An Analysis of Sustainability in Business: Focused on Understanding Sustainability Indices in the Brazilian Market

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ABSTRACT

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The concern about climate change has increased the importance and raised awareness of the concept of sustainability. Painful choices in the decision-making process of companies will be made to reach a new sustainable path. This research shows the importance of implementing sustainable practices in business as an opportunity to reduce climate change impacts and improve environmental/social quality. While many companies are seeing today's challenges as opportunities and are successfully striving to pass through the difficult transition from "business as usual" to sustainable commerce, many others are not. If companies want to work on sustainable practices, they should put this goal at the core of their businesses, as opposed to an additional effort apart from their core concerns. This research demonstrates how four sustainability indices have been motivating Brazilian companies to achieve a sustainable path. It also provides recommendations to assist Brazilian companies to follow suit.

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TABLE OF CONTENTS

Page

ABSTRACT 3

ACKNOWLEDGEMENTS 4

LIST OF TABLES 8

LIST OF FIGURES 9

CHAPTER 1: INTRODUCTION 10

1.1. Competitiveness and Sustainability in Brazil 13

1.2. Brazilian Efforts of Putting Sustainability in Practice 16

CHAPTER 2: LITERATURE REVIEW OF THE CONCEPT OF SUSTAINABILITY IN BUSINESS 19

2.1. Sustainability from the Standpoint of the Triple Bottom Line 23

2.2. Concepts that Should be Linked to Sustainability in Business 28

2.2.1. Corporate Responsibility 28

2.2.2. Corporate Governance 29

2.2.3. Leadership 31

2.2.4. Consumer Choice 32

2.2.5. Companies Relationships with Channel Partners 35

2.3. The Wheel of Change toward Sustainability and the Value Chain 36

2.4. Putting Sustainability into Effect: An introduction to the sustainability indices ... 40

CHAPTER 3: A DETAILED EXAMINATION OF THE SUSTAINABILITY INDICES 43

3.1. Dow Jones Sustainability Index World (DJSI World): The stock market sustainability indicator of the world. 44

3.2. The Corporate Sustainability Index (ISE): The stock market sustainability indicator of Brazil 53

3.3. The Brazilian Enterprise Advice for Sustainable Development / Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS) 61

3.4. International Organization for Standardization (ISO) – ISO 14001: Environmental Management System (EMS) 70

CHAPTER 4: ANALITIC COMPARISON OF THE SUSTAINABILITY INDICES.... 82

Conclusion 96

CHAPTER 5: RECOMMENDATIONS FOR DEVELOPING SUSTAINABLE PRACTICES IN BRAZILIAN COMPANIES 109

5.1. Moving to Sustainability in Business: Changes within a Company 110

5.2. Moving to Sustainability in Business: Company's Processes and Its Relationship with Stakeholders 115

5.3. Moving to Sustainability in Business: Company's relationship with consumers/channel partners 119

5.4. Moving to Sustainability in Business: Environmental and Social Strategies 122

CONCLUSION 134

REFERENCES 139

APPENDICES 148

Appendix 1 – Doppelt's Seven Sustainability Blunders and Solutions 148

Appendix 2 - List of the DJSI World Components by Sector 150

Appendix 3 – Links to Other Resources 158

Appendix 4 – Advantages of Companies Listed on DJSI World 159

Appendix 5 - Institutions Responsible for Managing the Index / ISE 161

Appendix 6 – Description of Each Dimension of the ISE Questionnaire 162

Appendix 7 – Description of the Technical Groups / CEBDS 163

Appendix 8 – Environmental Management System / ISO 14001 165

Appendix 9 – Brazilian Institutions Responsible for Managing the Index / ISO 14001 166

Appendix 10 – Other Motivations for Having ISO 14001 Certificate 168

Appendix 11 – Suggestion to Implement an EMS / ISO 14001 169

Appendix 12 – Charts of Comparison / Sustainability Indices 173

LIST OF TABLES

Page

Table 1: Doppelt's Seven Sustainability Blunders and Solutions .....37 and 114

Table 2: Issues Identified and Reviewed in the CSM Process.....50

Table 3: Elaboration of the ISE Questionnaire 56

Table 4: Companies Listed in the ISE (Sectors).....57

Table 5: The CEBDS Board 65

Table 6: Members Responsible for the Technical Groups.....66

Table 7: The Current 50 Member Companies Listed in the CEBDS 68

Table 8: Outline: Example of an EMS Implementation 77

Table 9: Number of Certificates Issued in the World (2005) 79

Table 10: ISO 14001 Certificates among Brazilian Companies.....79

Table 11: Percentage per Sector of the Certificates Issued in Brazil (2006).....80

Table 12: Aspects Shared by the Four Indices.....98

Table 13: Aspects Shared by Three Indices.....100

Table 14: Aspects Shared by Two Indices.....103

Table 15: Aspects that Are Specific of One Index 107

Table 16: Credential Bodies of ISO 14001 in Brazil.....167

LIST OF FIGURES

Page

Figure 1: The triple bottom line 25

Figure 2: The wheel of change toward sustainability .....38 and 115

Figure 3: The value chain model .....39 and 116

Figure 4: DJSI World assessment criteria.....51

Figure 5: Division of the ISE questionnaire 60

Figure 6: The CEBDS technical groups.....66

Figure 7: The ISO 14001 environmental management system.....73

Figure 8: The General steps to sustainability.....110

Figure 9: Moving toward sustainability: The bubble diagram.....118

CHAPTER 1: INTRODUCTION

> *"The environmental issues are serious and urgent. The main problem today is the survival of humanity and to accomplish that sustainability plays a substantial role in this scenario." (Carvalho cited in Pena 2008:2)*
>
> *"Sustainability is the principle of ensuring that our actions today do not limit the range of economic, social and environmental options open to future generations." (Elkington 1999:20)*
>
> *"The future belongs to those who understand that doing more with less is compassionate, prosperous and enduring and thus more intelligent, even competitive." (Hawken cited in Edwards 2005: 49)*

A leading topic currently discussed in international political economy is the increasing concern about global warming, which has become one of the biggest challenges humanity has ever faced. This topic has, thus, increased the importance and raised the awareness of the concept of sustainability around the world. In this context, "sustainability is the principle of ensuring that our actions today do not limit the range of economic, social and environmental options open to future generations" (Elkington 1999:20). The concern about the impact of climate change on the environment has also stimulated the implementation of sustainable practices in the consumption and production processes of many companies.

Elkington (1999:28) defends that business will have the responsibility for a growing portion of the sustainability agenda. In this perspective, even though companies were created to make profit, today it is clear that their long-term profits may not be

achievable if their social and environmental impacts are not administered properly. Some management leaders have been paying greater attention to the potential relationship between the way they run their businesses and the implications to the environment, society, and sustainable development. Others are still using ecological metaphors in outlining the future winning business strategies (Elkington 1999:31). The steps toward sustainability transition are still not very clear, but one fact is evident: This transition is likely to destroy some industries, force a radical restructuring of others and create many new businesses.

The core of this research will be concentrated in analyzing the features of sustainability, from a corporate perspective, by investigating four important sustainability indices in which some Brazilian companies are listed. By looking at the requirements, features, and sustainability concepts compelled in each index, I will catch sight of the means companies have been using to move toward sustainable practices and companies' efforts to be listed on these indices. Hence, through the analysis of the indices I will answer the following research questions:

1. *How have the four sustainability indices been motivating Brazilian companies to achieve a sustainable path?*
2. *Do sustainable practices contribute to the competitive advantage of these companies?*

The outcomes from the analyses of the indices will become recommendations to assist Brazilian companies in the implementation of sustainable practices in their

businesses. While providing my recommendations, I will give examples of the sustainability approaches of some Brazilian companies listed in the indices to better clarify and illustrate the application of sustainability in business. At the end of this research, I will also shed some light on the very last question:

3. *How can companies in Brazil apply sustainable practices in their businesses?*

Finding answers to these questions may aid businesses in making the right decisions concerning the implementation of sustainable practices, as well as in evaluating potential competitive advantages.

My goal in this research is to increase Brazilian companies' awareness about the importance of applying sustainability concepts and practices in their businesses, given the impacts of climate change, which are all together putting the environmental and social quality of the world in danger. Thus, the companies that are concerned about this issue, and are smart enough to implement sustainable practices, are likely to have more credibility and more competitive advantages over the ones that have not taken into account the benefits they might get through these practices.

The thesis is divided into five chapters. This present chapter is an introduction to the topics of this research and to the research questions. Chapter two discusses the literature review of my research, which is consisted of explaining the concept of sustainability in business. In chapter three I provide a detailed examination of the four sustainability indices. Chapter four consists of the results of my research in which I make an analytic comparison of the four sustainability indices. I concluded my work in chapter

five by providing recommendations regarding the application of sustainability in companies' practices based on the study, analysis, and results of previous chapters.

1.1. Competitiveness and Sustainability in Brazil

Nations, organizations and companies have been trying to integrate and adjust to global and competitive markets and, therefore, have been searching for creative alternatives to prosper and to increase their long-term profits. The research conducted by the Dom Cabral Foundation in Brazil, together with some larger Brazilian companies (Marques, et al. 2004:1), recommended some interesting points to increase knowledge about the management of companies. It stated that there has been an emphasis on the competitiveness issues related to the Brazilian companies' productive processes only. The current scenario suggests that companies should have a more competitive attitude in the sense of looking for more and better options to reduce environmental impact caused by their activities. Companies should also have a more cooperative behavior in their relationships with society, stakeholders, suppliers, customers, and each party that may be involved and affected at some degree by their activities.

Today, companies have access to an abundance of information coming from global markets. The companies that are well-managed and efficient will properly sift through said information to obtain potential opportunities for their sustainable practices. According to Marques et al (2004:1), this allows companies to create and work with more pro-active strategies. Hence, companies should be capable of interpreting the information from the market, associating this information with the potential tendencies and changes,

and relating the information to the type of business they have in order to create assertive strategies and increase their own competitiveness. As rightly stressed by Hawken (cited in Edwards 2005:49), “The future belongs to those who understand that doing more with less is compassionate, prosperous and enduring and thus more intelligent, even competitive.”

Regrettably, as noted in the research of the Dom Cabral Foundation, the concept of sustainability is not well understood among some Brazilian companies. In some Brazilian companies for example, sustainable practices are merely associated with financial or competitive aspects by advertising their products and aggregating value to their brand name, disregarding environmental or social issues that are involved in their businesses (Marques, et al. 2004:6). Similarly, Silva and Quelhas (2006:1) reveal that sustainable practices in Brazilian companies are still part of some isolated actions or environmental system management that are only present on paper, without any real action. On the other hand, they stress that some Brazilian companies seem to have future initiatives to boost sustainability; some of them are already committed to outstanding sustainable practices.

Moreover, as underscored by Hilton (2003:372), it is crucial for any company to focus on their customers’ needs and desires during a companies’ decision-making processes. Customers are becoming more demanding in their decision making, particularly due to the flow of information regarding the need to combat global warming, using recycled and renewable resources, among others. Environmentally friendly companies are likely to have advantages over the ones that are still relying on “business-

as-usual" [1] practices. Thus, to differentiate from "business-as-usual" practices, the vision and goals of sustainable companies should be clear and simple to make sure that their customers will understand the value of the companies' sustainable practices. Additionally, Hilton (2003:372) suggests that consumers should see the products of a company as superior products in comparison to the competition. He also asserts that corporate responsibility, which is likely to deliver awareness about the importance and the value of companies' sustainable practices, results only when companies' decision-making takes their customers' needs and satisfactions into account (Hilton 2003:372).

Bringing this analysis to the case of Brazilian companies, it is relevant to mention that according to the research of the Akatu Institute (Arini and Ferreira 2008:1), posted in March 2008, 74% of Brazilians want to buy products that do not degrade the environment. The consumer never had as much power. This institute is responsible for the first national surveys on the relationship between consumption and social and environmental responsibilities among Brazilian companies. The director of the Akatu Institute, Mattar Helium, asserted that "what was a market niche, today is a requirement; as we make good choices, we influence other industries and suppliers whose environmental politics determine the future of the planet" (cited in Arini and Ferreira 2008:1). In this regard, my research will focus mainly on the requirements of four sustainability indices aiming to increase awareness about the importance of sustainability in business. From the results, recommendations will be provided to assist other Brazilian companies implement sustainability in their businesses.

[1] Companies' behavior in which they relate to environmental concerns and regulatory compliance as impediments to business success. Further information is provided on page 21.

1.2. Brazilian Efforts of Putting Sustainability in Practice

Overall, many Brazilian companies from different business sectors, have been following patterns of cleaner production and social projects by incorporating sustainable measures in their goals. Many of those companies are already included in some sustainability indices, such as the following:

- The Dow Jones Sustainability Index World (Costa 2007:1),
- The Corporate Sustainability Index - Bovespa/ Índice de Sustentabilidade Empresarial da Bovespa (ISE) (Bovespa 2007:1),
- The Brazilian Enterprise Advice for the Sustainable Development/ Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS) (CEBDS 2008:1c),
- The International Organization for Standardization (ISO) 14001 Management Standards (Bordokan et al. 2008:16-18), among others.

Previous research has shown that companies that are included in these sustainability indices take into consideration, besides financial sustainability, environmental quality and quality of life in their goals and daily practices. These companies see in the practice of sustainability an opportunity to increase their own credibility in domestic and international markets. They believe in the Brazilian potential to counterbalance climate change and they are mainly looking for the production and consumption of products that cause less environmental impact such as reduction of greenhouse gas emissions and renewable sources to generate energy. Companies are also looking for the emergence of more social programs in the surrounding communities.

Brazil has been moving toward an increase of its share of new renewable energy sources. The country has a notable propensity for generating this type of energy, primarily because of its features of biomass, climate and topography, as well as the favorable conditions for hydropower, solar and wind energy (Cardoso 2007:1). It is also relevant to underscore here the investments that the Brazilian government has been making in ethanol – a colorless volatile flammable liquid derived from sugarcane – which can be used as an alternative fuel source. Currently, the country is not only a world leader in ethanol production, but it is also the main exporter. The projected production of ethanol for 2018 is 41.6 billion liters, more than double the 2007 production (SEBRAE 2008:1). It is important to note that Brazil is already a traditional leader in the issues that involve diminishing global warming effects. In this context, Fábio Feldman, the executive secretary of Climate Change and Biodiversity of the Paulista Forum in Brazil, asserts that the mechanism of clean development proposed by the convention of climate change in the Kyoto Protocol originated from a Brazilian initiative (cited in Spatuzza 2007:1). This has created an expectation for Brazil to play a role at the forefront in implementation of sustainability. Furthermore, to completely address the concept of sustainability, Brazilian companies are also investing in social programs, principally in the communities surrounding areas where these companies operate. The social programs are very relevant given the fact that Brazil has considerable social inequality.

Concisely, the principal purpose of my research is to answer the proposed questions through descriptive research. This research will show the importance of the implementation of sustainable practices as an opportunity to reduce global warming

impacts, improve environmental and social quality and simultaneously increase companies' credibility and competitiveness. While many companies are seeing today's challenges as opportunities and are successfully striving to pass through the difficult transition from "business as usual" to sustainable commerce, many others are not. The message of this project is clear: if companies want to work on sustainable practices, they should put this goal at the core of their business. Companies would not be able to work on sustainable practices just as an additional effort apart from their core concerns. Therefore, I will emphasize the features of the four sustainability indices and illustrate the efforts of some Brazilian companies, which are putting into effect real changes toward sustainable approaches in their businesses.

CHAPTER 2: LITERATURE REVIEW OF THE CONCEPT OF SUSTAINABILITY IN BUSINESS

> *"Sustainability, as a new value will be the price of entry that society will demand for business success in the 21st century." (Anderson cited in Elkington 1999:1)*
>
> *"Businesses developing a competitive edge in this area - sustainability advantage – will be much better placed to identify and win a share of new markets."(Elkington 1999:61)*

The concept of sustainability has not only been brought to the table in the past twenty years, but it has so many meanings that it is difficult to actually put the concept into effect, especially in a short term. For the purposes of this research, I will define the concept of sustainability as it relates to business and I will simply point out the ideas that are the most relevant for this study.

The idea of sustainability itself was first introduced in 1987 during the Brundtland Commission of the United Nations. The product of this commission, the Brundtland report (cited in Edwards 2005:17), addresses the most commonly used view about the concept of sustainable development: "[sustainable development is] development that meets the needs of the present without compromising the ability of future generations to meet their own needs." The key objectives of this report entail "(a) stimulating economic growth, (b) meeting basic needs for jobs, food, energy, water, and sanitation, (c) guaranteeing a sustainable rate of population growth, (d) preserving and boosting natural

resources, (e) managing risks of technology operations, and (f) combining ecological and economic considerations in decision making" (Elkington 1999:55).

Interestingly, the objectives of the Bundtland report can be easily applied to the corporate environment. Due to the fact that environmental resources are often overexploited and limited, the Brundtland report highlighted the need to integrate environmental and social decisions into the business' central economic decision-making (Dresner 2002:33). According to Doppelt (2003:139), in business, sustainability means "managing human and natural capital with the same vigor we apply to the management of financial capital." In simpler words, it means widening the scope of companies' awareness so that they can fully comprehend the true cost of every choice they make.

Moreover, Stuart Hart (cited in Elkington 1999:71) – director of the Corporate Environmental Management Program at the University of Michigan – argues that those corporations that understand that sustainability is just a matter of pollution control are "missing a bigger picture." Hart further explains that the increasing need for corporate sustainability relies on the fact that the roots of the crises – the impacts of global warming/climate change, intensive exploitation of natural resources, social inequalities, poverty, among others – are political and social issues that surpass the command and competency of any corporation. On the other hand, he invites everyone to see an interesting paradox, that is, the fact that corporations are the only organizations that have resources, technology, global reach (in some cases) and motivation to achieve sustainability (Elikington 1999:71). In view of that, Clarke (cited in Dresner 2002:30) stresses that painful choices in the decision-making processes within a company are

likely to be made to reach a new sustainable path. He emphasizes that sustainability is a process of changing the means of exploiting resources and directing investments, adjusting the technological development and encouraging institutional change. As firms start to implement sustainable practices they are likely to increase their credibility and competitive advantage, and therefore others will probably follow suit. Yet, it is not sufficient to formally implement such practices; it is more important to be able to use them appropriately to reduce negative environmental and social impacts.

Any given country can have its development based on businesses that are not sustainable, such as businesses whose activities have led to exhausting natural resources, polluting the environment (air, water, and soil) as well as profiting from extreme deforestation. However, if the management of a given company is not well prepared to put into effect reduction of such environmental damage, the final results may be dramatic for that company, not to mention that the externalities of the actions of this specific company will certainly affect other companies, societies and even countries as well. This can be defined as the "business as usual" approach, in which companies relate to environmental concerns and regulatory compliance as impediments to business success (Edwards 2005:50).

On the other hand, while "business as usual" used to be a very common practice from the corporate point of view, the concept of sustainability has been gaining importance and has been changing this corporate attitude by associating sustainable practices with successful business. As stated by Peter Senge (cited in Edwards 2005:49), "the ability to learn faster than your competitors may be the only sustainable competitive

advantage." Additionally, Uhl (2004:38) suggests that sustainability is a new manner of seeing and relating to the world in order to maintain a certain level of social and environmental quality. Instead of being considered as an impediment to business success, sustainable practices – including ecological, economic and social concerns – are being associated with business opportunities. Elkington (1999:61) even declares that "businesses developing a competitive edge in this area - sustainability advantage – will be much better placed to identify and win a share of new markets."

Henderson (1999:46) points out the importance of going beyond globalization, reflecting on global warming impacts, and looking toward to a new reality: the relevance of shaping a new (sustainable) way of thinking. He states that knowledge is the key factor of production and benchmarking and audits are the means to a successful social/environmental performance. A survey was conducted by Toronto-based Environics International, Ltd. for the US-based Conference Board and the UK's Prince of Wales Business Leaders Forum (Henderson 1999:46) in which they interviewed 25,000 people in 23 countries. The survey found that two out of three respondents believed that companies should not focus only on making profits, employing people, paying taxes, and obeying laws, but should also contribute to broader environmental and social goals. This survey highlighted the need for companies to take time and rethink their strategies in order to develop new ones that are more socially and environmentally friendly. Henderson suggests that companies should consider a reform entailing the shift of all products and processes in order to move toward sustainable strategies and practices (1999:48).

Sustainability has been challenging business managers to re-evaluate the means of operating their enterprises and measuring their success. Succinctly, it can be stressed that the concept of sustainability sets sights on planning the potential actions that companies, institutions and nations should take in order to preserve the world's environment and improve social equity, given the current circumstances. Thus, companies that are using sustainable approaches are setting a new standard in corporate responsibility. As suitably pointed out by Debora D. Anderson – vice president, Environmental Quality Worldwide, Procter and Gamble – "sustainability, as a new value, will be the 'price of entry' that society will demand for business success in the 21st century" (cited in Elkington 1999:1).

2.1. Sustainability from the Standpoint of the Triple Bottom Line

> *"Business executives wanting to grasp the full scale of the emerging challenge must audit current performance and future targets against the triple bottom line." (Elkington 1999:69)*
>
> *"The more we learn about the challenges of sustainability, the clearer it is that we are poised at the threshold of an historic moment in which many of the world's industries may be transformed." (Hart cited in Elkington 1999:72)*

In 1994, John Elkington invented the concept of the triple bottom line. According to Elkington, companies must have a "triple bottom line," in order to perpetuate their businesses. This means that they should include three aspects as the core of their businesses: social responsibility, environmental responsibility, and financial revenue.

This concept has become very useful in explaining the perspective of sustainability in business mostly because of the misinterpretation/vagueness of its meaning. For instance, when not solely associated with profitability, it is also related to environmental sustainability concerns/eco-efficiency. “This definition is dangerously narrow,” states the Professor Tom Gladwin (cited in Elkington 1999:6). Companies should consider social sustainability aspects/concerns in their strategies as well.

As asserted by Elkington (1999:69), “business executives wanting to grasp the full scale of the emerging challenge must audit current performance and future targets against the triple bottom line.” According to him, the challenge is to find a way to get corporations to embrace and sustain a wider and new set of values (Elkington 1999:x). Additionally, he remarks that the ability of an individual company to satisfy the traditional bottom line of profitability and at the same time satisfy the two emergent bottom lines will enhance the market success of that company (Elkington 1999:xi). Figure 1 illustrates the triple bottom line approach. It shows how the interrelationships between the economic, environmental, and social factors combine to produce sustainability.

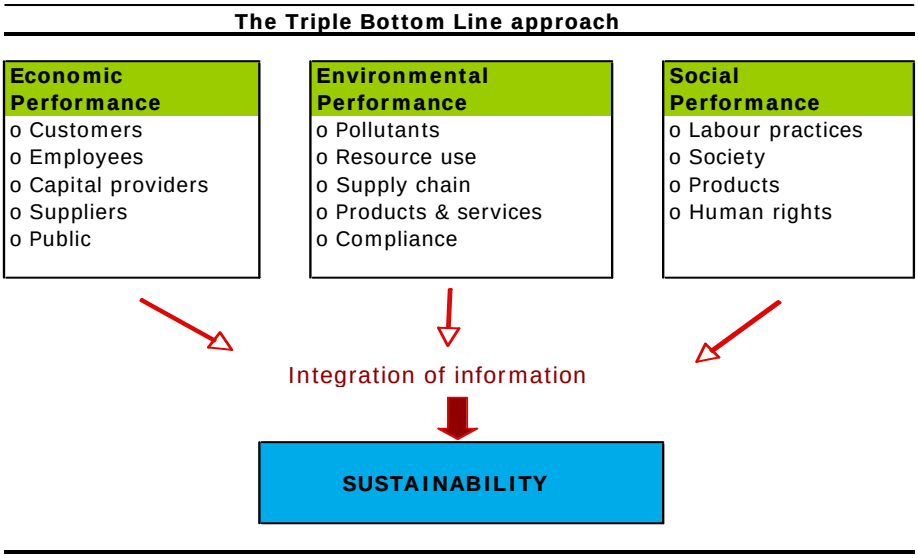


Figure 1. The triple bottom line.

