of the major mineral provinces in the world. Since it has begun operations in the region, in the 80s, Vale has been supporting the development of the municipalities that are in its area of influence, while helping to preserve an area of 8 thousand km² of native forest in *Mosaico de Carajás*.

Investments in infrastructure, urban sanitation, education and culture have contributed significantly to the development of the region. Even the company's growth over this period brought more opportunities for skills and employment for residents, more business for

local suppliers and increase tax collection by government agencies, contributing to the local socioeconomic development.

Vale has currently 15 projects in the area and intended to make new investments, trying to reach the total value of U.S. \$13 billion (from 2003 to 2010). To increase its presence and be more effective and socially responsible, Vale and its Foundation have decided that, first, it was necessary to know the region, understanding the present moment and projecting the future in the region.

Diagnostics marks only the beginning of the *Plano de Gestão Integrada em Socioeconomia do Sudeste do Pará* (an Integrated Management Plan for Socioeconomics of Southeast of Pará), which also includes the steps of preparing and implementing the Action Plan. The Plan, which is already being prepared in 2007, determines what should be done in the investments area and how each party should participate. The action already implemented is a stage of implementation of improvements, including efforts to seek financing. "This is a powerful tool that allows Vale to contribute to the sustainable development in regions where it operates", according Vale Foundation. The Plan includes six municipalities (*Parauapebas, Canaã dos Carajás, Curionópolis, Marabá, Ourilândia do Norte and Tucumã*), and influences the *Eldorado dos Carajás*.

9.10 Health and Safety Activities and Policies

In 2007, Vale has continued to carry out the strategy for health and safety through various activities, among which are:

- Policy Review Health and Safety - the new text of the policy specifies the commitments and the basics of managing Health and Safety, which embody the value of respect for life.
- Elaboration of Requirements for Systemic Health and Safety - the standard defines what must be done to ensure the proper development of the organizational processes of Vale. These requirements stem from the Health and Safety Policy and its Principles. They are the ones that underlie the procedures, tools and performance indicators of health and safety management.
- Elaboration of Requirements for Critical Activities (RACs) - The requirements established for the execution of critical operational activities, with the purpose of preserving people's lives, ensuring the integrity and protect health in all areas of the company, so as in its subsidiaries and affiliates. The 10 activities of greater risk appetite for Vale are working at height, motor vehicles, mobile equipment, blocking and signalling, cargo handling, confined space, machine protection, slope stabilization, and detonated explosives and chemicals.

- Implementation of Information System Health and Safety - in order to improve the management and flow of information from Health and Safety, begins the deployment of a single information system for Vale in Brazil. The tool will support management decisions, according to the results of business areas.
- Membership in the Global Business Coalition on HIV / AIDS, Tuberculosis and Malaria - GBC (Global Business Coalition against HIV / AIDS, Tuberculosis and Malaria) - joins the group of more than 200 member companies of the GBC, an organization aimed at mobilizing resources for initiatives for combating and prevention of HIV / AIDS, tuberculosis and malaria.
- Event "Construction" - in June and July 2007, approximately 2.5 thousand leaders in Vale gathered in 19 cities of Brazil, to build together the foundations of a culture of prevention in health and safety.

The new Health and Security Policy of Vale, released in March 2008, establishes the following commitments:

- To control all risks associated with activities, processes, facilities, products and services.
- To act proactively in managing risks to health and safety of persons and facilities.
- Meet the legal requirements of health and safety and to take voluntarily.
- To continuously improve the performance in health and safety through the improvement of activities, processes, products and services, focusing on the use of innovative solutions and developing people competences.
- To encourage the development of performance in health and safety service providers.
- To maintain communication channels with the communities where operate and other stakeholders, so as to remain always alert to the influence of its operations in the health and well-being of people.

Since 2006, the performance goal of workplace safety (accidents with remote and internal corporate standards) is tied to variable pay of employees. In 2007, the process changed so that in contemplating the health data. The set of actions already implemented and the beginning of the process of cultural transformation have already shown some results.

Between 2005 and 2007, various measures to improve management of health and safety are implemented, for example, setting targets covering issues of health and safety for all departments and the intensification of awareness campaigns.

Starting in 2007, a process of improvement of registration procedures and data collection on health and safety began. The standards of classification of accidents were implanted according to the rules Occupational Safety & Health Administration (OSHA), the Agency for Safety and Health at Work in the United States, and

several initiatives for training and for employees awareness were held in order to standardize the recording of information.

With the implementation of this process, in 2007 some improvements were got.

Regarding the rate of accidents with lost time, a significant reduction was got over the period 2005 to 2007. This means that the accidents of greater severity were reduced. The perspective is that in the coming years, accident rates may continue to reduce, both because of the improvements implemented as because of the stability in the form of gathering and recording data. In this sense, the participation of Vale began in a working group of ICMM (SCHEBenchmarking) in order to align indicators of health and safety and occupational hygiene.

With regard to risk prevention and health guarantee, Vale maintains a rigorous system for identifying health risks in all its units. The goal is to use this information to the creation of specific programs that can be deployed, promoting an attitude of prevention by employees, relatives and the communities in which Vale operates. By the end of 2007, risks for the following diseases were identified:

- Occupational: musculoskeletal diseases, back pain, risk of hearing loss and pneumoconiosis.
- Endemic: intestinal parasites and diseases carried by animals, dengue, malaria, *chagas* diseases, yellow fever, hepatitis A and B, HIV / AIDS, leishmaniasis, and worms. Among the programs maintained by the company are: campaign to prevent sexually transmitted diseases - STD / AIDS, World Day to Combat AIDS, workshops on alcohol and smoking, and prevention campaigns against cancer and diabetes; support group for diabetics, hypertensives and people with cardiovascular risks; program of gym work, education program affective-sexual (Vale Youth - developed by Vale Foundation), aimed at young people from nearby communities in order to guide the sexual life and preventing the occurrence of sexually transmitted diseases; campaigns of vaccination against influenza, and inspections to prevent and treat dengue and yellow fever. Besides these initiatives, Vale offers health plans to its employees and third parties as described in the job session and People Development.

Such efforts have earned public recognition. The Healthy Living Program, of Albras, won in 2005, the Social Value Award (jury of experts and jury) in the category "Quality of Working Environment" and, in 2007, Lennart Levi Award in the category "Poster Enterprises", VII Congress of Stress of ISMA (International Stress Management Association). Vale invested U.S. \$ 25.2 million by the mid 2009.

According to the testimony of some local politicians, royalties would be a form of compensation to alleviate the problems acquired with the implementation of Vale projects in EPC. The royalties would also help to solve problems such as sanitation, health, etc., that are considered by municipalities as socially critical areas, which solutions would not be viable only with the transfers from state and from Union resources.

10. Concluding Notes

It is too early to gauge the results of this strategy. The impact of the conduct of social responsibility, especially in this aspect of environmental sustainability can only be realized in a longer period. In any case, and a perspective that brings us closer to an ex-ante, it is possible to draw attention to the conclusive following notes.

Companies with management strategy which believe in ethical and solidarity with their colleagues and with the Community share these processes as an important "capital".

Social responsibility is certainly not just philanthropy, but can/should also include this activity. Increasingly, social responsibility, in general, and promoting environmental sustainability, in particular, carries out an operation more effective if integrated into the global perspective of business and relationship with their environs.

The establishment of the whole strategy around climate change and policies considering the communities welfare allows to avoid dispersion and to avoid to stray image of a policy or meaningless policy without clear objectives. It reinforces the brand image with a seal of pertinence and internal coherence that enables more effective performance.

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