Source: Adapted from Elkington found in Business ethics.

Economic Bottom Line

In regard to the economic bottom line, companies should do the following to move toward the triple bottom line of sustainability.

- Companies should check if their costs are competitive and expected to remain so, as well as if their profits are sustainable.
- Companies should verify whether the demand for their products and services is sustainable, and also make sure that their rate of innovation can be competitive in the long run.

- Companies should ensure that human capital[2] will support the values of the organization (Elkington 1999:75).

Environmental Bottom Line

The creation of international environmental management standards, such as the ISO 14001 standard, serves as a tool to facilitate the steps to be taken toward the environmental bottom line at the company level. While addressing the environmental bottom line in their values, companies should consider the following aspects in implementation.

- Companies should examine the types of natural capital affected by their current/planned activities and also investigate whether these forms of natural capital are sustainable under the practice of their activities.
- Companies should also have a clear understanding about the overall level of stress caused on the environment as well as determine whether these types of environmental stress are sustainable and likely to affect the balance of nature significantly (Elkington 1999:80).

Environmental justice[3] is a crucial aspect that has become the biggest challenge for business-as-usual practices. It is important but, at the same time, difficult to measure; it stands between the environmental and social bottom lines. Elkington (1999:83) suggests that many companies have been intimidated by environmental justice issues referring to the way society is somewhat disadvantaged by environmental problems. Therefore,

[2] The set of skills which an employee acquires on the job, through training and experience, and which increases that employee's value in the marketplace (Investorwords)
[3] Environmental justice is fair treatment and meaningful involvement of all people—regardless of race, ethnicity, and income or education level— in environmental decision making (LM).

companies should take into account the externalities, such as pollution and emission of toxic gases, generated by their activities in order to avoid complications – complaints or even lawsuits – that can diminish performance and lessen the value of their business. In conclusion, the environmental bottom line brings a new form of evaluating the influence of companies on environmental problems by relating their performance to the amount of emissions/waste produced per unit of a volume/value of production (Elkington 1999:82). For instance, an oil company associates its environmental performance with each barrel of oil produced. By using this approach, said company can demonstrate to consumers and stakeholders the environmental impacts of its activities.

Social Bottom Line

The social bottom line involves the relationships between companies and their employees/stakeholders as well as companies and society. When companies start approaching the social bottom line in their values, they should consider the following aspects.

- Companies should be able to find the critical forms of social capital[4] in terms of their capability to become sustainable corporations.
- Companies should also develop the role of their businesses in terms of sustaining human and social capital (Elkington 1999:86).

Accounting for the Triple Bottom Line

Given the aspects of the three components of the triple bottom line, Hart (cited in Elkington 1999:72) declares that "the more we learn about the challenges of

[4] Social capital represents the active connections between people; including trust, mutual understanding, shared values, and behavior that bind together the members of groups, networks, and communities and make cooperation possible (Quantum III).

sustainability, the clearer it is that we are poised at the threshold of an historic moment in which many of the world's industries may be transformed." Many companies have been restructuring their industries to reestablish natural balances, such as the production of heat and light without any carbon emissions, making paper by recycling papers that used to be considered wastepaper, and other activities. However, as the triple bottom line has shown, sustainable corporations need to go beyond environmentally friendly technologies and radically address new views of business values, social equity, and environmental justice. Therefore, companies must be convinced that society, economy, and environment are the triangle of factors that decisively affect the performance of businesses in the future. For that reason, companies that are moving toward sustainable practices should definitely include this triangle in the way they run their businesses.

In addition to the triple bottom line, companies must also consider some concepts that should be linked to sustainability in their businesses. They are: (a) corporate responsibility, (b) corporate governance, (c) leadership, (d) consumer choice, and (e) channel partners. These concepts are presented next.

2.2. Concepts that Should be Linked to Sustainability in Business

2.2.1. Corporate Responsibility

Often the notion of corporate responsibility is brought to the table with the issues related to sustainability in business. Corporate responsibility seeks an efficient "fit" between businesses and the societies in which they function (OECD 2001:7). This "fit" refers to the mutual dependence among businesses and society, in the sense that

businesses will only prosper if society reciprocally prospers. In the same way, society is likely to fail if the business sector fails. Thus, the role of corporate responsibility relies on the actions taken by businesses to cultivate and boost this relationship. The principal component of corporate responsibility concerns the traditional means of conducting business activities. Businesses are expected to follow regulations as well as respond to society expectations. “Corporate behavior must not only ensure returns to shareholders, wages to employees, and products and services to customers, but it must also respond to societal and environmental concerns” (OECD 2001:158). Indeed, it seems that businesses have been embracing corporate responsibility as they influence the impact of their activities on stakeholders, customers, suppliers, employees, communities, and environment.

2.2.2. Corporate Governance

Governance combines all the effects of the interaction of all the parties involved – employees, stakeholders, customers, and consumers – to promote sustainability (Bressers and Rosebaum 2003:65). It refers to the way rules are formulated and implemented by business managers during the decision-making process. Changes in governance provide the greatest overall leverage for leading businesses toward sustainability. Governance systems shape the way information is gathered and shared, decisions are made and enforced, and resources and wealth are distributed (Doppelt 2003:78). Succinctly, it can be stressed that information shapes the ability of individuals to make informed decisions. Likewise, the levels of commitment individuals are likely to have to the company are

associated with the way resources and wealth are distributed, the type of information they receive as well as the role they play in the decision making. Thus, all of these factors together influence the way power and authority are distributed within a company. Power and authority shape the manner that all the parties involved perceive the world around them as well as the way they are motivated.

Doppelt (2003: 79) makes an interesting point when he asserts that governance involves more than formal authority. According to him, when companies associate their governance with the decision making made by top executives or other formal authorities, they are narrowing their view. This is actually a very common mistake companies make. If they are looking to become a sustainable business, companies should realize that the organization consists of individuals and groups with constantly changing interests, needs and commitments. It is very crucial that the new forms of governance regarding sustainability provide employees and stakeholders with credible information to expand their understanding of the importance of sustainable practices. It is essential to better train employees/stakeholders to resolve and manage problems and potential changes in companies' activities. It is also important to involve them in the decision-making process, as well as to equitably distribute resources and wealth to increase their motivation and commitment to the corporation. By doing that, it becomes easier to overcome resistance and also allows the potential for people to work on the path of sustainability. Therefore, when changing the ways of governance, corporations should remember that the information that is available to people shapes their understanding and their ability to make good decisions (Doppelt 2003: 79). The more sustainability-focused information

becomes available throughout an organization, the more likely people are to understand its meaning and commit to change.

2.2.3. Leadership

> *"The ultimate key to transforming the governance system of an organization so that it embraces sustainability is leadership." (Doppelt 2003:38)*

Globalization has put a higher demand on leaders than ever before. Currently, business leaders have started to assume more responsibilities over the people they work directly with, and also over the actions of everyone who is somehow involved in the process. Due to the increasing demand for sustainable development, leaders are called upon to accept responsibility for future generations as well. Doppelt (2003:38) makes the connection between governance, leadership, and sustainability by asserting, "the ultimate key to transforming the governance system of an organization so that it embraces sustainability is leadership." Thus, leadership plays a key role in the process of implementing sustainability because it is able to promote a dialogue that creates change. Leadership is not just about being at the top; in fact, in high performance organizations where sustainability is successfully present, effective leaders are likely to develop throughout the organization.

Influencing others is true leadership. A prepared leader must have the ability to bring people together, despite the division made by hierarchy and job positions, to attain sustainable results over time. People want to be inspired by a greater purpose, and it is the

leader's role to guide them to this purpose. Hunter (2004:34) truly believes that the core essence of leadership is to execute tasks to achieve the target results while building relationships. As underscored by him, everything in this life takes place around relationships, and great leaders have the capacity of building healthy relationships (2004:35). In short, healthy relationships with employees, clients, owners and suppliers guarantee a healthy business, and efficient leaders understand this simple principle.

I will close this portion of my research by using the idea of James Hunter who asserts that a leader does not necessarily need to like her players and her partners, but as a leader she must love them: "Love is loyalty, love is team work, love respects the dignity and the individuality" (Hunter 2004: 72). Bringing corporate governance and leadership together with corporate sustainability, it is very important to emphasize that sustainable practices will only take place once these two concepts are well defined within all the functions of a company. While corporate governance is taking care of the interaction of all the parties – actors and functions – involved in the business; corporate leadership is responsible for influencing and ensuring that such interaction is meeting the needs and satisfaction of all the parties, as well as achieving the desirable results – in this case sustainability in the business.

2.2.4. Consumer Choice

"The choices of consumers can potentially exclude unsustainable companies." (Martins cited in Vicaria 2008:3)

Consumers have been playing a critical role in the adjustments many companies must make to put into effect sustainable practices. Green consumerism is a very hot topic in the 21st century, but many consumers are still confused by inconsistent information. Hailes (MNS4S 2007:1) suggests that "if most people knew the environmental impacts of their shopping habits, they'd make 'greener' choices." In addition, Elkington (MNS4S 2007:1) argues that "businesses would be more 'green' if they knew that this would bring them more customers."

The green wave/labeling versus consumers

Today, almost all the products distributed on the shelves of stores have some green argument attached to them. Selling a good environmental image became a strategy to add value to companies. As the options for greener products multiply, consumers should be careful to not be lost in a "new forest of green promises" (Arini and Ferreira 2008:1).

According to research by Akatu, in Brazil an average of 75% of consumers recognize their power in influencing the decision making of companies. However, only 24% are actually making use of this power to question or even boycott environmentally-harmful products (Arini and Ferreira 2008:1). In addition, this research also found that the credibility of green and social marketing is decreasing; it dropped from 50% to 39% among Brazilian consumers, between 2005 and 2008. As underscored by Mattar (cited in Arini and Ferreira 2008:3), this serves as an alert that consumers are getting more conscious.

A common mistake that can increase the mistrust of consumers is the language used on the products' labels. Often, consumers find it difficult to comprehend their meaning. Another ordinary mistake is induced by the presence of the recycle label. It signifies that the product can be recycled but gives no guarantees that this will actually be put in action. On the other hand, Arini and Ferreira (2008:3) suggest that certifications, such as ISO 14001, can be used as efficient tools to raise the credibility of the green actions taken by companies.

By trying to increase the credibility of consumers, some companies have found that counting the molecules of pollutants is the most transparent criterion that their products can have to distinguish themselves from others. For each glass of orange juice, two glasses of oil are needed (Vicaria 2008:1). Cavasin, (cited in Vicaria 2008:2) insinuates that in a short time, the amount of pollution created by products will be a requirement on the labels of those products, along with the nutritional information. This is likely to influence consumers' decisions in the stores, which can impact a chain of industries and transportation that together emit a great portion of greenhouse gas in the atmosphere. Vicaria (2008:2) asserts that at least 77% of total emissions in the world come from our daily consumption decisions[5].

As issues of climate change have been increasingly coming into sight, Elkington (1999:56) declares that consumers have started to feel their fingers on the button of environmental destruction. Elkington (cited in Arini and Ferreira 2008:3) also infers that consumers should find information about a specific product before buying it. According

[5] These data are taking into account the emissions of industries, agriculture, transportation, and the generation of electricity.

to Osvaldo Martins (cited in Vicaria 2008:3), director of the consulting company Iniciativa Verde, consumers are the only ones who can favor the green companies. He stresses that "the choices of consumers can potentially exclude unsustainable companies." At this point, it is not possible to ensure that consumers can save the world or even save the Earth's climate. But for now, it is understood that consumers' choices can make a substantial impact on the increasing need for sustainable practices and on the changes corporations are forced to make in order to meet consumers' satisfaction and gain their trust.

2.2.5. Companies Relationships with Channel Partners

In addition, companies should develop a solid relationship with their channel partners, such as distributors and suppliers, among others. It is critical to extend the concept of sustainability among stakeholders within channels and encourage them to engage in sustainable practices throughout the whole business value chain[6]. In this context, companies should, for example, provide external audits of their suppliers' and distributors' activities. It is important to do a background check on their stakeholders' activities to find out their level of sustainability maturity. External audits help to find those activities that are still contrary to the sustainability approach. By knowing the vulnerability of said activities, it becomes easier to find more sustainable solutions. The point here is to emphasize that companies looking for more sustainable practices should not be limited only by the practices that occur within its functions. On the contrary, these companies must be able to pass on the concept of sustainability among their stakeholders

[6] More information about the value chain of companies is provided on page 39.

(consumers/customers) throughout their value chain in order to close the loop of sustainable practices.

2.3. The Wheel of Change toward Sustainability and the Value Chain

Marques et al (2004:2) further argue that the sustainability of a given company depends on the sustainability of its interested parties, such as the stakeholders, suppliers, distributors, and clients. A harmonic, transparent and equal relationship between companies and interested parties is very important to properly implement changes in the companies' strategies and practices as well as to achieve common interests and goals among them. Hence, to address the concept of sustainability, the whole company – as well as all the parties in the value chain – should become involved in a new way of thinking and behaving (Hilton 2003:376).

Doppelt (2003:17) brings up the idea of many organizations believing that sustainability in their businesses simply entails improving controls and increasing efficiencies of their existing harmful production system. According to him, this is the reason for many companies' failings in applying sustainable practices to their businesses. Many companies do not comprehend that the implementation of sustainable practices extends beyond the production or financial functions. He points out seven sustainability blunders that are associated with companies' failures to implement sustainable practices (Doppelt 2003:89) (See Appendix 1 for detailed information on each blunder/solution). For each blunder, Doppelt suggests solutions (see Table 1) that, once set in motion, create "the wheel of change toward sustainability" (see Figure 2).

Doppelt separates the solutions presented in Table 1 into three dimensions. The first three solutions come together to build a new organizational mental model and organizing framework. The fourth and fifth solutions set up the corporate environment to design and test new ways of thinking and operating. The sixth and seventh solutions provide means to make sustainability grow and continue over the long term (Doppelt 2003:88).

Table 1.

Doppelt's Seven Sustainability Blunders and Solutions

Blunder		Solution
Patriarchal thinking that leads to a false sense of security	→	Change the dominant mind-set that created the system through the imperative of achieving sustainability
Siloed' approach to environmental and sociale conomic issues	→	Rearrange the parts of the system by organising deep, wide and powerful transition teams
No clear vision of sustainability	→	Alter the goals of the system by crafting an ideal vision and guiding principles of sustainability
Confusion over cause and effect	→	Restructure the rules of engagement of the system by adopting source-based operational and governance-change strategies
Lack of information	→	Shift the information flows of the system by tirelessly communicating the need, vision and strategies for achieving sustainability
Insufficient mechanisms for learning	→	Correct the feedback loops of the system by encouraging and rewarding learning and innovation
Failure to institutionalise sustainability	→	Adjust the parameters of the system by aligning systems, structures, policies and procedures with sustainability

Source: From Doppelt 2003:88.

Since the suggested wheel of change toward sustainability is circular, the starting point does not really matter, as long as all seven points on the wheel are covered. Companies should consider reviewing these seven blunders to check if any blunder applies to their case. If so, they should rethink their strategies to better achieve sustainability within their organizations.

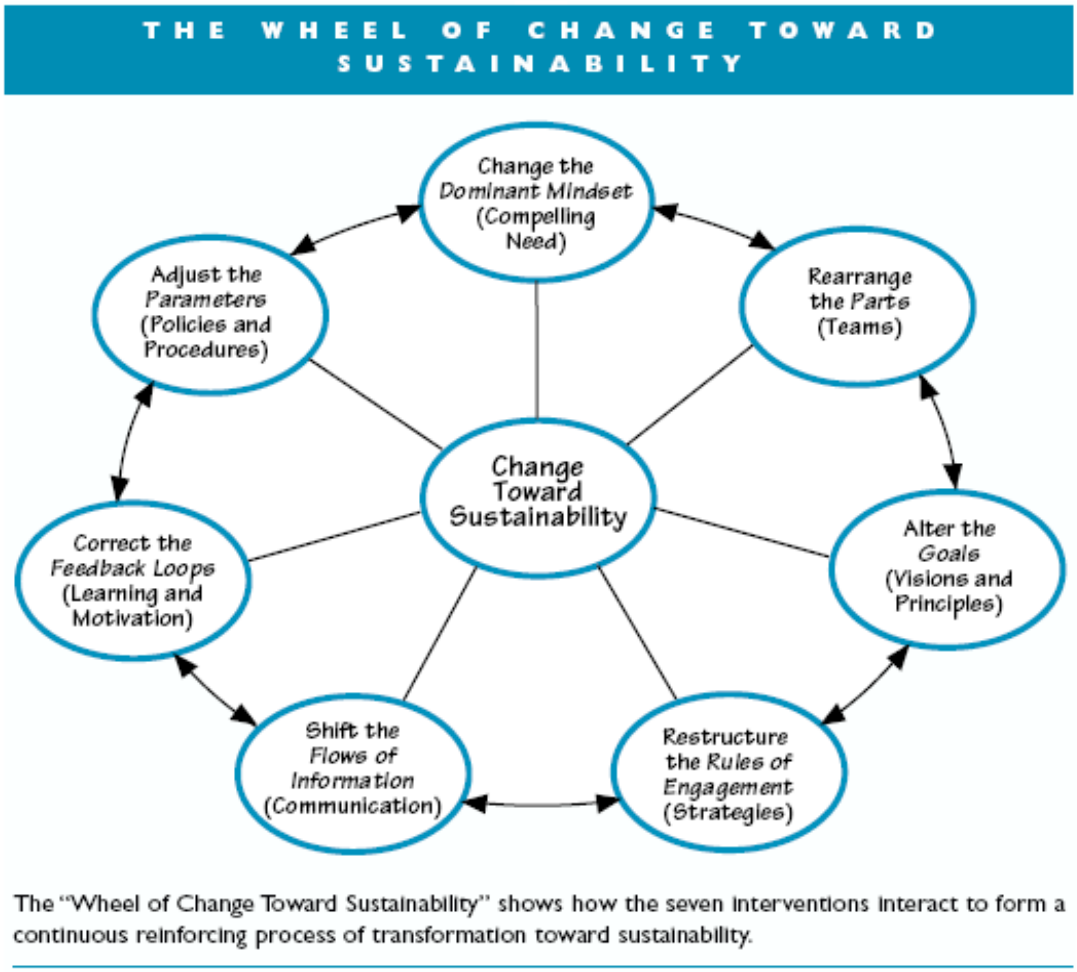


Figure 2. The wheel of change toward sustainability.

Source: From Doppelt 2003:89.

At this point, it is also relevant to discuss the value chain (See diagram in Figure 3). Succinctly, this diagram concerns the way functions within an organization are put together to increase efficiency in all functions, and consequently add value to organizations. It is important to emphasize that value is not just about revenues. Value is the degree of excellence to which something meets and exceeds needs. Therefore, in

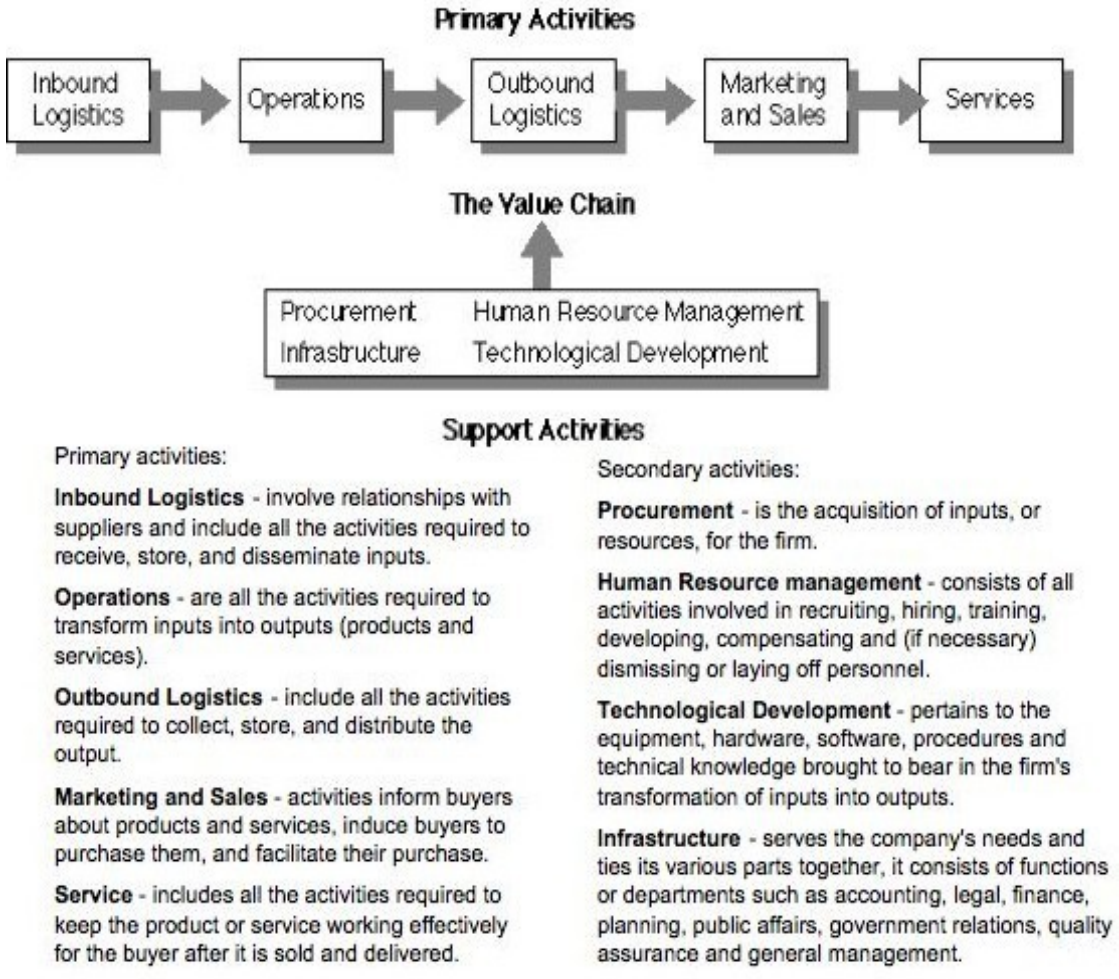


Figure 3. The value chain model.

Source: From Porter found in IFM.

applying sustainability in their values, companies have to take into account the needs of all the actors involved in their activities, such as stakeholders, employees, investors, suppliers, competitors, and customers. Nonetheless, all the functions of companies – accounting, marketing, management, and finance, among others – should be engaged in the same way of thinking as well as in the same level of satisfaction and efficiency. The activities of a company – the ones involving actors and functions – must fit together and reinforce one another to add value to the company. The value of a company has to be the same throughout all the actors/functions to embrace sustainability and efficiency in the company's strategy.

2.4. Putting sustainability into effect: An introduction to the sustainability indices

In the beginning of the 21st century, many companies increased their concern with social and environmental impacts related to their businesses. The foremost contributor to these changes in companies' behavior across the world is the Dow Jones Sustainability Index World (DJSI). Since it was launched in 1999, this index has been shaping a new wave of social and environmental investments in Brazil and in the rest of the world. The creation of a simple sustainability index, based on the New York Stock Exchange (NYSE), has influenced and improved the institutional images of companies, increased the demand for well-structured social-environmental projects, and promoted societies' quality of life. The positive outcomes from the Dow Jones Sustainability Index motivated the creation of three more sustainability indices: one in London, one in Johannesburg, and another one in São Paulo (ISE). Similarly important are the creation of other

sustainability indices, such as the CEBDS and the ISO 14001. They were created before the DJSI World, and they are not limited to the evaluation of those companies listed in stock markets. For this reason, they can provide opportunities for more companies to be recognized by their sustainable practices. Together, these indices exemplify the growing tendency of implementing sustainability among corporations.

Companies concerned with their reputation, credibility, and recognition in national and international markets find that profits are not enough. They are increasingly investing in social-environmental projects. According to John Prestbo (Mundo Sustentável 2007:1), editor and executive director of Dow Jones Indices, the DJSI World's criteria basically evolve around practicing sustainability as an integral part of a company's businesses strategy. Interestingly, Prestbo declares that companies that enter the DJSI World are not expected to have their stocks values raised immediately, instead, he emphasizes that the DJSI World is more related to a reputational gain and a reputational advantage over competitors. For Prestbo, companies listed in the index are more committed to the quality of life of the surrounding population: "I think that the companies that do practice sustainability are good for the communities that they operate in and good for the countries they operate in, because they help raise a general standard of excellence." He asserts that these companies are the ones likely to pay attention to issues like the environmental impact of various business initiatives or certain consequences of their actions on society and the environment.

Bringing Prestbo's statements to a broader view, it can be said that sustainability questions, related to environmental or social issues or corporate governance have to be

built into the companies' basic businesses strategies. Companies which do that the best are the ones that are recognized and valued by stakeholders/shareholders. Such companies are the ones likely to get listed in the sustainability indices. Prestbo (Mundo Sustentável 2007:1) also argues that Brazilian companies have shown a lot of leadership in practicing sustainability and a couple of them (Itaú and Cemig) have been in the DJSI World since 1999. But he highlights that given the size of the Brazilian economy, more Brazilian companies should take part in the annual survey.

In the next chapter, I will analyze the DJSI World, followed by the ISE, the CEBDS and the ISO 14001.

CHAPTER 3: A DETAILED EXAMINATION OF THE SUSTAINABILITY INDICES

The first two chapters of this research serve to broaden the understanding about the concept of sustainability in business as well as to show how it should be linked to the core of companies' businesses. The concepts and ideas presented in the previous chapters will provide a better understanding about the substantial role played by sustainability indices. Their increasing importance – in the context of sustainability in business – relies on the fact that they have been used as tools to measure companies' sustainability performance and consequently increase companies' reputation and credibility.

In this chapter, I will analyze the influence that sustainability indices have over the behavior of companies, particularly in Brazil. Therefore, here I will investigate four sustainability indices. For each one, I will provide a brief explanation about its creation and the requirements to be followed by companies interested in being listed by these indices. The outcomes of this chapter will give me the base to create the charts of comparison among the four sustainability indices. These charts will be developed and analyzed in the following chapter.

Although there are other indices, I decided to evaluate these four because they are the most relevant tools to Brazilian firms from any sector. The family of Dow Jones Sustainability Indexes, for example, consists of a global (World), European/Eurozone, and North American/U.S. index. However, for the purpose of my research, I considered only the Dow Jones Sustainability Index World, which is the most relevant index, among the DJSI family, to Brazilian companies (DJSI 2008:5a). Another example is the Equator Principles, which is a benchmark for the financial sector to manage social and

environmental issues related to project financing (Equator Principles 2008:1). Because the Equator Principle is industry specific, I left it out of my research, since my intent is to aid Brazilian companies from any industry to approach sustainability in their businesses.

Because each index has its own means of evaluating companies, the comparison among them becomes relevant to better understand the aspects on which companies should be working in order to get listed or improve their sustainability performance. However, it is important to emphasize that even the companies that are not eligible to be listed in these indices – because they are not big enough for example – should no longer disregard the valuable information given through these comparisons. Through these comparisons and the analysis of each index, it becomes easier to choose the steps to be taken by companies interested in approaching sustainability in their businesses – and also to be listed, if they can be eligible. Below is the description of the four sustainability indices.

3.1. Dow Jones Sustainability Index World (DJSI World): The stock market sustainability indicator of the world.

> *"By seizing the opportunities and by effectively managing risks, sustainable companies enhance their competitive position, and are thus better positioned to create investor value." (SAM Group 2008:16b)*

- *What is DJSI World?:* It is the world's first financial benchmark tracking financial

performance of leading companies[7] in regards to corporate sustainability (SAM Group 2008:4b). The DJSI is currently in its 10th edition (Portal Qualidade 2008:1). Companies that are selected to participate in the DJSI are considered the best performing companies in regard to economic, environmental, and social practices from all sectors. Besides having the best performance in corporate sustainability, these companies are also the largest ones in terms of free-floating market capitalization[8] in their sectors. At present, the DJSI World has 320 listed companies from 27 countries (See Appendix 2). Since its creation, the DJSI has been an important reference for administrators of foreign capital.

- *Need to launch the index:* Sustainability was a known ingredient in European politics for many years and a number of companies had expressed an interest in having a benchmark for sustainability. Consequently, the Dow Jones Indices – a leading global index provider – found a sufficient demand for a sustainability index back in the 1990s. Thus, on September 8th, 1999 the Dow Jones Indices teamed up with Sustainable Asset Management (SAM)[9] and launched the Dow Jones Sustainability Index World (DJSI World) (DJSI 2008:5a).

- *Definition of sustainability*: Basically, the DJSI World acknowledges companies that are industry leaders in the aspects of economic, environmental, and social performance (the triple bottom line). Thus, to be included in the indices, companies must

[7] Leading companies in terms of corporate sustainability are identified according to the scores – based on the answers in the questionnaire – in which each company gets in the SAM's corporate assessment.
[8] The total dollar market value of all of a company's outstanding shares. It is calculated by multiplying a company's shares outstanding by the current market price of one share. It can be used to determine a company's size (Investopedia)
[9] SAM is the first investment group focused exclusively on the integration of economic, environmental and social criteria into investing. SAM Research does research both for SAM Asset Management and SAM Indices. All three entities belong to SAM's Group. (SAM Group 2008:2b).

practice corporate sustainability. That means that companies should be able to create long-term shareholder values by managing sustainability related opportunities and risks through an outstanding strategy. According to SAM "by seizing the opportunities and by effectively managing risks, sustainable companies enhance their competitive position, and are thus better positioned to create investor value" (SAM Group 2008:16b).

- *Foundation of the index:* SAM's internationally recognized leading corporate assessment methodology is the foundation for the DJSI World. Transparency is the key principle of this index and through it interested parties are able to evaluate and challenge SAM's approach. According to SAM (SAM Group 2008:16b), sustainable companies are likely to improve their competitive position and be better positioned to provide investor value when they take advantage of opportunities and administer risks efficiently. Additionally, the DJSI World uses the "Best-In-Class"[10] approach as a tool to help identify best practices across the economic, environmental, and social aspects of corporate sustainability (SAM Group 2007:1).

- *Institutions responsible for managing the DJSI World:* There are two institutions, the Dow Jones & Companies and SAM Group (DJSI 2008:43a).

- *Review:* The annual review accounts for the development of sustainability trends, related opportunities and risks, and change in companies' performance, and therefore ensures an accurate reflection of sustainability leadership across the world. There is also a quarterly review that takes place in March, June, September, and December. All reviews aim to ensure that the index composition accurately represents the top 10% of leading

[10] Best in Class: Highest current performance level in an industry, used as a standard or benchmark to be equaled or exceeded (Business Dictionary).

sustainability companies in each DJSI sector (DJSI 2008:26a). Furthermore, during the time a company is listed in the index, all listed companies constantly pass through an ongoing review to assess extraordinary corporate actions – such as takeovers, spin-offs, initial public offerings, bankruptcy among others – that can potentially affect component companies as well as their corporate sustainability performance (DJSI 2008:28a).

- *Costs:* There is no charge for the companies that are invited to take part in the SAM assessment. SAM Group 2008:3a).

- *Maximum number of participants:* The participation of companies in the DJSI World is limited to the target selection for each of the eligible DJSI World sector – 10% by number[11]. There is also a 20% of the market capitalization target selection for each sector[12] (DJSI 2008:28a).

- *Identification of companies*: The invitation to eligible companies for participation in SAM's corporate assessment depends on two criteria: (a) companies must be a component of the Dow Jones Wilshire Global Index (DJWGI) and, (b) components must have their investable stock universe[13] consisting of the largest 2,500 companies in terms of market capitalization. The selection of companies for the DJSI World has a starting universe based on the DJWGI, which is composed of about 12,000 companies from many countries. The largest 2,500 companies – in terms of their market capitalization –from the DJWGI are invited to take part in SAM's assessment. From this group of 2,500

[11] E.g. a sector has 100 companies, thus, 10 companies – the ones that represent 10% in terms of best performance in economic, environmental, and social criteria – of that sector are chosen for the index.
[12] The 20% target serves to add more companies in case the cumulative market capitalization of the selected companies represents less than 20% of the market capitalization of that sector (DJSI 2008:28a).
[13] The investable stock universe of a company is its market capitalization. Thus, to be eligible to participate in the DJSI World, the investable stock universe of a company must be among the DJGWI's 2,500 largest companies, in terms of market capitalization (DJSI 2008:26a).

companies, the top 10% of leading corporate sustainability companies are chosen for the DJSI World (DJSI 2008:18a).

In the annual review, eligible companies are evaluated according to seven criteria (See Appendix 3 Link 1 for more details). They are: Sector Classification, Corporate Sustainability Assessment, Ranking within Sectors, Eligible Sectors, Eligible Companies, Component Selection, and Market Capitalization Coverage (DJSI 2008:28a). Succinctly, companies with a higher percentage of the best corporate sustainability performance score in their DJSI World sector are the ones that have priority in the selection process.

- *Participation of companies*: Companies participating in the annual review have to fill in SAM's questionnaire and submit it, along with required documentation[14]. SAM is responsible for employing the researchers and analysts that go over the questionnaire and assign points to each question and to the answers that each company gives to those questions. At the end of the process, the points are added up and the companies with the highest scores in every sector are selected for the index.

- *Exclusion of companies*: During the time listed in the index, companies can be removed from the DJSI World if the companies no longer fulfill the requirements of the index or do not satisfy the corporate sustainability monitoring.

[14] Documents such as companies' sustainability, environmental, health and safety, social, and annual financial reports; special reports assessing issues such as corporate governance, branding, risk management, climate change mitigation, supply chain standards, employee relations; and other sources of company information, such as internal documents, and public information on their website (DJSI 2006:1a).

- *Component to evaluate the performance of listed companies (before/after the selection process):*

There are three tools used to evaluate the performance of listed companies: (a) SAM provides a questionnaire to be answered by eligible companies that have to submit it along with a set of documents for SAM's analysis; (b) SAM also investigates publically available information and makes personal contact, if necessary, before and after the inclusion of companies in the index; (c) and finally, SAM performs corporate sustainability monitoring after the companies have been included in the index.

All the information submitted by companies passes through a verification process that includes crosschecking answers with companies' documentation, checking up on companies' track records and incidents, verifying companies' performance in managing crises with media and stakeholders reports, and if necessary, direct contact with the companies (DJSI 2008:9a). After SAM's analysis, Deloitte & Touche LLP[15] makes an external assurance report to guarantee that the annual sustainability assessments are completed in accordance with the established rules (DJSI 2006:2a and DJSI 2008:4b).

Corporate Sustainability Monitoring (CSM) is an efficient tool used to continuously monitor companies' corporate sustainability performance, once they are listed in the DJSI World. It is used to verify companies' involvement with and management of crucial economic, environmental, or social issues, which are likely to affect companies' reputations and performance. Most important is the fact that the CSM can actually exclude companies from the index if they are not comfortable with companies' ability to

[15] Deloitte & Touche LLP provides industry-focused services, such as audit and assurance of sustainability reporting, for public and private clients in order to build public trust and enhance value (Deloitte 2008:1). Deloitte & Touche LLP audits the DJSI annual review and is paid by SAM Group.

overcome possible crises (DJSI 2006:5a). The issues that are identified and reviewed in the CSM process are listed in Table 2 (See Appendix 3 Link 2 for more details).

Table 2.

Issues Identified and Reviewed in the CSM Process

Issues identified and reviewed in the monitoring process:
o Codes of Conduct; e.g. tax fraud, money laundering, antitrust, corruption, and bribery.
o Corporate Governance; e.g. balance sheet fraud and insider trading.
o Customer Relationship Management; e.g. product recall and customer complaints.
o Risk and Crisis Management; e.g. accidents, fatalities, workplace safety issues, and technical failures.
o Supply Chain Management; e.g. major price fixing and unfair competition cases.
o Environmental Management; e.g. ecological disasters, hazardous substances, and grossly mismanaged long-term pollution.
o External Stakeholders; e.g. cases indicative of company systematically exploiting weak governance in emerging countries.
o Labor Practice Indicators; e.g. cases involving discrimination, forced resettlements, child labour and discrimination of indigenous people; workplace accidents, and occupational health and safety.
o Remuneration, Benefits, Flexible working schemes; e.g. extensive layoffs and strikes.

Source: From DJSI 2008:14a.

- *Characteristics of the questionnaire*: The questionnaire has two major components. The first component is the general sustainability criteria – that is the same for each sector – and the second component includes the industry specific sustainability

criteria – that differs between sectors and is defined according to the Industry Classification Benchmark (DJSI 2007:1). The questionnaire is divided into three dimensions, and each accounts for a third of the assessment. The industry specific questions always depend on the industry itself (See Appendix 3 Link 3 for more details). For this reason, analysts can adjust the weighting to some extent to reflect industry specifics. Figure 4 gives a detailed description of the Corporate Sustainability Assessment Criteria.

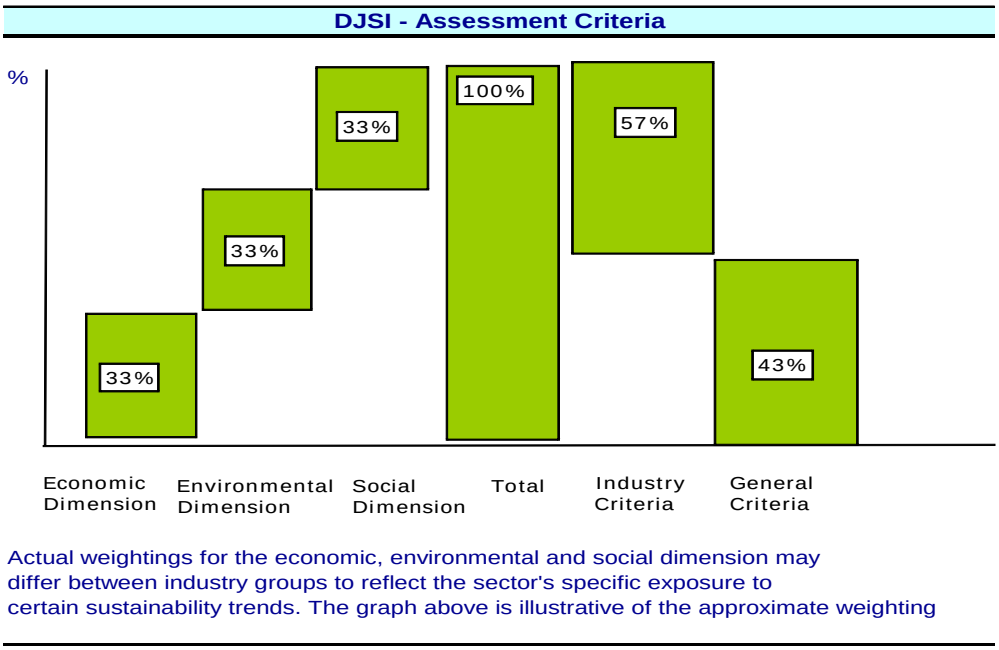


Figure 4. DJSI World assessment criteria.

Source: From DJSI 2008:9b.

- *Advantages to companies listed on DJSI World:* By being listed in the index, companies are likely to gain advantages related to: (a) sustainability investing, (b) value creation, (c) reputation and brand, (d) benchmark feedback, (e) DJSI membership logo, and (f) sustainability trends (SAM Group 2008:2a and DJSI 2006:1b) (See Appendix 04 for more details).

- *Participation of Brazilian companies:* The annual review of DJSI World for 2008 was released on September 4, 2008. Eight Brazilian companies are listed: Aracruz, Bradesco, Itau Holding Financeira, Cemig, Itaúsa Investimentos, Petrobrás, Usiminas, and Votorotim Celulose e Papel (VCP). The VCP was newly included in this last review. In order to participate in the index, Brazilian companies had to optimize the mechanisms of production to reduce environmental impacts and bring more benefits to society.

The participation of Brazilian companies in the DJSI World has been increasing. It started with two companies and currently there are eight. However, this number is relatively small given the universe of Brazilian companies that could be considered. According to Sybille Borner (Amanhã 2008:1), a Senior Analyst of SAM, the percentage of Brazilian participation is a little bit smaller than other countries. She asserts that in developed markets, such as Europe and Japan, at least one fifth of companies are participants in the DJSI World. In Brazil, however, the average is one-sixth.

There are two factors that work against the participation of Brazilian companies in the DJSI World. The first one is the small number of Brazilian companies listed on the NYSE, because to be listed in the DJSI World companies must have negotiable shares on the NYSE. The other factor is the language barrier. As stated by Borner, according to

SAM's experience in analyzing companies, the familiarity with English influences the participation of companies from non-English speaking countries. She underscores that often it is very difficult to overcome the language barrier and some companies are not able to express their reports and practices in a clear way, making it difficult to participate in the index. The DJSI World also influenced the creation of the Bovespa's Corporate Sustainability Index (ISE) in 2004, which has served as an example for Brazilian companies (Mundo Sustentável 2007:1).

3.2. The Corporate Sustainability Index (ISE): The stock market sustainability indicator of Brazil

> *The ISE "is a validation of the many companies that recognize the depth of the value proposition inherent in environmental and social responsibility."* (IFC 2005:1a).

- *What is ISE?:* The Corporate Sustainability Index (ISE) was inspired by the good results of the Dow Jones Sustainability Index World, launched in 1999. The ISE is a sustainability index that serves to track not only economic and financial performance of the Brazilian companies listed on the Stock Exchange of São Paulo (BOVESPA), but also to track companies' corporate governance and environmental and social performance.

According to Assaad Jabre (IFC 2005:1a), the International Finance Corporation (IFC)'s acting executive president, a growing number of companies in emerging markets have been understanding that going public is likely to increase their competitiveness and efficiency. Consequently, as companies start to take this path, they realize that potential

investors are looking for more information, more transparency, as well as higher standards on environmental/social issues and corporate governance. Therefore, the ISE has been helping position Brazilian companies in terms of long-term economic, social and environmental performance. This index is the first of its type to take place in Latin America and it is expected to serve as a model to other developing countries concerned with introducing a sustainability index (IFC 2005:1a).

- *Need to launch the index*: Globally, the demand for socially responsible investments has been increasing and currently they are popular in the stock markets such as the DJSI World. Investors have been looking for companies that are socially responsible, sustainable and profitable in which to invest their resources. Sustainable companies produce value for investors in the long-term because they are better prepared to face economic, social and environmental risks. In Brazil, for example, this demand has been fortified and it tends to increase and consolidate rapidly (Bovespa 2008:3b). Motivated by the demand for a national financial industry, the Stock Exchange of São Paulo (BOVESPA) started to look for a benchmark to serve as reference to their ethical financial products. As a result of this trend, BOVESPA, along with other institutions, launched the Corporate Sustainability Index (ISE) in December of 2005 to serve as a reference for the socially responsible investors.

- *Definition of sustainability:* Sustainability is defined as the long-term commitment of companies to higher standards on corporate governance, economic, environmental, and social performance. It concerns three long-term aspects: the companies' relationship with employees, suppliers, shareholders, and communities, the

environmental impact of companies' activities, and the management of corporate governance in terms of economic, environmental and social issues.

- *Foundation of the index:* the ISE index based its values on the international triple bottom line concept, which evaluates companies in terms of economic, financial, and social dimensions. In its analysis, the index also added performance indicators related to general aspects of the company, characteristics of products, and corporate governance (Bovespa 2008:3b). The index uses a cluster[16] analysis to evaluate the answers that companies give in the questionnaire and classify the selected companies qualified for the ISE.

- *Institutions responsible for managing the Index:* BOVESPA along with other institutions, such as the International Finance Corporation (IFC) and the Center for Sustainability Studies at the Getúlio Vargas Foundation (CES/FGV) (See Appendix 5).

- *Review:* The ISE has an annual review. From the total of 394 companies listed on the BOVESPA, only 40 (maximum) are selected for the ISE (Gazeta Mercantil 2008:1a). Table 3 shows the annual review process, along with the process for designing the ISE questionnaire.

- *Costs:* Companies have to pay a registration fee of R$ 3,000 or approximately 1,630 USD[17] dollars – value based on the year of 2007/2008. Also, an annual fee[18] of R$ 10,000 or approximately 5,435 USD dollars for the right to use the ISE logo (Bovespa 2008: 23d).

[16] "Clusters analysis is a body of techniques concerned with developing natural groupings of objects based on the relationships of the *p* variables describing the objects." (Churchill 1969: Glossary).
[17] Estimated exchange rate: 1.00 USD = R$1.84 (O Globo 2009)

Table 3.

Elaboration of the ISE Questionnaire

Elaboration of the ISE questionnaire	
Phase 1	
March	Elaboration of version 1
April	Meeting with companies 15-30 Workshops with specialists (Elaboration of version 1)
May	May 20th - June 17th - feedback from the public
June	3rd - Public Audience 30th - Approval of the final version
Phase 2	
July	15th - availability of the final questionnaire in pdf 15th - beginning of the registration of companies in the system and payment of the registration fee.
August	15th - last day for registration and payment of the fee 1st-30th - period to fill in the eletronic questionnaire
September	1st-13th - submission of the complement documents
Phase 3	
Sept/Oct	Analysis of the documents
November	ISE Board meeting Last week - annoucement of the seleted companies

Source: From Bovespa 2008:25-27d.

- *Maximum number of participants:* The maximum number of companies in the ISE portfolio is 40. The ISE board has decided that the ISE portfolio should have approximately one third of the number of eligible companies, which corresponds to 120-130 companies. The maximum number of 40 companies force potential candidates put forward their best efforts either to enter or to remain in the portfolio. However, fewer companies may comprise the portfolio if, among the eligible universe, there are not 40

[18] Both fees serve as financial resources to help in the viability and accuracy of activities needed in the revision process of the ISE.

companies with high standards of sustainability according to ISE selection criteria. This is the case for the current portfolio, which has 30 Brazilian companies listed (Table 4).

Table 4.

Companies Listed in the ISE (Sectors)

BRAZILIAN COMPANIES (30)	SECTORS (13)	SECTOR (%)
1 DASA - DIAGNOSTICOS DA AMERICA S/A	ANALYSIS/DIAGNOSTIC	0.638
2 ELETROPAULO METROP. ELET. SAO PAULO S/A	ELECTRIC ENERGY	
3 CESP - CIA ENERGETICA DE SAO PAULO	ELECTRIC ENERGY	
4 TRACTEBEL ENERGIA S/A	ELECTRIC ENERGY	
5 CPFL ENERGIA S/A	ELECTRIC ENERGY	
6 ELETROBRAS - CENTRAIS ELET. BRAS. S/A	ELECTRIC ENERGY	
7 CEMIG - CIA ENERGETICA DE MINAS GERAIS	ELECTRIC ENERGY	
8 COELCE - CIA ENERGETICA DO CEARA	ELECTRIC ENERGY	
9 LIGHT S/A	ELECTRIC ENERGY	
10 CELESC* - CENTRAIS ELETRICA DE SANTA CATARINA	ELECTRIC ENERGY	
11 AES TIETE S/A	ELECTRIC ENERGY	
12 EDP - ENERGIAS DO BRASIL S/A	ELECTRIC ENERGY	13.945
13 BANCO DO BRASIL S/A	FINANCIAL INSTITUTIONS	
14 BANCO UNIBANCO S/A*	FINANCIAL INSTITUTIONS	
15 BANCO ITAU S/A	FINANCIAL INSTITUTIONS	
16 BANCO BRADESCO S/A	FINANCIAL INSTITUTIONS	54.695
17 ODONTOPREV*	HEALTH SERVICES	0.271
18 PERDIGAO S/A	MEAT/DERIVATIVES	
19 SADIA S/A	MEAT/DERIVATIVES	2.872
20 VOTORANTIM CELULOSE E PAPEL VCP	PAPER AND PULP	
21 SUZANO PAPEL	PAPER AND PULP	1.464
22 NATURA	PERSONAL CARE PRODUCT	1.086
23 BRASKEM	PETROCHEMICAL	0.555
24 DURATEX*	SANITARY METAL FITTINGS	0.457
25 GERDAU MET	STEEL INDUSTRY/METALLURGY	
26 GERDAU	STEEL INDUSTRY/METALLURGY	8.081
27 TIM PART S/A*	TELECOMMUNICATION	
28 TELEMAR*	TELECOMMUNICATION	6.743
29 EMBRAER - EMPRESA BRASILEIRA DE AERONAUTICA	TRANSPORTATION/MATERIAL	2.996
30 SABESP - CIA SANEAMENTO BASICO EST SAO PAULO	WATER/SANITATION	1.288
* Companies included in the index on November 2008. Simultaneously, Aracruz, CCR Rodovias, Copel, Iochpe-Maxion, Petrobras and WEG were excluded from the ISE.		

Source: From BOVESPA 2008:1a[19].

[19] It was unexpected news when Petrobras was excluded from this index on November 26th, 2008. The index did not provide much information, but it seems that Petrobras did not meet the reduction of sulfur content in the diesel to be commercialized in Brazil on January 2009 (Gazeta Mercantil 2008:1b).

- *Identification of companies:* The index adopts "positive screening", which means not excluding any sector (IFC 2005:9b). Companies are invited to be listed in the ISE, but they must be included in the BOVESPA and have liquidity[20] assets among the 150 most traded assets over 12 months prior to the evaluation. The shares of such companies have to be traded in at least 50% of all trading sessions in the 12 months prior to the evaluation process. Additionally, companies must satisfy the sustainability criteria established in the annual questionnaire. The final portfolio of the ISE will represent the cluster of companies – recalling the maximum of 40 companies – responsible for the best sustainable practices in the dimensions of the questionnaire (Bovespa 2008:5b).

It is interesting to point out that out of an average of 130 companies invited to participate in the ISE index, only half, an average of 56 companies, actually took the time to answer the questionnaire. According to Nogueira (Tiburcio 2008:1), the operational director of Bovespa, many companies had difficulty in answering the most complex questions in the questionnaire, mainly because all questions would have to be applied to the companies' subsidiaries. Also, some companies hired external auditing to help in the bureaucratic documentation.

- *Participation of companies*: Invited companies are required to answer the sustainability questionnaire and submit associated documents. The ISE Board chooses the companies that are better classified in the aspects of relationship with employees, suppliers, and community, corporate governance, and environmental impact of activities (Bovespa 2008:14c).

[20] Liquidity: refers to a high level of trading activity. It is the degree to which an asset or security can be bought or sold in the market without affecting the asset's price (Investopedia).

- *Exclusion of companies*: While listed in the index, companies can be removed from the ISE if: (a) Company does not satisfy some of the inclusion criteria; (b) does not pay; (c) fails to meet the sustainability criteria specified in the questionnaire; (d) goes into judicial receivership or bankruptcy; (e) has significant alteration in the levels of sustainability and social responsibility; or (f) if a considerable portion of shares are withdrawn from circulation on the market, in cases such as public offerings. Necessary adjustments will be made to ensure continuity in the index in all cases (IFC 2005:1a).
- *Components to evaluate the performance of listed companies:* In the questionnaire, all the elements associated with sustainability of each sector are evaluated. That includes potential risks and other impacts related to the nature of products and services of each company. The questionnaire is divided into six dimensions (Figure 5): general aspects, features of products, corporate governance, economic, environmental, and social dimensions (See Appendix 6 for details on each dimension of the questionnaire). Each of the economic, environmental, and social dimensions entails a set of four criteria. They are: political (indicators of commitment), management (indicators of plans, projects, goals, and monitoring), performance (indicators of performance), and legal issues (fulfillment of norms regarding human rights, environmental, social, and consumers' legal issues) (IFC 2005:11b).

In the final evaluation of the questionnaire, the cluster analysis is used to avoid errors in the sum of scores from the evaluation of the dimensions that are so different

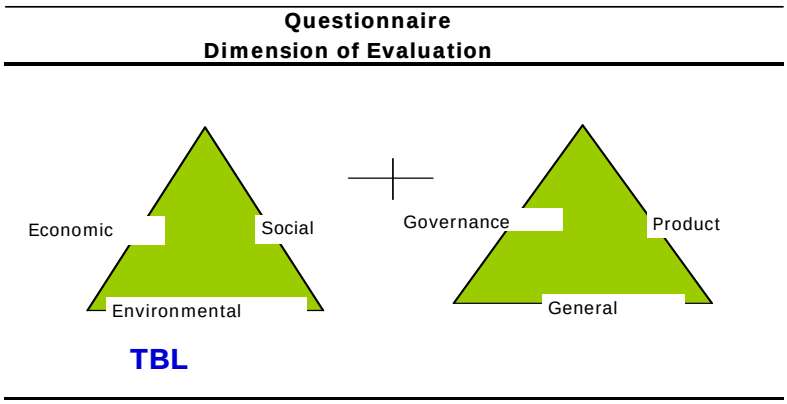


Figure 5. Division of the ISE questionnaire.

Source: From Bovespa 2008:14c.

from each other, such as environment and governance. This tool helps identify groups of companies with similar performance in each dimension. In this sense, the final result is determined according to the cluster of companies with the best practices in all dimensions (IFC 2005:12b).

- *Advantages to companies listed in the ISE:* The included companies gain reputation and credibility in the market by being a company with corporate responsibility; they are recognized as companies that consider sustainability in the long run; and companies that take responsibility for their impact on the environment, and create ways to reduce such impact. Companies listed on the index have an advantage over their competitors who are not listed. By being more transparent, included companies provide more credibility for investors, and as a consequence reduce their cost of capital. The creation of the ISE stimulated the development of ethical investment funds interested in

buying shares of the companies listed on the index. In short, the ISE is considered as a stamp of excellence in the Brazilian market (Bovespa 2008:38c).

3.3. The Brazilian Enterprise Advice for Sustainable Development / Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS)

> ***"****The participation of society, the Government, the scientific community, the non-governmental organizations, and in particular, the corporate sector is essential in order to stimulate reflection about our consumption and production patterns." (Cardoso cited in CEBDS 2008:1d).*
>
> *"The CEBDS was launched with the intention to help putting into effect the good practices that the corporate sector has been longing for." (Feder cited in CEBDS 2008:4a)*

- *What is CEBDS?:* The Brazilian Enterprise Advice for Sustainable Development (CEBDS) is a non-profit organization. It was launched in 1997 through a private initiative as component of the network of advice associated with the World Business Council for Sustainable Development (WBCSD)[21] (Azevedo 2006:80). It represents a national enterprise institution that works on the implementation of sustainable development in Brazil. This index represents a coalition of some of the biggest Brazilian companies that

[21] "The WBCSD is a CEO-led, global association of some 200 companies dealing exclusively with business and sustainable development. Members are drawn from more than 35 countries and 20 major industrial sectors. The Council provides a platform for companies to explore sustainable development, share knowledge, experiences and best practices, and to advocate business positions on these issues in a variety of forums, working with governments, non-governmental and intergovernmental organizations." (WBCSD 2008:1).

jointly have annual earnings responsible for 40%[22] of Brazil's gross domestic product (GDP) (CEBDS 2008:1b). It is based on the general idea that sustainable development is the only option left to reconcile wealth production and society's welfare without undermining the continued existence of the planet.

The CEBDS is known as a potential voice of the corporate sector on the issues that concern business performance and its relationship with the government and society in Brazil. The interaction between corporations, government, and society results in a continued search for business performance that promotes economic, environmental, and socially sustainable practices to increase the competitiveness of companies worldwide. This index aims to provide appropriate conditions in the corporate and social environment to achieve a harmonic relationship in the three dimensions of sustainability, economic, environmental, and social. According to Cardoso (CEBDS 2008:1d) – sociologist and former President of Brazil – it is necessary to insert companies as a part of society, engaged in the solution of problems that affect all. The concern about sustainability must be directly connected to the economic activity of companies.

The CEBDS has been one of the most active partners of the WBCSD. It has been substantially involved in international forums, particularly in giving valuable contributions to the discussions about climate change (CEBDS 2008:16a). This index has consolidated its position as a revolutionary leader in the transformation of the traditional economic model into a new standard of sustainable business performance. Hence the

[22] In 2007 the Brazilian GDP was R$ 2.6 trillion or approximately 1.41 trillion USD (Rate 1.00USD – R$1.84) (Veja 2007:1, O Globo 2009).

CEBDS is a standard for companies interested in having sustainable performance and it is a synonym for credibility.

- *Need to launch the index:* The CEBDS was created to develop a Brazilian institution to be associated with the WBCSD. The goal of this index was to put together a new concept for economic activity in Brazil, by effectively helping companies to expand the sustainable development among their practices and their relationship with society.

- *Definition of sustainability*: The sustainability concept in this index is associated with the idea of sustainable development – a concept that aims to reconcile economic, environmental, and social necessities without undermining the future demands of any of these three dimensions (CEBDS 2008:1b). Sustainable development in this context serves to promote innovation, new technologies, and new markets for companies interested in taking a sustainable path to achieve global competitiveness. According to CEBDS (CEBDS 2008:1b), the adoption of sustainable development signifies vision in a long run and endurance of companies' businesses. The role played by this index is very crucial as companies start implementing sustainability in their businesses because the CEBDS guarantees the necessary political influence to help change the Brazilian corporate culture that the achievement of this concept entails. This index participates as an active member in the forums, events, and councils associated with several issues regarding the achievement of the sustainable development in Brazil. It also had a decisive participation in the approval of the ISE (CEBDS 2008:33a).

- *Foundation of the index:* Sustainable development is the core principle for

guaranteeing a high quality of life for future generations without weakening economic growth and access to natural resources. For the CEBDS, the environmental, economic, and social dimensions are interlaced and inseparable. In addition to sustainable economic performance, corporate sustainability from this index's perspective is also based on the concept of eco-efficiency[23] and corporate social responsibility. Additionally, this index believes that communication is a potential key to the implementation of sustainability. In this regard, the CEBDS serves as a space to promote companies' discussion of the complexity that the related sustainability-issues involve and to represent corporations in the dialogue about sustainable development with public institutions and society (Azevedo 2006:80).

- *Institutions responsible for managing the Index:* The CEBDS administrative board is composed of some of the associated companies (Table 5). Additionally, this index has six sponsors[24] including some of the associates and several partnerships[25]. These partnerships vary according to the events and activities. They help the index to publish articles, magazines, and guides that serve as tools to help companies apply sustainable practices.

The CEBDS has technical groups that together put into effect the discussions of the industry-specific issues. Each group is led by a representative of the associated companies (See Appendix 7 for information on each group). The representatives are

[23] Eco-efficiency reduces environmental impact while producing goods and services.
[24] The six Brazilian sponsors for this index are: ALCOA, Arcelor Brasil, Itau Bank, Souza Cruz, Holcim, and Petrobras.
[25] Some of the partners are: the Organização das Nações Unidas para a Educação, a Ciência e a Cultura (UNESCO), Instituto de Estudos Avançados da Universidade da ONU (ONU/IAS), Ministério do Meio Ambiente, Worldwide Fund for Nature (WWF), Programa das Nações Unidas para o Meio Ambiente (PNUMA), and The Nature Conservancy (TNC) (CEBDS 2008:39a).

responsible for scheduling a forum whose purpose is to discuss and implement actions to promote sustainable development. The groups are: Environmental Legislation, Energy and Climate Change, Biodiversity and Biotechnology, Sustainable Finance, Communication and Education, Water, Civil Construction, and Corporate Responsibility (See Figure 6 and Table 6).

Table 5.

The CEBDS Administrative Board

Administrative Board				
Name (Company)	Vasco Dias **(Shell do Brasil)**	Emílio Odebrecht **(Organizações Odebrecht)**	José Carlos Grubisich **(Braskem S.A.)**	Marcos Bicudo **(Amanco Brasil)**
Name (Company)	Antonio Ermírio de Moraes **(Grupo Votorantim)**	Carlos Alberto Vieira **(Aracruz Celulose)**	Victório Carlos de Marchi **(AmBev)**	Sérgio Gabrielli **(Petrobras)**
Name (Company)	Horstfried Lapplee **(Bayer)**	Alfredo Lisboa Ribeiro Tellechea **(Copesul)**	Jorge Gerdau Johannpeter Grupo Gerdau Açominas	Rinaldo Campos Soares **(Usiminas)**
Name (Company)	Jônice Tristão **(Grupo Tristão)**	Roger Agnelli **(Vale)**	José Armando de F. Campos **(ArcelorMittal Brasil)**	Franklin Feder **(Alcoa)**

Directorship		
Name (Company)	Walter Cover **(Vale)**	Wilson Santarosa **(Petrobras)**

Source: From CEBDS 2008:1e.

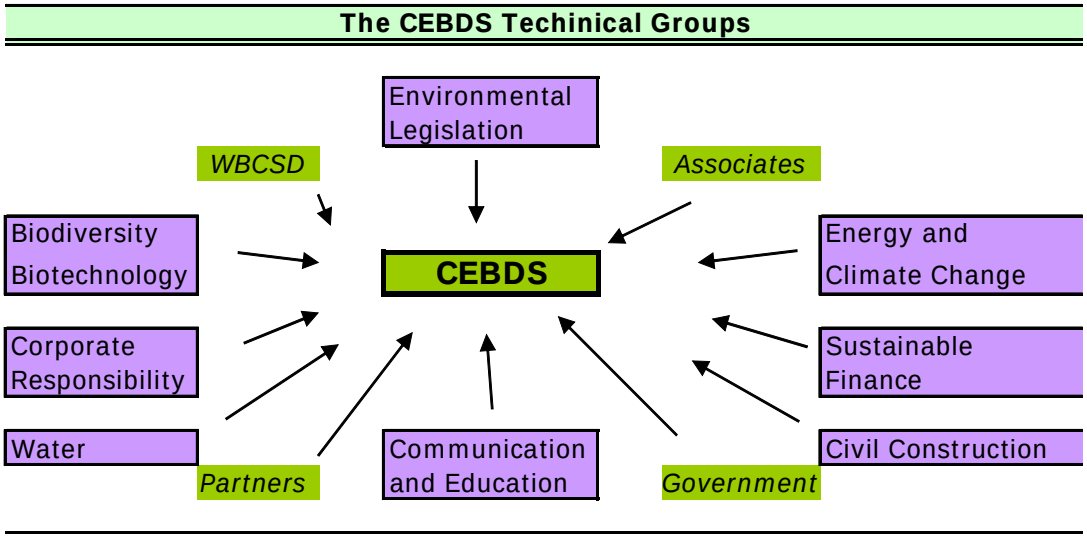


Figure 6. The CDBDS technical groups.

Source: From CEBDS 2008:1f.

Table 6.

Members Responsible for the Technical Groups

Technical Groups	***President***	***Vice-President***
Biodiversity & Biotechnology (Companies)	Joaquim Machado (Syngenta Seeds)	Maria Claudia Grillo (Petrobras)
Energy & Climate Change (Companies)	Luís César Stano (Petrobras)	David Canassa (Votorantim Participações)
Corporate Responsibility (Companies)	Ana Lucia Suzuki (Basf)	Luiz Fernando Nery (Petrobras)
Communication & Education (Companies)	Eraldo Carneiro (Petrobras)	Eckart Michael-Pohl (Bayer)
Environmental Legislation (Companies)	Erico Sommer (Gerdau)	xx
Sustainable Construction (Companies)	Carlos Eduardo G. de Almeida (Holcim)	Marcos Caielli (Banco Itaú)
Sustainable Finance (Companies)	Maria Luiza Pinto (Banco Real ABN AMRO REAL)	Sandra Boteguim (Banco Itaú)
Water (Companies)	Marcus Bicudo (Amanco)	José Mauro de Moraes (Coca-Cola)

Source: From CEBDS 2008:1e.

- Review: The CEBDS has a biannual report in which the associated companies display their sustainability activities related to eco-efficiency and social responsibility. The essence of this report is focused on the performance of the associated companies only. This report does not only serve as a great example to promote the sustainable course of member companies, but it is also crucial for increasing these companies' credibility and competitiveness. The participation of the associated companies on this report is optional.

- *Costs:* There is a monthly fee, which is the same for all the associates. However, the CEBDS does not report how much it is.

- *Maximum number of participants:* There is not a established maximum number of companies. Currently, 50 companies are listed in this index (Table 7). This is a very limited number given the size of the Brazilian economy. According to Azevedo (2006:80), for the CEBDS quality is more important than quantity. This index prefers to have members with strong performance in their sectors that can serve as potential examples to other companies.

- *Identification of companies:* There are two ways in which companies can be identified to be listed members on this index. The CEBDS can contact them – in this case, such companies are usually big and leading companies in their sectors and have been presenting some sustainable practices in the past years. Or companies can contact the CEBDS and ask to be a member. In both cases, the CEBDS board does a check up about the companies' background and accomplishments in terms of sustainability, performs research, and obtains evidence about companies' sustainability performances.

Table 7.

The Current 50 Member Companies Listed in the CEBDS

	Associated companies - CEBDS
1	3M do Brasil Ltda.
2	Abralatas - Associação brasileira de latas
3	AB Ltda.
4	Alcoa Alumínio S.A.
5	Amanco do Brasil S.A.
6	AmBev - Companhia Brasileira de Bebidas
7	Aracruz Celulose S.A.
8	Arcelor Brasil
9	Banco ABN AM RO Real
10	Banco do Brasil
11	Banco Itaú
12	Banco Bradesco S.A.
13	Basf
14	Bayer S.A.
15	Bolsa de Mercadorias & Futuros - BM & F
16	BP Brasil Ltda.
17	Brasken S.A.
18	Caixa Econômica Federal
19	Cia. Energética de Minas Gerais - CEMI G
20	Cia. Brasileira de Petróleo Ipiranga
21	Cia. Siderúrgica Paulista - COSIPA
22	Companhia Vale do Rio Doce
23	Coca-Cola
24	Copesul - Companhia Petroquímica do Sul
25	Du Pont do Brasil S.A.
26	EcoSecurities Brasil Ltda.
27	Eletrobras Termonuclear S.A. - Eletronuclear
28	Energias do Brasil
29	Furnas - Centrais Elétricas S.A.
30	Gerdau Açominas S.A.
31	GDK S.A.
32	Holcim Brasil S.A.
33	Lorentzen Empreedimentos S.A.
34	Menezes, Lopes, Dessimoni e Abreu Advogados
35	Michelin
36	Natura Cosméticos
37	Nestlé Brasil Ltda.
38	Organizações Globo
39	Organização Odebrecht
40	Plantar S.A. - Planejamento, Técnica e Adm. de Reflorestamentos
41	Petróleo Brasileiro S.A. - Petrobras
42	Philips
43	Shell Brasil S.A.
44	Solvay do Brasil Ltda.
45	Souza Cruz S.A.
46	Syngenta Seeds Ltda.
47	Tristão Comercial e Participações S.A. (Grupo Tristão)
48	Usiminas - Usinas Siderúrgicas de MG S.A.
49	Varig S.A. (Viação Aérea Rio Grandense)
50	Votorantim Participações

Source: From CEBDS 2008:76g.

There is no restriction regarding the size of the companies but usually leading companies in their sectors are likely to be listed in the index.

- *Participation of companies*: To participate in this index, companies must fill out a registration form (See Appendix 3 Link 4). The CEBDS has 30 days to decide if a company is qualified or not for the index. The registration form asks for general information about the company and also solicits companies' contacts to be representatives in the technical groups.

- *Exclusion of companies*: Listed companies can be excluded if they do not pay their monthly fee, or if they behave contrarily to the CEBDS principles.

- *Components to evaluate the performance of listed companies:* The CEBDS does not make individual evaluation of their associates' performance. The only document that presents the performance of member companies is the biannual report, which is focused on promoting the good practices of these members. However, the participation in this report is not mandatory.

- *Advantages to companies listed on CEBDS:* Associated companies are likely to: (a) differentiate from their competitors, and also maintain a superior position as socially and environmentally responsible companies; (b) influence public policy issues related to sustainable development in both broader and industry-specific perspective; (c) benefit from the networks that this index provides, such as contacts with large corporations, different governmental institutions, non-governmental organizations, and academic institutions that, together are working in support of corporate sustainable development; (d) share best practices through an exchange of information with national and

international organizations; (e) have the latest information about corporate sustainable development trends, (f) access the top information related to corporate social responsibility, eco-efficiency, climate change, biodiversity, and biotechnology; (g) educate and enable executives to face the challenges imposed by sustainability; (h) give visibility to the innovative actions undertaken by the associated companies; (i) stimulate the constant improvement of the associated companies as they move toward a sustainable path; and (j) ensure the existence of the companies in a new worldwide economic standard (CEBDS 2008:1b).

3.4. International Organization for Standardization (ISO)[26] – ISO 14001: Environmental Management System (EMS)

"Thousands of organizations use it, environmentalists support it, and governments actively encourage its use."(Praxiom 2008:1)

- *What is ISO 14001?:* First published in 1996, the ISO 14001 is an international standard that addresses a set of requirements for implementing an Environmental Management System (EMS)[27]. The EMS applies to the environmental aspects identified by organizations that can be controlled and influenced by the norms of the ISO 14001(ISO 2008:1c). Since its creation, the ISO 14001 has rapidly become the most important environmental standard in the world. The EMS assists companies to (a)

[26] The International Organization for Standardization (ISO) is a non-governmental organization that links the public and private sectors with the intention to promote the international commerce. It was launched in 1947 as the largest developer and publisher of International Standards in the world. Technical committees are responsible for developing the ISO standards (ISO 2008:1a).

[27] EMS refers to the actions taken by companies to reduce harmful environmental impacts caused by their activities, and to achieve continuous improvement of their environmental performance (ISO 2008:1c).

meet the environmental legislation, (b) establish environmental objectives to all the relevant sectors of any organization, and (c) bring about new objectives after the previous ones had been reached. This index guarantees the periodic evaluation of the implemented EMS in a way that it can identify opportunities for improvements associated with environmental performance. However, it is relevant to mention that the norms of the ISO 14001 do not, by themselves, state specific levels of environmental performance criteria. If this was the case, then these norms would have to be specific to each business activity, which would require a specific EMS standard for each business (ISO 2008:1b). That is not the intention since it aims to apply to all types of businesses, not being restricted by the size or the type of industry.

- *Need to launch the ISO 14001:* The development of the ISO 14000 norms was inspired by the United Nations Conference in Stockholm[28] in 1972, in which the issues related to human environment were brought into light. Another event that influenced the creation of the ISO 14001 was the Brundtland Report in 1987. This report warned all countries of the necessity of sustainable development through economic development that could be sustained without exhausting natural resources and damaging the environment (AEP 2004:5a). Therefore, in the 1990s, the ISO recognized the necessity to normalize tools of environmental management (AEP 2004:1a). In this context, in 1993, the ISO launched the technical committee (TC 207) with the intention to define norms related to environmental issues, such as the ISO 14001.

- *Definition of sustainability:* The essence of the ISO 14001 does not directly

[28] The conference in Stockholm considered the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment (UNEP 2008:1).

approach the three dimensions of sustainability – economic, environmental, and social – as suggested by the triple bottom line. Although this index was based on the idea of sustainable development proposed by the Brundtland Report and on the human environment issues mentioned at the Conference in Stockholm, the ISO 14001 does not have any specific definition associated with sustainability or sustainable development. The ISO 14001 is focused on the environmental dimension for which it proposes a set of requirements to be implemented in the operational processes of companies to emphasize the potential benefits of improving their environmental performance. On the other hand, it also suggests that the implementation of an appropriate EMS in the long run is likely to bring economic and social benefits.

Additionally, Pombo and Magrini (2008:6) suggest that a new set of certificates that integrate distinct systems are likely to become part of companies' global management systems. This system would then integrate the environmental (ISO 14001), quality (ISO 9000[29] and OHSAS 18001[30]) and social (SA 8000[31]) management systems. Cicco (2000:1) found that the synergy generated by the integrated system will not only bring better levels of performance to companies and reduced global costs, but it will also bring together the three dimensions of sustainability. In this sense, it is essential that companies comprehend the importance of connecting the three sustainability dimensions, and not only focus on the environmental dimension. Companies will come across the reality that

[29] ISO 9000 is a family of standards for quality management systems. By using ISO 9000 companies are likely to identify, measure, control and enhance the various core business processes that will eventually direct to superior business performance (ISO 2008:1d).
[30] OHSAS 18000 is an international occupational health and safety management system specification (OHSAS 2007:1).
[31] The SA8000 Standard and verification system is a credible, comprehensive and efficient tool to protect the basic human rights of workers (SAINTL 2008:1).

linking the three sustainability dimensions is essential to increase companies' performance, credibility, competitiveness, and value creation in the long run.

- *Foundation of the index:* The ISO 14001 relies on the important role played by the EMS as a tool to monitor the environmental performance of companies from different industries. In order to meet the requirements of the ISO 14001, the whole company must be committed to change its processes and put efforts toward the implementation of an EMS (See Appendix 8 for more information on EMS). To put its objective into effect, the ISO 14001 uses the same approach used in the implementation of ISO 9000, called PDCA – Plan, Do, Check, and Act – based on the continuous improvement (Figure 7).

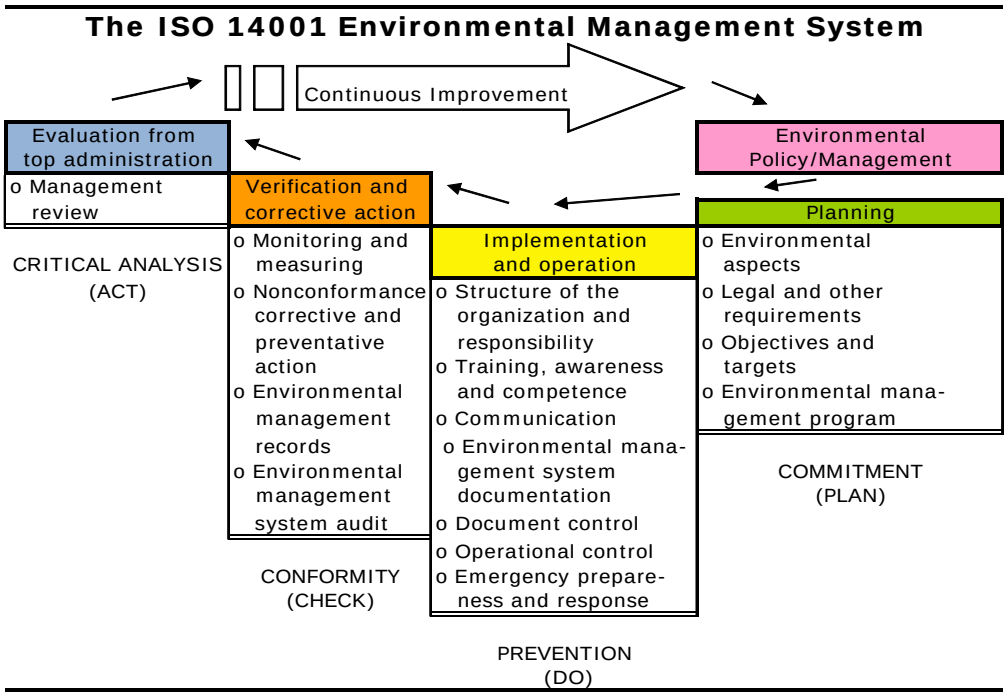


Figure 7. The ISO 14001 environmental management system.

Source: From AEP 2004:2a

- *Institutions responsible for managing the Index:* the Brazilian association Associação Brasileira de Normas Técnicas (ABNT), represents Brazilian interests in the international meetings focused on the development of the ISO norms and translates the ISO published norms (Pombo and Magrini 2008:5). Inmetro is the Brazilian accreditation organization in charge of providing credentials to bodies – 20 so far – operating assessment and certification in conformity with ISO 14001 standards in Brazil (See Appendix 9 for more information on these institutions).

- *Review*: The ISO 14001 was first published in 1996 (ISO 14001:1996) and reviewed on November 15, 2004. The current version is the ISO 14001:2004 (Praxiom 2008:1). The ISO 14001 certificate that qualified companies receive is good for 3 years. Between this period, periodic – semesterly or annually – audits by the bodies operating assessment and certification are required. After the expiration of the 3 years, a recertification is made – through the hired body, which can be the same or a new qualified one – and a new cycle of 3 years is started.

- *Costs:* The costs for the certification vary according to the dimension, complexity, and the type of system implemented by companies. Usually, the high costs for adopting the ISO 14001 norm are likely to become a barrier for smaller companies that cannot afford them. On the other hand, as stressed by Miles (cited in Pombo and Magrini 2008:3), the companies that cannot afford at once the high costs could start with a basic/general environmental system, which gradually will become more sophisticated. The real prices of assessing the EMS of companies are not publicly available. The time frame to obtain the certification varies from 6 to 24 months (AEP 2004:4a).

- *Maximum number of participants:* there is no limit on the number of companies that can have the ISO certificate across the world. Actually, a single company can have more than one ISO 14001 certificate, a multsite certificate[32].

- *Identification of companies:* Similarly to any of the management systems certificates (ISO 9000, OHSAS 18001, SA 8000), the ISO 14001 is voluntary and it can be applicable to any company from different industries that desires to establish, implement, maintain and improve an EMS (ISO 2008:1c). The size of a company and its level of representation in its correspondent sector are irrelevant in the assessment of its EMS and thus, do not limit any company to get the certification. Usually, the companies that look for this type of assessment are medium/large ones – due to the high costs involved – and are likely to be companies whose activities impact the environment directly. In Brazil, the industries that have the highest number of the ISO 14001 certifications are the automotive, petrochemical and chemical, and services industries (Pombo and Magrini 2008:2).

Additionally, as underscored by Gavronski et. al (cited in Pombo and Magrini 2008:3), companies are likely to have four motivations to implement an EMS in accordance with ISO 14001. They are: reactive motivations (reaction to an external motivation), internal motivation (influence of the internal variables), pro-active motivation (avoid problems with potential external stakeholders), and legal motivations (fulfill current/future environmental regulation) (See Appendix 10 for other motivations).

[32] This is the process of having several certificates among the divisions of a single company that can impact the environment. This is the case of Petrobras, a Brazilian company that alone has 41 certificates (Pombo and Magrini 2008:11).

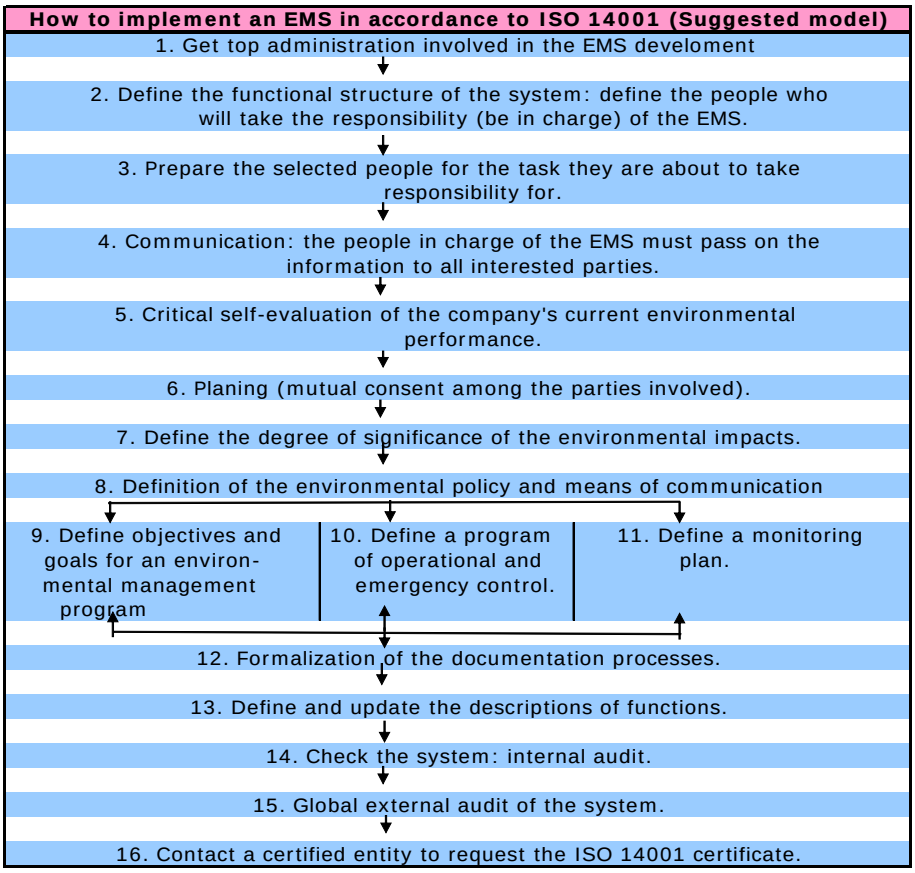
Gavronski et. al (cited in Pombo and Magrini 2008:3) also point out four dimensions of benefits that companies are interested in when they look for the implementation of an EMS in accordance with ISO 14001. They are: production benefits (efficiency in production), financial benefits (costs reduction due to the increase in process efficiency), benefits related to society (better relationships with external stakeholders such as government and society), and marketing benefits (better relationships and credibility with commercial stakeholders such as clients, competitors, suppliers, and distributors).

- *Participation of companies*: The participation of companies in getting the ISO 14001 certification depends on the EMS that companies develop. Table 8 outlines steps to help companies implement/improve their EMS (See Appendix 11 for suggestion to implement an EMS).

Once the EMS is created, then companies have the opportunity to contact/hire one of the bodies doing assessment and certification for ISO 14001. The entity performs the assessment and evaluates whether or not the EMS of a particular company is in conformity with the ISO 14001 requirements. If so, then the company will get the ISO 14001 certificate, otherwise necessary adjustments should be done. The implementation of an EMS can be extended to the whole company or only to one of its specific operations. The point is to cover with an appropriate EMS all the activities of a company that are likely to harm the environment.

Table 8.

Outline: Example of an EMS Implementation



Source: From AEP 2004:1b.

- *Exclusion of companies:* The certificates can be suspended or cancelled if:

(a) companies do not execute the periodical audits; (b) do not pay the entity that assessed their EMS, (c) the results of the periodical audits do not satisfy the requirements addressed in the ISO 14001; and (d) companies do not implement the necessary corrective actions.

- *Component to evaluate the performance of listed companies:* The companies' EMS is the evaluative component. This index does not lay down levels of environmental performance. Its intention is to provide a strategic approach to the companies' environmental policy, plans and actions.

- *Outcomes of ISO 14001 in Brazil:* Table 9 shows the number of ISO 14001 certificates issued in the world in 2005. Currently, more than 2300 Brazilian companies have the ISO 14001 certification (Pombo and Magrini 2008:7). Among the Brazilian companies, Petrobras stands out with the largest number of certificates (Table 10). This company alone has 41 certificates in accordance with ISO 14001 (Pombo and Magrini 2008:11). It is pertinent to mention that companies that already have the ISO 14001 certificate, such as Petrobras, are suggesting to their suppliers that they also put time and effort toward implementing an EMS in accordance with the ISO 14001 norms. Therefore, this can be a good way to increase the number of companies with the ISO certification, and consequently collaborate to increase environmental quality. Table 11 shows the predominant sectors in Brazil that are likely to get the ISO 14001 certificate.

Table 9.

Number of Certificates Issued in the World (2005)

Number of certificates (ISO 14001) issued in the world - April 2005		
1	Japan	17882
2	China	9230
3	Spain	6523
4	United Kingdom	6223
5	Italy	5304
6	United States	4671
7	Germany	4400
8	Sweden	3716
9	Korea	2610
10	France	2607
11	**Brazil**	**1800**
12	Canada	1706
13	India	1500
14	Taiwan	1463
15	Australia	1406
16	Switzerland	1348
17	Czech Republic	1332
18	Netherlands	1134

Source: ABNT (2005) - Only countries with more than 1000 issued certificates were considered

Source: From Pombo and Magrini 2008:9.

Table 10.

ISO 14001 Certificates among Brazilian Companies (2005)

Brazilian companies with ISO 14001 certificate	
Petrobras	41
Ouro verde Transporte e Locação	32
Siemens	30
Eucatex	30
Light	23
Rhodia	23
Rodo Mar Veículos e Máquinas	18
Companhia Vale do Rio Doce	13
Dana Industrial Ltda	12

Source: Revista Meio Ambiente (May/June 2005)
Only companies with more than 10 certificates were considered

Source: From Pombo and Magrini 2008:11.

Table 11.

Percentage per Sector of the Certificates Issued in Brazil (2006)

Percentage per sector of the certificates issued in Brazil	(%)
Automotive	14
Petrochemical	9
Chemical	8
Services	8
Metallurgy	6
Paper pulp/ wood/ agriculture	5
Transport/ Hotel/ Tourism/ Logistics	5
Utilities	5
Plastic/rubber	4
Technology/ telecommunication /computers	3
Food/Beverage	3
Pharmaceutical/Hospital	3
Steel engraving	3
Construction	2
Mining	2
Textile/Footwear	2
Cosmetics/ Hygiene	1
Glass industry	1
Others	14

Source: Revista Meio Ambiente (June 2006)

Source: From Pombo and Magrini 2008:12.

- *Advantages to companies certified according to the ISO 14001 norms:*

According to the ISO 14001 (AEP 2004:3a), the companies that get its certification are likely to have the following advantages: (a) fortifing company's image and the participation in the market; (b) preserving natural resources and energy; (c) developing a well-structured production process capable of improving production efficiency and environmental performance; (d) maximizing results of production; (e) decreasing costs by promoting efficiency in energy and water consumption, discard of waste, recycling paper and energy, and insurance costs reduction; (f) developing products and technologies that

are more environmentally friendly; (g) promoting better management of resources and dangerous substances; (h) having better control of the environmental risks and reduction of associated costs through the monitoring that guarantees risk prevention and/or minimization; (i) providing better communication with employers, stakeholders, distributors, suppliers, government, and society; (j) improving work conditions; (k) adding value in the relationship with internal and external interest parties, including employees, shareholders, customers, suppliers, organizations of environmental control and community; (l) meeting the certification criteria of company's clients; and (m) improving companies' and society's awareness about the importance of environmental friendly behavior. These advantages make the costs of time and money of implementing the EMS worthwhile in the long run.

The next chapter will develop charts of comparisons among the four sustainability indices presented in this chapter.

CHAPTER 4: ANALITIC COMPARISON OF THE SUSTAINABILITY INDICES

> *"Moving forward, we expect the demand for sustainability indexing to continue with accelerating speed." (Presbo cited in DJSI 2008:3c)*
>
> *"As more and more markets participants turn towards sustainability-driven portfolios, demand for solid and objective benchmarks in this segment is on the rise." (Bürki cited in DJSI 2008:3c)*

Based on the individual descriptions of each sustainability index given above, in this chapter I will address their similarities and differences on charts of comparison. Through the analyses in this chapter I will answer two out of the three research questions. They are: How have the four sustainability indices been motivating Brazilian companies to achieve a sustainable path? Do sustainable practices contribute to the competitive advantage of these companies?

The charts of comparisons were divided into five dimensions: why, value created, what, who, and how (See Appendix 12). This division is intended to separate the information into meaningful segments to facilitate the analyses. In this case, the "why" chart entails the information related to the need to launch each index, its purpose, objective, mission and foundation. The "value created" chart refers to the concept of sustainability used by each index, along with the advantages that each one believes it brings to the companies qualified to be listed on it. The "what" chart describes the review process and the identification of company criteria for each index, along with the current number of companies listed and the costs involved. The "who" chart shows the practical issues related to each index. It includes the institutions involved in its creation, its

market/sector eligible universe, and the participation of the companies in the sustainability assessment approach used by each index. The last chart, the "how," describes the specifics of the sustainability criteria used in each index. It details the instrument – and its description – for the evaluation of companies' performance and the classification approach used by each index. After developing and analyzing the charts in Appendix 12, I was able to answer the research questions.

1) *How have the four sustainability indices been motivating Brazilian companies to achieve a sustainable path?*

Although the sustainability approach of the indices differed from each other, the four sustainability indices were created with the purpose of promoting sustainability among businesses. Each, in its own way, has encouraged companies to put their efforts toward a more sustainable path through the requirements that each has to get companies listed. Listed companies are the ones that do the following:

- Make sustainability reports;
- Maximize profits and production processes;
- Reduce pollution and greenhouse gas emissions;
- Develop social projects;
- Create a more harmonious work environment;
- Have an efficient access/distribution to relevant information;
- Have sustainability vision; and corporate governance, among others.

Companies want to be listed in indices like these four. By going through the process of getting listed, companies start to truly comprehend the idea behind really being a sustainable company. They begin to understand the changes that they need to make in their relationships with stakeholders, employees, and consumers; production processes; and social projects, among others. They not only start to realize the reason why green companies are a hot topic today, but they go beyond the marketing purposes to actually put into effect real changes toward sustainability. These four indices show that it is not easy to be a sustainable company, nor it is impossible. But, a set of requirements must be met for companies to be considered great examples of sustainable companies. Below is a comparison of the indices that will aid understanding of their important roles in the process of approaching sustainability in business.

The Dow Jones Sustainability Index World (DJSI World) versus the Corporate Sustainability Index (ISE)

The DJSI World and the ISE are very similar, mainly because the ISE was inspired by the DJSI World. Both are limited to the companies listed in their stock exchanges, DJGWI and BOVESPA. While the DJSI World has eligible companies from all over the world, the ISE is limited to the Brazilian market. Usually, only the largest companies with the best performance in their sectors are the ones to be listed in these indices. Since these indices are related to stock markets, the shares of the companies are very relevant in the identification process. In this context, the shares must have liquidity and must result in a market capitalization high enough to meet the inclusion criteria. For

this reason, it is not easy for companies to be listed on these two indices; in fact, for medium and small companies it is basically impossible.

It is also relevant to mention that the primary purpose of these indices is not to raise the value of shares of the listed companies in an extraordinary way. However, more investors will be more interested in investing in companies with this profile because these companies are likely to create long-term value for shareholders. Consequently, companies will have more resources to put into their projects; they will grow and increase their profits, which would be divided among the investors and call the attention of more investors to invest in these companies. Besides the functioning of stock markets, the main focus of these two indices is, actually, to reward those companies that have been notable for their outstanding sustainability practices. This is, in fact, the essence of choosing these two indices. Currently, many Brazilian companies cannot be eligible for these indices; either because they are not listed in the stock markets, or because they are not big enough. However, said companies should use the examples of good practices of listed companies to immerse in their own sustainable path.

The concept of sustainability in both indices is related to creating a long-term commitment by the companies to sustainability and creating a long-term value for shareholders. Although the identification processes differ from each other, companies are required to meet a set of requirements in both indices to be eligible. Also, there is a limit on the number of companies that can be listed. In the assessment of companies, these two indices use a specific questionnaire – along with a company's relevant documents – which covers the triple bottom line principle and corporate governance. The difference

between the assessments of these two indices is that in the DJSI World, besides the questionnaire and relevant documents, there is an external report from an external auditor – Deloitte & Touche LLP (DJSI 2008:4b).

In the DJSI World, companies are analyzed by the Best-in-class approach, while in the ISE companies pass through a cluster analysis. It is interesting that while listed in the index and during the annual review – and in the quarterly review and monitoring process (DJSI World) – companies can actually be excluded if they no longer satisfy the indices' requirements. This means that listed companies have to keep up with their sustainable practices because they can be listed in the indices one year and excluded in the next, or they can be dropped mid-year. In both indices, companies are invited to take part in their assessments. However, in the DJSI World, eligible companies do not have to pay to be listed, whereas in the ISE eligible companies do pay. According to the ISE committee, the two fees that companies pay to be listed in the index work as financial resources to help in the viability and accuracy of the activities needed in the annual review of the ISE.

In the DJSI World index, SAM is responsible for the whole review and monitoring process. In the ISE, the CES/FGV is responsible for developing the questionnaire. However, it is interesting to point out that during the review process the ISE Board and the CES/FGV promote meetings, workshops, and public audiences in which companies, specialists and the public can actually be part of the questionnaire designing. The participation of interested parties in the development of the ISE

questionnaire is crucial to increase awareness about the importance of taking Brazilian companies into a sustainable path.

Clearly, the DJSI World includes more number of listed companies than the ISE. The DJSI World has a total of 320 listed companies. Among them, only eight are Brazilian companies. Whereas the ISE has a total of 30 companies, all being Brazilian companies. Even though the number of companies listed between these two indices is not the same, it is interesting to point out the fact that the financial sector is the first most highly represented in both – 22% in the DJSI World and 54% in the ISE. Among the differences and similarities of these two indices, it can be understood that the first sustainability index in the world (DJSI World) and the first in Latin America (ISE) have been setting a new standard for companies' behavior and strategies to the current and future sets.

The Brazilian Enterprise Advice for Sustainable Development (CEBDS)

CEBDS has a very different approach to sustainability than the other indices. It represents the Brazilian interests in the World Business Council for Sustainable Development. The CEBDS has a more communicative role than evaluative (individual company's analysis), which is the case of the DJSI World and the ISE. The CEBDS aims to offer a trustworthy platform for companies to exchange information, experiences, and knowledge about sustainable practices in Brazil. It serves as the voice of member companies on issues related to business sustainability performance. The CEBDS also plays an important role on its members' relationship with the government and society. It

also facilitates the development of partnerships and projects to stimulate the implementation of sustainability among its members. In addition, this index provides information, directions, and tools to assist Brazilian companies in implementing, measuring, and communicating their efforts to sustainable practices. However, it is relevant to mention that the CEBDS does not make individual evaluations of its associates' performance.

The concept of sustainability in this index combines the triple bottom line notion, as in the DJSI World and the ISE, and the sustainable development principle proposed in the Brudtland report. In this sense, the CEBDS reconciles the three dimensions of sustainability and integrates sustainable development, which signifies a vision of the long run endurance of the companies' business without reducing the quality of life of future generations.

Participation in the CEBDS is voluntary and there are no limits on the number of companies that can be members. Currently, this index has 50 Brazilian companies members listed. Not much information is available about the identification process of eligible companies. However, as in the DJSI World and the ISE, the companies listed in the CEBDS are likely to be big and leaders in their sectors, which makes it difficult for medium, and especially small, companies to be eligible.

The many institutions/partnerships involved in the organization of the index and the technical groups are most important particularities of this index. The partnerships promote events that encourage many interested parties to take a more sustainable path. The technical groups are interesting in the sense that they provide a platform discussion

for industry specific issues. Therefore, by learning and discussing potential solutions in the industry-specific setting, companies are more likely to put into effect real sustainable changes in their production processes and in their relationships with government and society.

The identification process of companies is a little different from the DJSI World and the ISE. In the CEBDS, companies can directly contact the CEBDS and submit the registration form (See Appendix 3 Link 4) to it; or the CEBDS itself can invite companies to participate in the index. In the last situation, companies are usually leaders in their sectors and stand out for their sustainability approach. In both situations, this index does a background check before accepting the eligible company as a member. It is also important to mention that all listed companies have to pay a monthly fee. However, the value is not divulged. Similar to the DJSI World and the ISE, companies can be excluded if they behave contrary to the CEBDS' principles or if they do not pay their monthly fees.

Differently from the DJSI World and the ISE, the CEBDS does not have an annual review. In fact, the index only has a biannual report in which the listed companies promote their own sustainable practices and sustainable strategies. Yet, the participation in this annual review is not mandatory; thus, not all listed companies actually take part on it. This biannual report can also be used as a great tool by those companies that are looking for the development of sustainability strategies and projects. It is available on the Web site of this index. Through the examination of the CEBDS it can be understood that

this organization is the first enterprise to strongly encourage sustainability into the corporate perspective in Brazil.

International Organization for Standardization 14001 (ISO 14001)

The ISO 14001 has a very different approach to sustainability in comparison to the other three indices. The focus of this index is the operational system of companies, particularly in terms of their environmental performance. The purpose of the ISO 14001 is to provide a set of specific requirements to assist companies in the implementation of an environmental management system (EMS). Such a system is able to develop and implement companies' policies and objectives related to legal/other requirements and information about significant environmental issues caused by companies' activities. The ISO believes that as companies implement a proper EMS they are likely to protect the environment, prevent pollution and emission of greenhouse gases, and consequently improve their overall environmental performance.

The ISO 14001 does not approach the triple bottom line principle like the other three indices. Nevertheless, its principles are based on the idea of sustainable development from the Brundtland report, like the CEBDS. The ISO 14001 also centers its principles in the human environmental issues first proposed in the Stockholm conference in 1972 (UNEP 2008:1). Through the way the focus of this index functions, it is clear that the concept of sustainability in the ISO 14001 is more focused on the environmental dimension. However, this index understands that by improving operational processes and reducing environmental damage, companies are likely to consequently maximize their profits (economic dimension) and improve work conditions and quality of life in

surrounding communities (social dimension). Therefore, once companies are capable of properly maximizing their EMS in accordance with the ISO 14001 criteria, they would be likely to consequently meet the three dimensions of sustainability. There is also a potential trend in which a new set of certifications are likely to take part in companies' management systems to meet all dimensions of sustainability (Pombo and Magrini 2008:6). In this context, a company should have the EMS, proposed by the ISO 14001, and also other management systems that combine quality (ISO 9000 and OHSAS 18001) and social (SA 8000) performances. Once these tree systems within a company comes together, said company is likely to implement the three dimensions of sustainability in its processes, as opposed to be only limited to its EMS. It is interesting to mention that for those companies that already have the ISO 9000 certification; it should not be difficult to obtain the ISO 14001 certification. Although the focuses differ from each other, the implementation of the system is similar (Pombo and Magrini 2008:6).

Differently from the ISE and the CEBDS, which are only focused in the Brazilian market, the ISO 14001, like the DJSI World, includes companies from all over the world. A positive aspect about the ISO 14001 is related to the fact that the proposed EMS can be implemented in any company whatever their current level of environmental maturity or industry-specific sector. Therefore, the ISO 14001 requirements are suitable to any company that desires to establish, implement, maintain, or improve its EMS. Nonetheless, it is pertinent to point out that there are high costs involved in the implementation and evaluation of the EMS. The costs vary according to the dimension, complexity, and the type of system implemented by companies. For this reason, like in

the other three indices, bigger companies are likely to have the ISO 14001 certification, whereas in medium and small companies, the high costs can offset its applicability and accessibility. However, these companies should not feel discouraged. Instead, these companies should work on a simpler EMS, which will eventually maximize production process and profits. With time, these companies will be able to develop an EMS as more resources become available.

Different from the other indices, companies are not invited to take part in the ISO 14001 assessment. In fact, the ISO 14001 certification is voluntary. Therefore, to be eligible for the ISO 14001 certification, companies have to develop an EMS. Then, they have to hire (pay) a certified entity in their countries to assess their EMS. The prices for certification may vary among the certified entities; thus, it is companies' responsibility to search for better pricing. If the entity understands that the EMS analyzed is in conformity with the ISO 14001 standards, the company receives the ISO 14001 certification. If not, the entity will suggest proper adjustments, and make another assessment until the results meet the ISO 14001 requirements.

Similarly to the CEBDS, companies in this index are not ranked through scores or statistical analysis, like in the DJSI World and ISE. Also, the ISO 14001 does not lay down levels of environmental performance. This index only provides a strategic approach to companies' environmental policy, plans and actions. Another difference between this index and the other three is that the ISO 14001 does not have an annual review or a biannual report. Once the certification is awarded by the certified entity, it is valid for

three years. After that, a recertification is required with the same or with a different entity. Then, a new cycle of three years begins.

The ISO 14001 is the index with the greatest participation of Brazilian companies. Approximately, 2300 Brazilian companies have the ISO 14001 certification. Due to the functioning of this index, the participation of financial sector is not significant as in the DJSI World and the ISE. The most significant sector is the automotive industry, representing 14% of the certificates, followed by the petrochemical with 9%. Thus, companies whose activities directly impact the environment are the ones likely to have this certification. On the other hand, this should not discourage other sectors from getting the ISO 14001 certification. In fact, such sectors should be strongly encouraged to get the ISO 14001 certification in order to stand out from their competitors and increase their credibility with stakeholders.

Similar to the other three indices, companies can have their certificates cancelled, and therefore be excluded from the index, if they do not meet the requirements of the ISO 14001. Different from the DJSI World and the ISE, but like the CEBDS, the ISO 14001 does not set a limit in the number of companies that can have its certification. In fact, companies with more than one function that can harm the environment are likely to have as many certificates as there are functions. The goal is to get all the functions of companies that can affect the environment to have an appropriate EMS, and thus work against environmental damage.

As the first index to be launched, the ISO 14001 has its own way of approaching sustainability. The implementation of an EMS in the ISO 14001 standards is not very

simple. In fact, depending on the size of the company it can be slightly complex. However, implementing this EMS could be very useful to companies in the sense that it helps understanding the specifics of environmental impacts of companies' activities. Consequently, it becomes easier to find more environmentally friendly solutions against these impacts. Hence, the companies that still do not have the ISO 14001 certification should rethink the management of their processes, the flow of information within interested parties, and the improvements that can be done toward reducing environmental damage. By doing that, said companies are likely to be able to start shaping their own EMS. Succinctly, companies should take advantage of the information available to them through this index and start working on the implementation of simpler EMSs that can potentially be developed in the short-term future.

2) *Do sustainable practices contribute to the competitive advantage of these companies?*

In addition, when analyzing the four indices, each one stressed a set of competitive advantages, which they believed listed companies could potentially gain. Some of the competitive advantages are similar among the indices: reinforcement of a company's image (reputation and credibility gain) mentioned in all indices, superior positioning as socially and environmentally responsible companies (value creation) mentioned in all indices, and access to sustainability trends, mentioned in the DJSI World and the CEBDS. There are also many other competitive advantages specific to each index, as were addressed in the previous chapter. By investigating the role played by the

indices in putting sustainability in the business' mindset, and by examining the efforts of listed companies to meet the requirements of each index, it is reasonable that such hard work results in rewarding the companies that make sustainability in business possible. The positive aspect about obtaining competitive advantages through sustainable practices relates to the fact that such advantages are likely to motivate other companies and stakeholders to follow a sustainable path.

In the beginning of my research, I decided to address this second research question because I believed that the analyses of the four indices would confirm that listed companies could actually have more competitive advantages over the ones that are left out of the indices. As I examined each index, it was very clear that each claims to bring many competitive advantages. However, the indices themselves cannot prove that listed companies have their competitive advantage increased because of the advantages claimed by the indices. Although an increase in the competitive advantage of listed companies is expected as they develop sustainability practices to become eligible to be listed in the indices, my analysis of the indices did not find any conclusive data to prove the veracity of such statement. Therefore, it appears that the research undertaken here is unable to answer the second research question. Further research of the actual performance of listed companies is needed in order to have more conclusive data. Nevertheless, this is not the focus of my research. In fact, I believe that another study is necessary to answer this single question.

Conclusion

At the end of this chapter, it is important to recall and stress that the focus of this research is to analyze the four sustainability indices. Although not all Brazilian companies are eligible to be listed in these indices – because they are not big enough for example – they should not disregard the valuable information provided through these comparisons. The comparisons and the analysis of each index, help companies to choose the steps to be taken as they approach sustainability in their businesses – and also try to be listed, if they can be eligible.

Additionally, as I got deeply into the specifics of each index, I realized that the ISO 14001 and the CEBDS are not actually indices. They are certification driven assessments and membership-based activities, respectively. Even though, they have tools to evaluate listed companies – analysis of companies' EMSs and companies' background checks – these two indices do not rate listed companies like the DJSI World's and the ISE's assessments. Therefore, if companies want to be assessed (individual analysis) and rated according to their sustainability performance, I strongly recommend that said companies should put their efforts to qualify their performance according to the DJSI World's or ISE's criteria. If said company cannot be eligible to be listed in these two indices – because they are not listed in the stock market, or they are not big enough, or their shares are not high enough, or they do not have the required liquidity – I strongly recommend going over the questionnaires of these two indices, which are available in their Web sites. By knowing the aspects of the questionnaire through which listed companies are evaluated, other companies should be able to work on these aspects to

develop or enhance their sustainability approach, even if they cannot get listed by any of the indices.

If companies are interested in developing or improving their sustainable practices (not yet having their sustainability performance assessed or rated) I recommend contacting the CEBDS. This organization promotes many events to encourage the discussion of sustainability trends and concerns, and some of them are open to the public. Thus, other companies, besides members, can participate. If companies are interesting in exclusively improving their environmental performance, I strongly recommend them to contact the ISO 14001 certification entities in Brazil to perform an assessment of these companies' EMSs. If companies are still not qualified to get certification, these entities will indicate the aspects that must be improved to do so. Thus, the contact with these entities is very helpful in the context of enhancing companies' EMSs.

Tables 12, 13, 14, and 15 provide a quick overview of some of the many aspects on which the four indices were examined. When looking at these four tables, it becomes easier to get an overall idea about each index. It is also helpful to verify the similarities and differences among them. Table 12 shows the aspects that are similar in all four indices. There are five aspects and they are the following:

Table 12.

Aspects Shared by the Four Indices

Chart of Comparison - Sustainability Indices				
Topics/Indices	*DJSI World*	*ISE*	*CEBDS*	*ISO 14001*
Partnerships	X	X	X	X
Exclusion of Listed Companies	X	X	X	X
Large Companies/Leaders in Their Sectors	X	X	X	X
Presence of Brazilian Companies Listed	X	X	X	X
Increase Competitive Advantage	X	X	X	X

- *Partnerships*: The DJSI World has a partnership with the SAM group, who develops the questionnaire, assesses, and selects the companies to be listed in the index. Fundação Getulio Vargas (FGV) has a similar role in the ISE. But the ISE has also other partners who help the index stay accurate. The CEBDS has a lot of partnerships, due to its functioning. This index was created to develop a Brazilian institution to be associated with the World Business Council for Sustainable Development. It promotes forums and events whose purpose is to encourage a discussion of sustainability issues in the corporate setting. Thus, its partnerships may vary according to the events. The ISO 14001 in Brazil has two partners. The Associacão Brasileira de Normas Técnicas (ABNT) who represents Brazilian

interests in the international meetings focused on development of the ISO norms. It also translates the ISO published norms into Portuguese. Another partner is the IMETRO who is a Brazilian accreditation organization in charge of providing credentials to national entities. In Brazil, there are also 20 entities currently certified to issue the ISO 14001 certification. These entities are responsible for assessing companies' environmental management systems (EMS).

- *Exclusion of companies*: Listed companies can be excluded from all indices if they fail to meet the requirements set by each index. In this regard, it is important to mention that Petrobras and Aracruz, along with four other Brazilian companies, were not listed in the last review of the ISE. The last review took place on December 1st 2008 and it is valid until November 30th 2009. Petrobras was excluded because the company did not meet the required reduction of sulfur in the diesel to be commercialized in January 2009. Aracruz was excluded because its corporate governance was not satisfactory. With the exclusion of these companies, the total value of the ISE shares decreased from USD 504 billion to USD 202 billion, approximately[33] (Bovespa 2008:1a). The exclusion of Petrobras contributed mostly to this reduction since this company by itself has a lot of shares in BOVESPA's stock market. However, specialists believe that although Petrobras was excluded from the ISE, this will not have a significant impact on the value of its shares, because its shares have a lot of liquidity and its investors

[33] Estimated exchange rate: 1.00 USD = R$1.84 (O Globo 2009)

know the company well enough to understand that this is part of Petrobras business, and eventually this company will reduce the sulfur (Bovespa 2008:1a).

- *Large companies/ leaders in their sectors*: The companies listed in all indices are most likely to be large companies and leaders in their sectors.
- *Presence of Brazilian companies*: All indices have Brazilian companies among their listed companies. This is actually the reason for choosing these indices.
- *Increase of competitive advantage*: All indices claim to offer competitive advantages to listed companies.

There are also other aspects shared by three indices, which are illustrated in Table 13. There are six aspects and they are the following:

Table 13.

Aspects Shared by Three Indices

Chart of Comparison - Sustainability Indices				
Topics/Indices	*DJSI World*	*ISE*	*CEBDS*	*ISO 14001*
Review (Required)	X	X		X
Costs (Fees)		X	X	X
Companies are Invited to Take Part in the Index Assessment	X	X	X	
Company's Individual Assessment (Evaluative)	X	X		X*
Companies Get Listed According to Their Sustainability Performance	X	X	X	
The Triple Bottom Line Concept	X	X	X	

* The ISO 14001 does not lay down levels of environmental performance. It only analyzes - through certified entities - the EMS features developed by companies.

- *Review:* Both the DJSI World and the ISE require an annual review of listed companies. Every year a new process is started with a new questionnaire, a new set of invited companies, and a new set of answers. The final portfolio may (or may not) include some of the companies listed in the prior year. In the case of the ISO 14001, once companies are qualified to have the ISO 14001 certificate, said certificate is valid for 3 years. After that, listed companies are required to hire a certified entity to perform the assessment again. The CEBDS does not have any review.
- *Costs (fee):* The DJSI World is the only index that does not have any cost involved in its assessment. In the ISE, companies have to pay a registration fee (approximately USD 1,630) and an annual fee (approximately USD 5,435)[34]. In the CEBDS, there is a monthly fee but the value is not divulged. The ISO 14001 has costs related to the assessment of companies' EMSs. However, said costs vary according to the dimensions, complexity, and type of system developed by each company. In the case of ISO 14001, companies must hire certified entities, thus, the costs of each may vary. It is the companies' responsibility to find the best price offered among the 20 certified Brazilian entities.
- *Companies are invited to take part in the assessment:* This happens in all indices but the ISO 14001. It is important to emphasize that, in the case of the CEBDS, companies can also ask to be listed in the index. In both cases, the CEBDS board

[34] Estimated exchange rate: 1.00 USD = R$1.84 (O Globo 2009)

performs an examination of companies' background to ensure whether said companies are qualified for being listed in the index.

- *Company's individual assessment (Evaluative):* All indices but the CEBDS make an individual assessment of companies. The DJSI World and the ISE evaluate companies' sustainability performance, whereas the ISO 14001 evaluates companies' environmental performance. However, the ISO 14001, in particular, does not lay down levels of environmental performances. It only analyzes, through the certified entities, the characteristics of companies' EMSs. If this index was to develop levels of environmental performance, then the ISO 14001 would have to specify the levels of environmental performance specific for each industry, which is not the focus of this index.
- *Companies get listed according to their sustainability performance:* This is the case of the DJSI World, ISE, and the CEBDS in which companies are eligible to be listed according to their economic, environmental, and social performances.
- *The triple bottom line concept:* It is present in the DJSI World, the ISE and the CEBDS.

There are also some aspects shared by only two indices, which are illustrated in Table 14. There are ten similar aspects and they are the following:

Table 14.

Aspects Shared by Two Indices

Chart of Comparison - Sustainability Indices				
Topics/Indices	*DJSI World*	*ISE*	*CEBDS*	*ISO 14001*
Listed Companies are from the World	X			X
Listed Companies are only from Brazil		X	X	
Stock Market related	X	X		
External Audit (Required)	X			X
Participation of Companies and Public (Review Process or Forums for Sustainability Discussion issues)		X	X	
Companies Can Ask to Be Assessed			X	X
Limited Number of Companies Listed	X	X		
Companies Get Listed According to Their Stock Perfomance/ Liquidity/ Size of their Market Capitalization	X	X		
The Sustainable Development Idea			X	X
Corporate Governance Idea	X	X		

- *Listed companies are from the world:* This is the case of the DJSI World and the ISO 14001.
- *Listed companies are only from Brazil:* This is the case of the ISE and the CEBDS.
- *Stock market related:* This is the case of the DJSI World and the ISE. Thus, in these two indices companies need to have a total market capitalization and liquidity high enough to meet the inclusion criteria. Hence, larger companies are most likely to be eligible for these two indices.

- *External audit:* In the DJSI World, after the SAM assessment for each listed company, there is also an external audit made by an external entity in the annual review. In the last review, which took place on September 2008, Deloitte & Touche was responsible for the external audit (DJSI 2008:4b). In the case of the ISO 14001, the external audit is done by the certified entities when they analyze the EMS of companies.
- *Participation of public and companies:* When the FGV is developing the questionnaire for the next review of the ISE, it promotes workshops in which interested parties, listed companies, and other companies can participate and give their suggestions and opinions about the designing of the questionnaire. The CEBDS promotes forums and events to discuss sustainability issues. In some of them, only member companies can participate, but there are some events that are opened to other companies and interested parties. This index also has technical groups in which member companies are recommended to participate to discuss industry specific issues and issues related to corporate responsibility, biotechnology and biodiversity, climate change, sustainability finance, among others.
- *Companies can ask to be assessed:* This is the case of the CEBDS in which companies fill in the registration form. However, this does not mean that said companies will get listed. The CEBDS does a background check of each company that fills in the registration form to examine whether or not said company can be eligible. In the ISO 14001, companies have to ask to be assessed; otherwise, they

will not get the ISO 14001 certification. In the ISO 14001 the participation of companies is voluntary.

- *Limited number of companies listed:* The DJSI World and the ISE are the two indices that have target numbers regarding the maximum number of companies that can be listed. To be listed in the DJSI World, companies first must be listed on the NYSE. From this universe, SAM Group invites the 2,500 companies that are the largest ones, in terms of their market capitalization, to take part on its assessment. Among this new universe (2,500 companies), 10% (10% per sector and overall) of the companies that are leaders in sustainability performance are the ones that get listed in the index. The current portfolio, which was selected on September of 2008, has 320 companies from all over the world, and only eight are Brazilian. To be eligible for the ISE, companies must be listed in BOVESPA, which has a total of 394 companies currently listed. From this total, the eligible universe is narrowed down to the companies whose shares are among the 150 shares with the most liquidity in the year prior to the evaluation. Then, eligible companies must also have their shares traded in at least 50% in all trading sessions of the prior year. Thus, from the starting universe of 394 companies, only 120-130 companies are invited to take part in the ISE/FGV assessment. Subsequently, only a maximum number of 40 companies can be listed in this index. However, only 30 are listed in the current portfolio that was selected on December 1, 2008. The CEBDS does not set any limit on the total number of companies that can be listed in its portfolio. Nonetheless, only 50 Brazilian

companies are listed in the current portfolio, which represents a small number of companies considering the size of the Brazilian market. According to this index, quality is better than quantity, thus, this index prefers to have listed companies that can serve as examples to others; otherwise it would lose its credibility. In the ISO 14001, companies can, in fact, have more than one ISO 14001 certificate. The purpose of this index is to cover all the functions within a company that can harm the environment. Petrobras, for instance, has 41 ISO 14001 certificates (Pombo and Magrini 2008:11).

- *Companies get listed according to their stock performance/ liquidity / size of their market capitalization:* This is the case of the DJSI World and the ISE.
- *The sustainable development idea:* It is mentioned in the CEBDS and in the ISO 14001.
- *The idea of corporate governance:* It is mentioned in the DJSI World and in the ISE.

There are some aspects that are singular for a specific index. Table 15 shows the specifics of the CEBDS and the ISO 14001.

Table 15.

Aspects that Are Specific of One Index

Chart of Comparison - Sustainability Indices				
Topics/Indices	*DJSI World*	*ISE*	*CEBDS*	*ISO 14001*
Biannual Report - Marketing Purpose (Optional)			X	
Focus on Operational System (Environmental Systems Analysis)				X
Communicative Role rather than Evaluative			X	

- *Biannual report:* The CEBDS is the only index that does not have an annual review but it has a biannual report. In its biannual report, member companies can list their sustainable practices for marketing purposes. The participation in this biannual report is voluntary, thus not all member companies participate.
- *Focus only on operational systems:* The ISO 14001 is the only index that is just focused on the operational systems of companies. Hence, the ISO 14001 examines only the EMSs of companies.
- *Communicative role (rather than evaluative):* The CEBDS is the only index, among the four, that has a more communicative role than evaluative.

At this point it is relevant to stress that all the information and analysis provided in this research was based on the resources available from the indices. I did not assess any

of the companies individually. Although the idea of sustainability has been brought into the business setting over the past 20 years, a lot of changes are still taking place and much known and aware actions need to be improved. Hence, some of the companies currently listed in the indices may not be as sustainable as they appear. The evaluation of the indices did not involve an analysis of the documents/information provided by any individual company. For this reason, I do not have conclusive data to assert that listed companies are sustainable.

Currently, there is not a perfectly sustainable company or a perfect sustainability index. In fact, the concept of sustainability in business is still very new. Some actions have been taken, and the indices served to illustrate them. Nonetheless, such indices are not perfect, nor are the listed companies. Given my analysis of the indices, I can stress that a set of requirements must be met in order to consider a company sustainable today. In this context, the indices themselves serve as a measure to promote sustainability in business. Through the examples of listed companies it is clear that some steps toward a more sustainable path can be taken. For this reason, other companies should feel encouraged to follow a more sustainable path –taking into account their own reality and limitations. Thus, the journey toward becoming a sustainable company is still very uncertain and long, but not impossible.

Based on this research, in the next chapter, recommendations will be made to help Brazilian companies implement sustainability in their business.

CHAPTER 5: RECOMMENDATIONS FOR DEVELOPING SUSTAINABLE PRACTICES IN BRAZILIAN COMPANIES

In this chapter, I will answer the very last research question: How can companies in Brazil apply sustainable practices in their businesses? I will provide recommendations to help Brazilian companies implement/improve their sustainable practices. As the recommendations are given, I will also provide examples of sustainable strategies of some Brazilian companies that are listed in the indices to support the steps to be taken toward sustainability. It is crucial to mention that the recommendations will be made to assist any Brazilian company, and are not limited by its size, sector, or sustainability maturity.

It is important to clarify that the companies listed in the indices already have a certain (high) level of sustainability maturity. Because of that, listed companies stand out from other companies due to their leadership in sustainability practices. From my point of view, only in the case of the ISO 14001, is it possible for companies that do not have a very high level of sustainability maturity to be eligible to be listed because this index is concerned with the development of an EMS. Thus, in this particular index, companies can start with simpler EMSs until they are capable of improving them and reaching the ISO 14001 standards. In the other indices, companies must have an appropriate sustainability approach that meets the indices' requirements before having the opportunity to be eligible to be listed in these indices.

Because the level of maturity is very critical to the indices presented, I will cover the beginning stages that companies should embrace as they walk toward a more sustainable

path. Therefore, I will use some of the concepts and ideas presented in the earlier chapter about the concept of sustainability in business (See Chapter 2 subsections 2.2 and 2.3 page 28). I will answer this last research question in four steps:

1. Changes within a company
2. Company's processes and its relationship with stakeholders
3. Company's relationship with consumers/channel partners
4. Environmental and social strategies

3) How can companies in Brazil apply sustainable practices in their businesses?

5.1. Moving to Sustainability in Business: Changes within a Company

Before even thinking about reducing pollution, promoting social projects, or producing products that are more environmentally friendly, companies must put sustainability in the core of their strategies/businesses. Figure 8 illustrates the general steps toward sustainability.

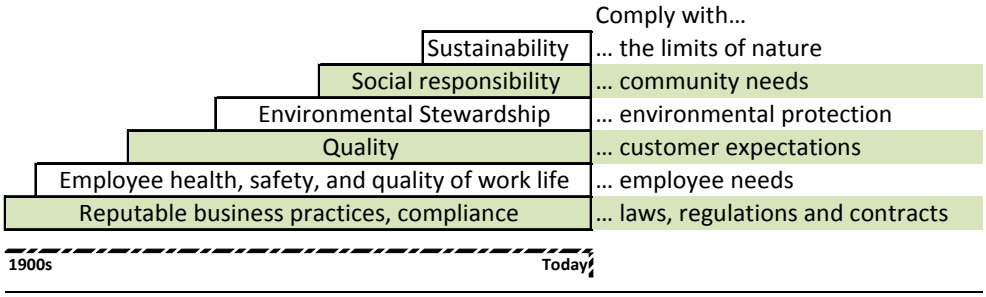


Figure 8. General steps to sustainability.

Source: From Hitchcock and Willard 2007:12

Along with the basic steps shown in Table 8, companies should also take into account the concepts suggested below in their beginning process of implementing sustainability in business.

Corporate responsibility: A company must take responsibility for each choice that is made that affects the environment and society (including stakeholders, employees, and surrounding communities). Consider a hypothetical company in the following situation. If a company cuts down trees to produce fuel, or other products, it is its responsibility to ensure that the local community will not be worse off and the environment will be replenished. If it uses a lot of paper that becomes waste, this company must make sure that the paper is recycled. It can for example, create a recycling program for the local community in which the company provides the resources (used paper), and training/equipment to local people to be able to recycle and sell the recycled paper back to the company. The company can even create a teaching type of program in which local community members can learn how to make things using recycled paper, such as notebooks, paper, picture frames, among other items. A company should also create environmental projects, such as reforesting and reducing emissions. The point here is to understand that companies must “repay” society and the environment for all the damage that they do to maintain their business.

Corporate governance: This entails a change in the culture of the organization. It is important to make sure that the whole company understands what sustainability in business means and why it is important to the company to consider it as the core of its business. By investing in corporate governance, the top administration must shape the

information that is passed on to all employees in a way that all of them understand their roles in putting sustainability into effect inside the company. Employees and stakeholders should become involved and take part in the decision making and changes that are required by the concept of sustainability. Once all of them feel part of a bigger purpose, they are likely to accept and contribute to this change. A hypothetical company could, for example, train its employees to resolve/manage potential changes in the function for which these employees are responsible. A company could train its employees to change a specific process to fit in the sustainability principle, or it could even listen to or accept employees' opinions about this specific change. Employees can be a potential actor of changing if they feel important to the company. However, to make this possible, a company must have very effective internal communication, specific targets, and an attainable vision of sustainability.

Leadership: Organizations must have good leaders that will create the vision and the dialogue that is necessary to spread sustainability throughout the whole company. Leaders should be able to bring people together (encourage relationships) to achieve a great purpose, which in this case is sustainability in a company's business. Powerful leaders are critical to implementation. Through them, companies are likely to understand their corporate responsibility and corporate governance. (Recall discussion from chapter 2 subsection 2.2 on page 28)

Seven sustainability blunders and solutions: Despite these three concepts presented above, I also strongly encourage companies to review the seven sustainability blunders and solutions proposed by Dopplet. They were illustrated in Table 1 and explained in

Appendix 1. The ideas presented by Doppelt are relevant in the beginning stage of incorporating sustainability in a company's business. His ideas show the importance of corporate governance while implementing sustainable practices. Doppelt also emphasizes the importance of the following:

1. A clear vision of sustainability,
2. The creation of teams (in the sense of getting people involved in the process changing of sustainability within the corporation),
3. The significance of institutionalizing the sustainability principle.

All these three ideas are incorporated in the role played by leaders. After going over Doppelt's blunders and solutions, companies should also build their own wheels of change toward sustainability, as illustrated on Figure 2. It is relevant to mention that companies should use the ideas suggested by Doppelt, but such ideas should no longer be considered as steps that must be followed at any cost. On the contrary, companies must adjust his ideas to their own reality. They can, for example, include in their own wheel of change other relevant issues such as corporate responsibility, which is not directly mentioned in Doppelts' approach to sustainability. Or companies can even disregard some of the Doppelts' suggestions if it is necessary to fit in their reality. However, I strongly encourage companies to go over all his suggestions for better sustainability results.

Table 1.

Doppelt's Seven Sustainability Blunders and Solutions

Blunder	Solution
Patriarchal thinking that leads to a false sense of security	Change the dominant mind-set that created the system through the imperative of achieving sustainability
Siloed' approach to environmental and socialeconomic issues	Rearrange the parts of the system by organising deep, wide and powerful transition teams
No clear vision of sustainability	Alter the goals of the system by crafting an ideal vision and guiding principles of sustainability
Confusion over cause and effect	Restructure the rules of engagement of the system by adopting source-based operational and governance-change strategies
Lack of information	Shift the information flows of the system by tirelessly communicating the need, vision and strategies for achieving sustainability
Insufficient mechanisms for learning	Correct the feedback loops of the system by encouraging and rewarding learning and innovation
Failure to institutionalise sustainability	Adjust the parameters of the system by aligning systems, structures, policies and procedures with sustainability

Source: From Doppelt 2003:88.

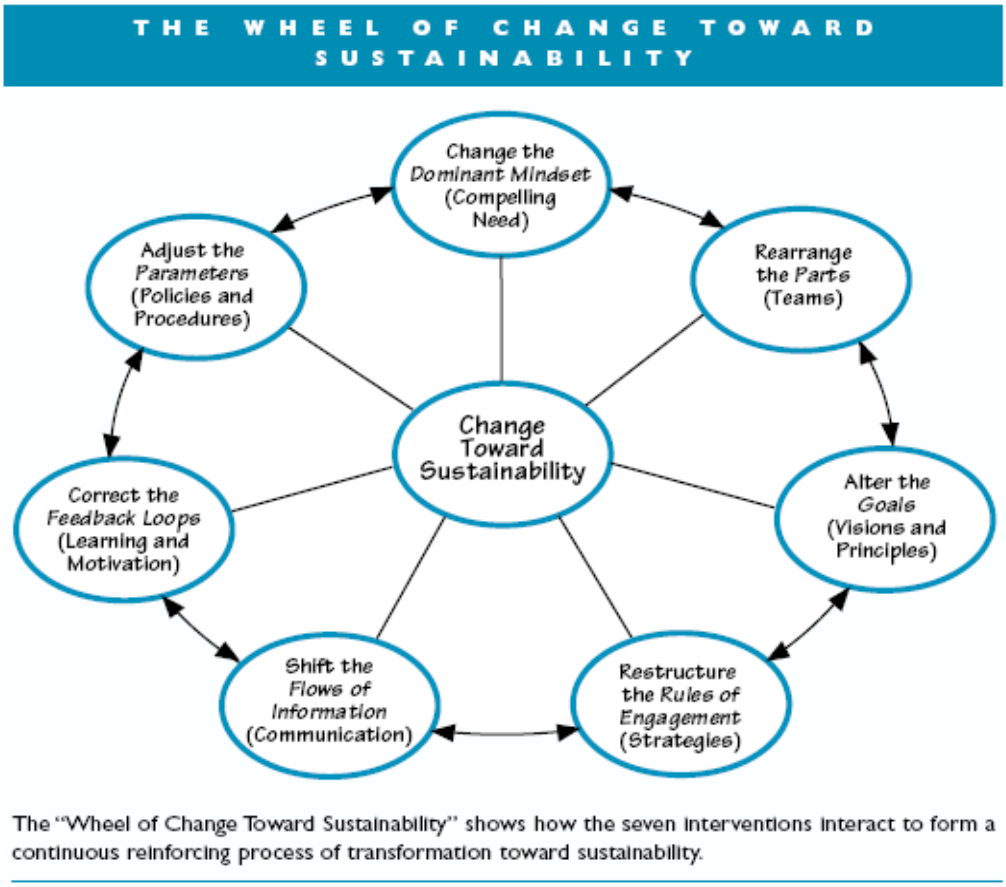


Figure 2. The wheel of change toward sustainability.

Source: From Doppelt 2003:89.

5.2. Moving to Sustainability in Business: Company's Processes and Its Relationship with Stakeholders

Once the ideas above are implemented within a company, the next step toward sustainability is to integrate a company's approach to sustainability in its processes and in its relationships with stakeholders. In this case, both the company's processes and its stakeholders should be engaged in helping the company achieve sustainability in the way

it performs its business. In this context, the value chain presented on Figure 3 serves to illustrate the means of this interaction.

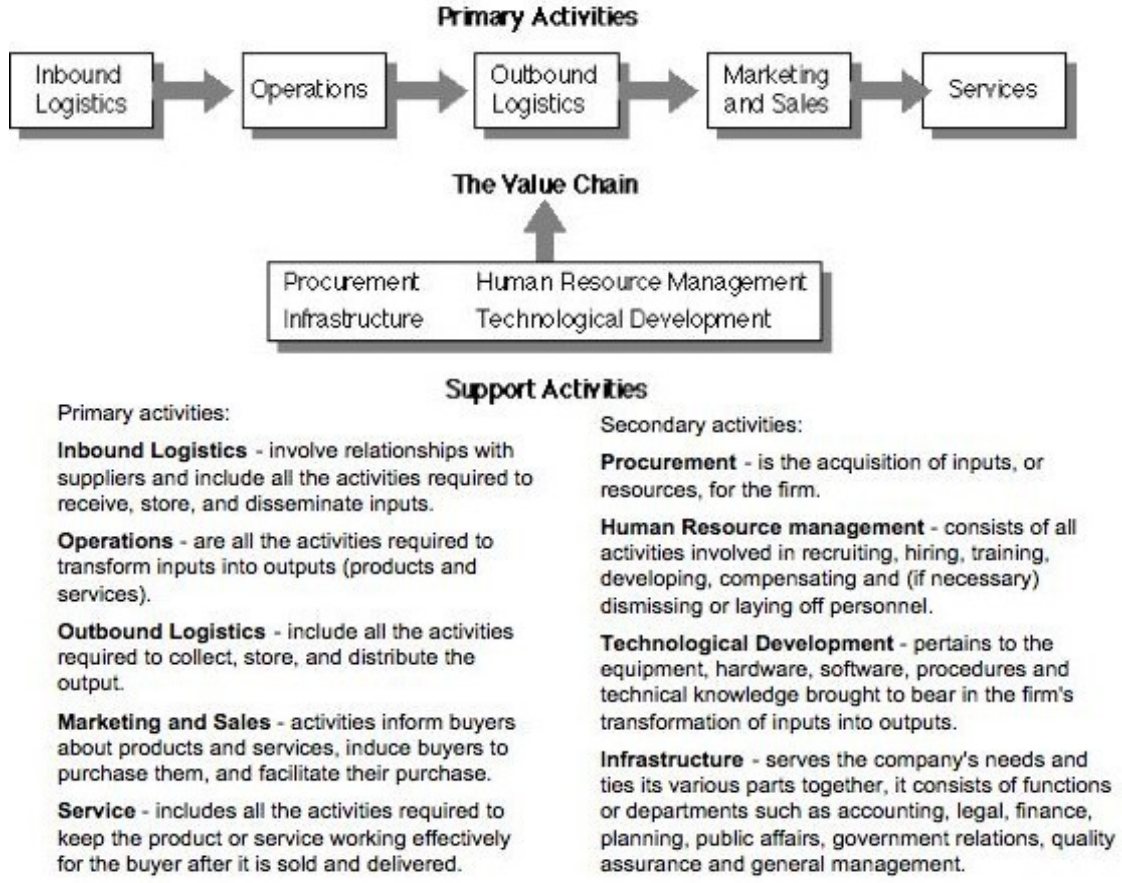


Figure 3. The value chain model.

Source: From Porter found in IFM.

The value chain: The presented value chain stresses the importance of having all company functions at the same level of satisfaction and efficiency and, for the purpose of

this research, they must also be at the same stage of maturity regarding sustainability. Once a company's functions are all coordinated in the same approach to sustainability in its business, then sustainability becomes a degree of difference that adds value to this company. Consequently, as a company does business, the principle of sustainability is passed on to this company's stakeholders, such as suppliers, distributors, and clients. Thus, these stakeholders will be likely to use this same principle – sustainability – to keep doing business with this company. As a result, they will start to understand that incorporating sustainability in their strategies is good for their businesses – add value; improve competitive advantage; and get better reputation and credibility; among others.

In addition to the value chain model, Hitchcock and Willard (2007:18) suggest that companies should use the 'bubble diagram' (Figure 9) to develop a clear vision of company functions/processes/activities that are susceptible to becoming more sustainable.

To better understand the functionality of this diagram, a company has to: (a) list its primary processes inside the process box; (b) list its most prominent examples such as the form of energy and most used materials purchased in each circle; (c) list the sustainable approach in the same said circle; and (d) list ideas for projects to reduce its major social-environmental impacts outside the circles (Hitchcock and Willard 2007:18).

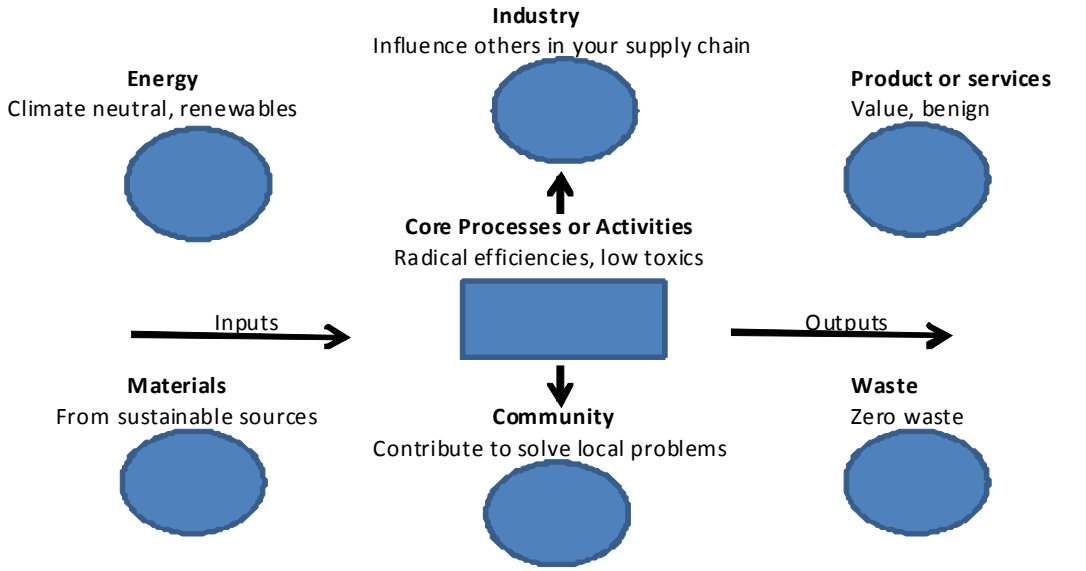


Figure 9. Moving toward sustainability: The bubble diagram.

Source: From Hitchcock and Willard 2007:19.

To clarify the use of this diagram, I will provide an example from the perspective of a paper and pulp producer.

- (a) Primary process: Production of paper and pulp.
- (b) Energy (current): Petroleum and coal are the main materials used to generate energy.
- (c) Energy (sustainable approach): Having all energy consumption (transportation, heat, electricity, among others) coming from renewable sources.
- (d) Ideas for projects: Use agriculture waste and/or sugar cane as a source of energy production.

5.3. Moving to sustainability in business: Company's relationship with consumers/channel partners

In the past 20 years, the wave of green practices has increased considerably, and one way of measuring it is through the influence of consumers' choices in the market place and the expansion of "green" marketing. As stressed in Chapter 2 Subsection 2.2. (vi), consumers' choices matter. Companies should be concerned about developing solid relationships with their consumers. To make this possible, a hypothetical company could take into consideration the following suggestions:

1. A company should be very transparent about its activities, mainly those activities that cause environmental and social damage.
2. It should use simpler language when promoting its sustainable strategies and practices to its consumers – this facilitates their understanding of the company's sustainability approach.

Moreover, to promote its sustainable practices, a company should take advantage of the fact that Brazilians are usually very attached to the advertisements in television, magazines, and newspapers. Thus, a company should invest in advertising its sustainable practices through these media. Some companies are adding carbon emissions to the labels of their products. In Brazil, Natura, a cosmetic company, announced that it would start to label carbon emissions on its products. At this moment, the products from this company have information about certification of origin and percentage of recycled material. These types of green arguments attached to products are likely to attract consumers. However, a company must be very careful in its strategies.

Counting the carbon emissions of products is still a very new approach to a company's sustainability strategy. Therefore, a company must understand that the time and resources spent on this strategy may not give the expected outcome. I believe it is important to stress that because in Brazil, for example, the level of education is still unequal. Thus, when approaching a strategy, such as the level of carbon emission in a specific product, the target consumer should be capable of understanding its meaning. Otherwise this strategy will not make any difference. The bottom line here is: A company has to know its consumers well in order to take the correct sustainability approach, promote behavior change (encourage sustainable practices among its consumers), and develop a solid relationship with them.

Moreover, a company should get consumers involved in the development or improvement of its products to make them more environmentally friendly. For instance, a hypothetical company could create a space in its Web site in which consumers could give their opinion about the sustainability approach involved in a specific product. Consumers could suggest examples of more sustainable practices that involve the design, packaging, size, and information of said product. As consumers submit their suggestions, the hypothetical company could reward the consumers that provided the best suggestions. An example of rewarding could be giving a prize, such as a basket with the complete line of a company's products. The company should emphasize the sustainable practices involved in the production of this product by sending a catalog along with the basket. Nonetheless, a company should not be limited to the suggestions given above. As it starts down its

own sustainable path, a company should be able to develop other strategies to attract more consumers to its own products.

Similarly important, it is a solid relationship with companies' channel partners, as it was addressed in Chapter 2 Subsection 2.2. (vii). Companies should make sure that their channel partners, such as distributors and suppliers, are engaged in the same sustainability approach. Companies must comprehend that sustainability only within their activities is not enough. Companies need to understand that if their suppliers harm the environment, said suppliers should also take actions to improve environmental quality. For instance, a hypothetical company could make an agreement with its supplier in which a company would only buy its suppliers' wood if said wood has a certification. Nowadays, certifications are used to ensure that the trees that are cut are also properly replaced into the environment (reforestation).

The Forest Stewardship Council (FSC), for example, is an independent, non-governmental, not for profit organization launched to support the responsible management of the world's forests. Products with the FSC label are independently certified to guarantee clients that these products come from forests that are managed to meet social, economic, and ecological needs of present and future generations (See Appendix 3 Link 5 for more information on FSC). The Conselho Brasileiro de Manejo Forestal FSC Brasil is a Brazilian organization that represents the FSC in Brazil (See Appendix 3 Link 6). There is also the Brazilian Forest Certification Program – Programa Brasileiro de Certificacão Florestal (Ceflor). Similar to the FSC, Ceflor assesses the rational use of natural resources (See Appendix 3 Link 7). Hence, I strongly recommend

that companies, whose suppliers activities are related to cutting down trees, require a certification such as the one provided by FSC or Ceflor from their suppliers. Certifications give more credibility to company's sustainable practices. In this context, companies should examine their relationships with channel partners to ensure that these relationships are environmentally and socially friendly.

5.4. Moving to Sustainability in Business: Environmental and Social Strategies

After passing through the three steps above, a company should now be in a stage of sustainability maturity high enough to focus on environmental and social strategies. In this portion, I will address examples of Brazilian companies that are listed in the indices. I believe that by understanding their strategies, which have made them eligible to be listed in the indices, other companies will have a set of examples to work with while designing their own sustainable path.

Each index has its own methodology to approach sustainability – questionnaires, document analysis, sustainable strategies, EMS, among others. Since in all indices the listed companies are mostly large ones and leaders in their sectors, it could be inferred that medium and smaller companies would not "fit" in this context. However, I truly believe that any company should be able to put into effect sustainable practices in spite of being eligible (or not) to be listed in the indices. To support my argument, the examples provided below should be applicable to medium and smaller companies as well. Thus, any company must not feel discouraged to embark deeply into sustainability.

The case of Natura (cosmetic company)

Only eight Brazilian companies are listed in the DJSI World. However, there are many others that are not eligible for the DJSI World, but are eligible for the ISE. See the case of Natura, a Brazilian cosmetic company. Since its creation, this company has the stamp of sustainability printed in its "DNA" (Cunha cited in Exame 2007:56). Ever since the beginning, Natura has been a well-known brand, which stands out as a company that puts effort toward social-environmental issues. However, this company does not meet the requirements of the DJSI World, mainly because it is not big enough. Even so, it is a leading company in Brazil in regard to sustainability practices. Natura is listed in the ISE and in the other two indices presented in this research. In 2007, Natura was able to completely eliminate the testing of animals such as guinea pigs. The animal testing generated several negative reviews for Natura, since it was contradictory to this company's purposes. After eliminating the animal testing, Natura has been changing its products from animal/minerals to vegetal raw material. Natura has also been working in this past year to develop its program to reduce carbon emissions. This company has exchanged the buses that used diesel to transport its employees inside the company for cars that uses natural gas. It also replaced the industrial alcohol used in its perfumers for organic alcohol, which is produced without chemicals or burning forests. Natura started to intensify the use of bottles made from recycled materials (Cunha cited in Exame 2007:57). Moreover, this company won the premium of best strategy by the first edition of Época Megazine's best practices against climate change (Mansur et. al cited in Época 2008:56) . According to Masur et al (cited in Época 2008:57), Natura stands out for four

sustainability practices: (a) it established a goal to reduce 33% of its emissions before 2011 and it created groups in each department to identify opportunities for reducing emissions; (b) it developed a program to stimulate suppliers and distributers to become more sustainable in their businesses; (c) it is implementing a recycling program to reduce the emissions caused by the discard of final packaging; and (d) it compensates all the carbon emissions from its production by funding projects of carbon reduction from other companies. Natura also has partnerships with communities from the states of Amazon and Bahia. Through these partnerships, people in these communities are trained to sustainably extract Brazilian nuts and other products from the environment (Cunha cited in Exame 2007:57).

The case of Itaú (Bank)

Itaú is a Brazilian bank that is well-known for its good practices. It is an interesting fact that a company whose activities do not directly harm the environment and society can be listed in the four indices. In this company, the concept of sustainability is incorporated in the development of services and products. This company was the first Brazilian institution to launch an investment fund that allows its clients to invest their money and, at the same time, collaborating to reduce greenhouse gas emissions (Kassai cited in Exame 2007:50). This fund sets a minimum value of R$ 10,000 – approximately USD 5,435[35] – and charges an administrative fee of 3.5% a year. From the total amount of this fund that is collected by the bank, 30% goes to environmental projects that reduce carbon emissions. Through this initiative Itaú wants to motivate its clients to reflect about sustainable practices and waste (Kassai cited in Exame 2007:50). Itaú is also listed in the

[35] Estimated exchange rate: 1.00 USD = R$1.84 (O Globo 2009)

Equator Principles, a financial industry benchmark for determining, assessing and managing social-environmental risks in project financing (Equator Principles 2008:1). Another interesting point in the sustainability approach of Itaú is the diversity of its staff – the company hires men, women, black, white, and handicapped. Itaú is also renewing the set of cars used by the company and exchanging them for cars that are hybrid (using both gas and alcohol), which is an increasing trend in Brazil. Moreover, this company is replacing air conditioning equipment that consumes less energy. Itaú is also increasing the number of meetings held through videoconference, which reduces the logistical costs involved in traditional meetings where people must travel to be present. The example of Itaú illustrates the significant participation of the financial sector in the sustainable approach, recalling that in the DJSI World and in the ISE the financial sector is the largest component.

The case of Aracruz (eucalyptus pulp producer)

Aracruz Celulose is a Brazilian company which is the world's largest producer of eucalyptus pulp. It is listed in the all sustainability indices, except the ISE. This company was not listed in the ISE's last review, which was selected on November 25, 2008 due to an unsatisfactory corporate governance performance (Gazeta Mercantil 2008:1b). However, Aracruz illustrates great sustainable practices regarding the environment and society. The Founder and Chairman of Aracruz, Erling Lorentzen, stresses that "you can't expect people who don't eat a proper meal to be concerned about the environment" (Hart 2000:127). In this line of thought, Aracruz has heavily invested in social programs to diminish the needs of local people to deplete natural forests. The company also invested

aggressively in the infrastructure of the surrounding community by supporting the creation of hospitals, schools, housing, and a training center for the employees (Hart 2000:128). Aracruz was the first Latin American company to adopt targets for greenhouse gas emission reduction. Currently, this company holds a stock of 15 million tons of carbon credits. All its reforestation projects are certified by the Brazilian Forest Certification Program (Programa Brasileiro de Certificacão Florestal – Ceflor), which assesses the rational use of natural resources (Manso cited in Exame 2007:28) (See Appendix 3 Link 7). This company also started to adopt the indicators from the Global Reporting Initiative (GRI)[36] to improve and standardize its reports. Succinctly, the practices of Aracruz shows great potential in developing environmental and social strategies, but it shows a lack of excellence performance in the corporate governance aspect, which entails the beginning stages of sustainability (Recall Subsection 5.1).

The case of Votorantim (paper and pulp)

Votorantim was the only Brazilian company to be added in the DJSI World in 2008. In the past years, this company has engaged deeply in a more sustainable path. Votorantim has a project to reduce its environmental impact that is based on the idea of substituting coal and petroleum and using more alternative resources (biomass) such as Brazilian nuts, husks of rice, and bark of sugar cane to heat their industrial ovens (Época 2008:54). Votorantim also burns tires, which emit 6% less carbon than the petroleum and uses other industries' waste to generate energy. "What is considered waste to some companies is energy and wealth to Votorantim" stresses Paulo Rocha, auditor of projects

36 "The Global Reporting Initiative (GRI) is a multi-stakeholder governed institution, which sets out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance." (Global Reporting 2008:1)

of Votorantim (Época 2008:55). This company also has an independent external auditor to ensure the veracity of its reports, which are divulged to the public.

The case of Usiminas (steel industry)

Usiminas started its business in a small town called Ipatinga in the state of Minas Gerais. Ipatinga used to be a very inhospitable region, with citizens having a life expectancy of only 40 years. In this area, sexually transmitted disease and many illnesses, such as malaria, were predominant. Usiminas constructed a new town through a common agreement with a local community. Currently, Ipatinga has 22,000 inhabitants who have the necessary infrastructure to have a good quality of life (Mundo Sustentável 2007:1). The town has five universities and a local community able to generate wealth and help in the development of the country. During its 45 years, Usiminas has strongly invested in projects to reduce the environmental impact caused by the production of steel. For instance, the water used by this company is reused, and the portion of the water that goes to the local river passes through a treatment station. The degraded areas were reforested. In addition, Usiminas built churches, squares, and a zoological garden with 456 animals from 70 species (Mundo Sustentável 2007:1). The zoo acts as a reference to the local fauna, which the public is able to learn about. The zoo also receives abandoned animals from the forest police department, treats them and gives them aid to return to their natural habitat. Another program that was implemented in Ipatinga involves 150 children and teenagers – from the lower class – and it is called athletes of nature. In this program the students are occupied with several activities, such as planting organic vegetables. Nothing can be sold, in fact, the students take everything they planted to their own home

(or planted vegetables are donated). To be in this program they need to have 90% attendance in school and good grades (Mundo Sustentável 2007:1). During the time spent in this project, the students take swimming and soccer classes. They also learn about sexuality, develop recycling projects, and go to the movies, among other activities. Usiminas found that 90% of the students improved their relationships with their parents and friends. Usiminas believes that, as a company, it is expected to achieve good economic results, but at the same time it should share these results with other stakeholders (suppliers, clients, employees, and local community) in its business. The good practices of Usiminas have allowed its inclusion in the DJSI World in 2007. This company is also listed in the CEBDS and has ISO 14001 certifications. Surprisingly, this company was invited to take part in the ISE assessment but it was not listed. I assume that the company did not meet the questionnaire requirements because completing it involved too much bureaucracy, particularly because it entails use of an auditor at all its branches, which is time consuming and costly. But, this should not serve as a good justification, if this was the case.

Additional recommendations

The examples provided should give an idea about the areas which companies interested in developing/improving their sustainable path must take into consideration. Succinctly, the hot topics entail the development of the following projects:

- Projects to reduce greenhouse gas emissions;
- Projects to create recycling strategies (this can involve and be implemented in local communities);

- Projects to replace the petroleum and coal for renewable resources, such as biomass;
- Projects to use cars that can work with natural gas, or biofuel;
- Projects to invest in reforesting;
- Projects to develop local infrastructure to improve the quality of life of the local community;
- Project to develop incentives to use videoconferences to avoid travelling costs;
- Projects that involves stakeholders in the development of a company's sustainability principles;
- Projects to develop different types of social programs.

From this small list (and examples) any company should be able to think about potential sustainable projects that are feasible. For medium, and particularly small, companies I strongly recommend starting by implementing simpler projects that involve a more social approach than environmental. Social programs, depending on their approach, are likely to be less expensive to implement than the environmental ones. Recycling programs for instance are a good start to improve social and environmental quality.

In addition, the CEBDS provides events related to sustainability in business. Not all, but some of its events are open to other companies besides the listed ones. Thus, I encourage companies to contact this particular organization and fill in the registration form (See Appendix 3 Link 4). As they do that, they will certainly pass through an evaluation from the CEBDS board that will approve or reject the participation of the

company in the index. Even if a company is not approved to be listed in the index, said company should develop a solid relationship with CEBDS. Solid relationships can open/increase opportunities for a company to be involved in some of the CEBDS events. Although this index does not provide any type of individual evaluation or consulting of a company's sustainability performance, this index can develop specific projects with partners that can promote sustainable practices that can be useful to other companies.

Besides the recommendations provided in this chapter, I also highly suggest that companies read the "The Business Guide to Sustainability" by Hitchcock and Willard. I used only a couple figures from this book but, there are many tables and chapters, which I believe can be used as a potential tool while companies start assessing their activities to begin developing a sustainable approach. Since some of the tables and chapters are industry-specific, I have left them out of this research. Some tables presented in this book such as environmental score sheets, sustainable products checklist, options for working with suppliers, and metrics based on mission and values, can be incredibly relevant in the beginning stages of developing sustainability maturity. Moreover, the book "Leading Change toward Sustainability" by Doppelt is also likely to bring potential support in the early stages of developing a sustainability approach. It deeply addresses the sustainability blunders and solutions, and the wheel of change toward sustainability. In addition to that, Doppelt provides tables to help companies evaluate their organization's sustainability blunders, governance system, and change initiatives. Together, these two are important resource in the beginning stages of developing sustainability maturity. For a more theoretical approach, I recommend "Cannibals with Forks: The Triple Bottom Line of

21st Century Business" by Elkington, which provides information about business' role in helping society (and the environment) to achieve the three interlinked dimensions of sustainability: economic prosperity, environmental protection, and social equity.

The set of recommendations provided in this chapter should be sufficient to assist other Brazilian companies in applying sustainable practices in their businesses. Evidently, a company must shape these recommendations to fit them in its reality. In short, there are many sustainability approaches that can be used to put sustainable practices into effect. From now on, any company should have no excuses for not implementing at least some of them.

Constraint of this research

The purpose of my research is to increase awareness of Brazilian companies regarding the importance of sustainability in their business. However, I realize that it is very difficult to disseminate this idea among these companies just through my study. The biggest barrier is the language aspect. The first step to be taken in order to make these recommendations feasible to other Brazilian companies, particularly the medium and smaller ones, is to make this research available in Portuguese. Even so, publishing this research in the native language does not ensure that companies would be interested or take the time to look for some resource like this one. Hence, there are two ways in which I could be able to approach Brazilian companies: (a) I could personally contact some Brazilian companies, talk about my research, and see if they are interested in reading my research, which seems too broad and random; or (b) I could contact the indices, mention that each one played a very significant role in my research and offer to send a full copy if

they are interested. On the other hand, I realize that these are long steps to take and very uncertain too. It may also be possible to publish some of these findings in business journals in Brazil and elsewhere.

I believe the best way to go is to try to promote sustainability in the company in which I will start working. This solution can seem too little given the content and the time spent on this research, but it is a start. Another possibility is to lecture in Brazilian organizations, entities, schools, and research centers. Fundação Getulio Vargas (FGV), SEBRAE, and IBMEC are some examples of places where I could potentially perform lectures about sustainability in business. SEBRAE for instance, encourages and supports the opening and the expansion of small business in Brazil. This entity offers the conditions that micro and small Brazilian enterprises need for their survival and prosperity (See Appendix 3 Link 8). Thus, I see a great potential in disseminating the sustainability idea into SEBRAE's approach to assist companies in Brazil. IBMEC and FGV are well-known management education schools and research centers (See Appendix 3 Link 9 and 10). Bringing the idea of sustainability to students can be an excellent way to disseminate sustainability into Brazilian businesses. Students have the necessary energy to bring and develop new ideas as they start their professional lives. In addition, lectures in schools and research centers can be a great target to promote sustainability in Brazil in order to get people involved in this new trend. I strongly believe that information is the key that lead to change. Hence, if I can be part of the people who can offer valuable information to encourage change in the mind-set of businesses activities, then I will reach the purpose of my research.

The point here is not to promote an extraordinary change in the way Brazilian companies do their business or how they must make outstanding changes and projects to get listed on the indices. In fact, the essence here is to know the business and the stakeholders well enough to be as sustainable as a company can be. In the end, it is not a matter of being listed in the indices. Any company should understand the importance of a sustainable behavior in the current context.

Nowadays, companies must be concerned about the impact of their activities on society and on the environment and, more importantly they must take sustainable actions to minimize these impacts. Developing an understanding about the critical role that companies play in promoting sustainability is the essence of this research. For this reason, I was very careful when providing a set of recommendations to help Brazilian companies to put into effect sustainability in their businesses.

CONCLUSION

"A journey of 200 kilometers starts with a simple step." (Hunter 2004)

"Each disciplined effort has a multiple repayment." (Rohn cited in Hunter 2004:126)

The traditional arithmetic of adding revenues and subtracting costs was replaced by a new equation composed of variables that are much more complex. Climate change concerns, biodiversity, solid relationship with stakeholders and consumers, renewable resources, poverty and social inequalities, greenhouse emissions, biofuel vehicles and recycling are examples of some components that have been taken into consideration in the decision making of companies. Some Brazilian companies have been positively improving their means of dealing with environmental and social challenges. The examples of good practices at this point have shown the way to go. However, this is just the beginning of the changes that companies are called to make toward a more sustainable path; more is yet to come. The clear understanding about this new reality is the legacy that this research aims to provide.

Sustainability (or sustainable development) searches for sustainable options in the relationship between human beings, society, natural resources, and financial resources. Business activities over the past have been blamed as the greatest contributors to climate change and other environmental and social concerns. In the past 20 years, businesses have been passing through a wave of green marketing, and now are at the point of discussing and finding solutions to implement/improve sustainability through their activities.

As the sustainability indices were addressed, it is clear that currently, the world's leading companies are integrating sustainability considerations in their core business concerns. But a lot is still to be done. Besides understanding the relevance of accounting for general and specific industry sustainability opportunities and risks, companies are also setting and achieving quantifiable and clear objectives to implement sustainability in their strategies.

While analyzing the four indices I noticed that each has its own way of approaching sustainability in business. All information about the functioning of each index is available in their Web sites. However, as I started to look deeply into each index, I realized that it can be difficult to sift through all the available information. Nonetheless, I was able to organize the information in a way that the made sense to me. At the end, I noticed that even though the approaches differ from each other, I was gladly able to understand the functioning of each.

The comparisons among the indices were relevant to me in the sense that now I can guide companies to take the right path according to their interest. For instance, if companies are interested in having their sustainability performance evaluated and rated, they should be looking at the assessment tools (questionnaires) of the DJSI World and the ISE, which are available in their Web sites. However, if companies are not interested in being rated or deeply assessed, but they want to develop or better understand what sustainability in business is all about, they should contact the CEBDS. From my point of view, I believe that this index can serve as a potential tool to learn about sustainability trends and concerns. On the other hand, if companies are interested in focusing on their

environmental performance, I encourage them to look at the ISO 14001 features. From my understanding, the 20 certified entities in Brazil can serve as a great way to enhance companies' environmental performance and reduce environmental impacts caused by companies' activities.

I expected, in the end of my research, to have demonstrated the importance of sustainability in business. This research covered the concept of sustainability in business, which has become a hot topic in the corporate setting. Businesses have been referring to sustainability as the triple bottom line, which entails economic, environmental, and social dimensions. Instead of trading these dimensions against each other, businesses have been realizing the competitive advantages and other benefits that they can get by optimizing all three in the long run. As companies approach sustainability, they start understanding that it is a natural extension of businesses' core strategies. The concern about climate change had delivered an increasing expectation of businesses as potential actors against it. Businesses are the ones that have more discipline and resources to lead the transformation that the concept of sustainability entails. As these expectations have grown, new businesses and associated stakeholders have embarked, step by step, in this direction.

Besides the triple bottom line idea, this research also presented some concepts that should be associated to sustainability in business, such as corporate responsibility, corporate governance, leadership, relationship with consumers/channel partners, the wheel of change toward sustainability, and the value chain for sustainability in business presented in chapter two. In chapter three, this research introduced and described four

sustainability indices that are relevant to sustainability in the Brazilian market. These indices have been encouraging and supporting companies that adopt sustainable practices. Through the investigation of the indices, I was able to build charts of comparison to better analyze the indices in chapter four. In this chapter I was able to answer the first two research questions. Finally, I concluded my work in chapter five, in which I made recommendations to help more Brazilian companies to implement sustainable practices and benefit from them. To support my recommendations and to make them achievable, I addressed some examples of Brazilian companies currently listed in the indices. Therefore, by the end of chapter five, I answered my last research question.

Even though I made some recommendations to be used by other Brazilian companies, it is relevant to point out that the recommendations presented will not be framed as prescriptions that can be followed and implemented without much thought. Hence, in each company, the recommendations made in this research should be reframed according to the specifics of each. The recommendations will help Brazilian companies to find a specific path for their sustainable journey. I hope that this research will encourage Brazilian companies to take the challenge to move toward a sustainable approach, share their experiences with one another, and consequently contribute to bettering environmental and social quality.

Given the content presented in this work, I bring to a close my thesis emphasizing that companies putting efforts into sustainability as a core ingredient of their strategies are likely to be eligible to be listed in sustainability indices – and consequently, empower

their reputation, branding, credibility, and competitive advantages – and more importantly, contribute to a better quality of social and environmental life.

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APPENDICES

Appendix 1 – Doppelt's Seven Sustainability Blunders and Solutions

The first blunder refers to patriarchal thinking, which generates a false sense of security since the management of their internal affairs is hierarchical; it imposes an autocratic power and authority structure. In this blunder, changing companies' dominant mind-set is the first, if not the most important, step to develop new forms of governance and operations. The second blunder discusses about a 'siloed' approach to environment and social-economic issues. According to this blunder, it is not good when functions within a company work independently of each other; all the functions should work together to provide a sense of the company's interference in the environment from a bigger perspective. In this blunder, Doppelt states that it is necessary to organize powerful transition teams to rearrange the parts of the system. It is very important to choose the right people to form these teams. They should focus on changing the organization's physical interactions with the environment, workers, and communities, as well as on transforming the human elements of the organization (Doppelt 2003:114). The third blunder highlights that the lack of a clear vision of sustainability is the most common weakness of many companies. Only with a clear vision will companies be able to address their sustainable goals. Hence, changing the goals is the third-greatest leverage in the wheel of change, and it is crucial because it reorients the purpose and intentions of an organization (Doppelt 2003:129). Confusion over the cause and effect is the issue entailed in blunder four. It points out that a problem can only be solved if it is known. This is the position of many companies today. They believe they know the

solutions to their environmental and social problems, but they do not know the causes of the problems. In this blunder it is necessary to change the strategies focused on operations and the strategies focused on people, because change in governance leads people to think and behave differently (Doppelt 2003:147). Blunder five states that a lack of information increases the chances for resisting changes. People are likely to resist changes, unless they clearly comprehend the need, purpose, strategies and expected effect of the change and believe it will succeed and benefit the company and themselves. According to Doppelt (2003:174), this requires a continuous exchange of information about the need, purpose, strategies, and benefits of sustainability. Blunder six brings the issue of insufficient mechanisms for learning. In other words, it is difficult for companies to overcome the many barriers they will face, as they start implementing sustainable strategies, if they lack knowledge and understanding about these barriers. Information is power, and without plausible information, people cannot make good decisions. Hence, it is necessary to create conditions to shift the information flow in the organization and constantly emphasize the need, vision, and strategies for achieving sustainability (Doppelt 2003:173). Blunder seven stresses that companies often fail to institutionalize sustainability. This means that companies fail to associate sustainability-based thinking, perspectives and behavior to the daily operating procedures and culture of the organization. This last blunder requires an adjustment in the parameters of the organizations by aligning systems and structures with sustainability. This can help “anchor sustainability lastingly in standard operating procedures and culture” (Doppelt 2003:211).

Appendix 2 - List of the DJSI World Components by Sector

	Name	Country	Sector (19)	Comment
1	Renault S.A.	France	Automobiles & Parts	
2	Compagnie Gen. des Etabl. Michelin	France	Automobiles & Parts	
3	BMW AG	Germany	Automobiles & Parts	
4	Daimler AG	Germany	Automobiles & Parts	
5	Volkswagen AG	Germany	Automobiles & Parts	
6	Pirelli & C. S.p.A.	Italy	Automobiles & Parts	
7	Denso Corp.	Japan	Automobiles & Parts	
8	Toyota Motor Corp.	Japan	Automobiles & Parts	
9	Johnson Controls Inc.	United States	Automobiles & Parts	
10	Australia & New Zealand Banking Group Ltd.	Australia	Banks	
11	National Australia Bank Ltd.	Australia	Banks	
12	Westpac Banking Corp.	Australia	Banks	
13	Dexia S.A.	Belgium	Banks	
14	Banco Bradesco S/A Pref	Brazil	Banks	
15	Banco Itau Holding Financeira S.A. Pref	Brazil	Banks	
16	Canadian Imperial Bank of Commerce	Canada	Banks	
17	Royal Bank of Canada	Canada	Banks	
18	BNP Paribas S.A.	France	Banks	
19	Deutsche Bank AG	Germany	Banks	
20	UniCredit S.p.A.	Italy	Banks	
21	Fortis N.V.	Netherlands	Banks	
22	Nedbank Group Ltd.	South Africa	Banks	
23	Banco Bilbao Vizcaya Argentaria S.A.	Spain	Banks	
24	Banco Santander S.A.	Spain	Banks	
25	Credit Suisse Group	Switzerland	Banks	
26	UBS AG	Switzerland	Banks	
27	Barclays PLC	United Kingdom	Banks	
28	HBOS PLC	United Kingdom	Banks	
29	HSBC Holdings PLC (UK Reg)	United Kingdom	Banks	
30	Lloyds TSB Group PLC	United Kingdom	Banks	
31	Royal Bank of Scotland Group PLC	United Kingdom	Banks	
32	Citigroup Inc.	United States	Banks	
33	BHP Billiton Ltd.	Australia	Basic Resources	
34	BlueScope Steel Ltd.	Australia	Basic Resources	
35	Rio Tinto Ltd.	Australia	Basic Resources	
36	Aracruz Celulose S/A Pref B	Brazil	Basic Resources	
37	Usinas Siderurgicas de Minas Gerais	Brazil	Basic Resources	
38	Votorantim Celulose e Papel S/A Pref	Brazil	Basic Resources	Addition
39	Barrick Gold Corp.	Canada	Basic Resources	Addition
40	Newmont Mining Corp. of Canada Ltd.	Canada	Basic Resources	
41	Outokumpu Oyj	Finland	Basic Resources	
42	Rautaruukki Oyj K	Finland	Basic Resources	Addition

43	Tata Steel Ltd.	India	Basic Resources	Addition
44	Norsk Hydro ASA	Norway	Basic Resources	
45	POSCO	South Korea	Basic Resources	
46	BHP Billiton PLC	United Kingdom	Basic Resources	
47	Lonmin PLC	United Kingdom	Basic Resources	
48	Rio Tinto PLC	United Kingdom	Basic Resources	
49	Xstrata PLC	United Kingdom	Basic Resources	
50	Anglo American PLC	United Kingdom	Basic Resources	
51	Newmont Mining Corp.	United States	Basic Resources	
52	Rhodia S.A.	France	Chemicals	Addition
53	BASF S.E. Germany Chemicals	Germany	Chemicals	
54	Bayer AG Germany Chemicals	Germany	Chemicals	
55	Toray Industries Inc.	Japan	Chemicals	
56	Akzo Nobel N.V.	Netherlands	Chemicals	
57	Koninklijke DSM N.V.	Netherlands	Chemicals	
58	Syngenta AG	Switzerland	Chemicals	
59	Dow Chemical Co.	United States	Chemicals	
60	Praxair Inc.	United States	Chemicals	
61	Lend Lease Corp. Ltd.	Australia	Construction & Materials	
62	Vinci S.A.	France	Construction & Materials	Addition
63	Hochtief AG	Germany	Construction & Materials	
64	CRH PLC	Ireland	Construction & Materials	
65	Italcementi S.p.A.	Italy	Construction & Materials	
66	Asahi Glass Co. Ltd.	Japan	Construction & Materials	
67	Matsushita Electric Works Ltd.	Japan	Construction & Materials	
68	Acciona S.A.	Spain	Construction & Materials	
69	Actividades de Construccion y Servicios S.A.	Spain	Construction & Materials	
70	Fomento de Construcciones y Contratas	Spain	Construction & Materials	Addition
71	Grupo Ferrovial S.A.	Spain	Construction & Materials	
72	Holcim Ltd. Reg	Switzerland	Construction & Materials	
73	Siam Cement PCL	Thailand	Construction & Materials	
74	Balfour Beatty PLC	United Kingdom	Construction & Materials	
75	AMP Ltd.	Australia	Financial Services	
76	ASX Ltd.	Australia	Financial Services	
77	Itausa-Investimentos Itau S/A Pref	Brazil	Financial Services	
78	Deutsche Boerse AG	Germany	Financial Services	
79	Daiwa Securities Group Inc.	Japan	Financial Services	
80	Nomura Holdings Inc.	Japan	Financial Services	
81	Investec Ltd.	South Africa	Financial Services	
82	Criteria CaixaCorp S.A.	Spain	Financial Services	Addition

83	3i Group PLC	United Kingdom	Financial Services	
84	Cattles PLC	United Kingdom	Financial Services	
85	Investec PLC	United Kingdom	Financial Services	
86	Man Group PLC	United Kingdom	Financial Services	
87	Provident Financial PLC	United Kingdom	Financial Services	
88	Schroders PLC	United Kingdom	Financial Services	
89	Merrill Lynch & Co. Inc.	United States	Financial Services	
90	State Street Corp.	United States	Financial Services	
91	Danisco A/S	Denmark	Food & Beverage	
92	Groupe Danone S.A.	France	Food & Beverage	
93	Coca-Cola Hellenic Bottling Co. S.A.	Greece	Food & Beverage	Addition
94	Heineken N.V.	Netherlands	Food & Beverage	
95	Unilever N.V. CVA	Netherlands	Food & Beverage	
96	Nestle S.A.	Switzerland	Food & Beverage	
97	Cadbury PLC	United Kingdom	Food & Beverage	
98	Diageo PLC	United Kingdom	Food & Beverage	
99	SABMiller PLC	United Kingdom	Food & Beverage	
100	Unilever PLC	United Kingdom	Food & Beverage	
101	Dr Pepper Snapple Group Inc.	United States	Food & Beverage	
102	Kraft Foods Inc. Cl A	United States	Food & Beverage	
103	PepsiCo Inc.	United States	Food & Beverage	
104	MDS Inc. Canada Health Care Addition	Canada	Health Care	Addition
105	Coloplast A/S Series B	Denmark	Health Care	
106	Novo Nordisk A/S Series B Denmark Health Care	Denmark	Health Care	
107	Novozymes A/S Series B Denmark Health Care	Denmark	Health Care	
108	Essilor International S.A.	France	Health Care	
109	Sanofi-Aventis S.A. France Health Care	France	Health Care	
110	Novartis AG Switzerland Health Care	Switzerland	Health Care	
111	Roche Holding AG Part. Cert. Switzerland Health Care	Switzerland	Health Care	
112	Astrazeneca PLC	United Kingdom	Health Care	
113	GlaxoSmithKline PLC United Kingdom Health Care	United Kingdom	Health Care	
114	Smith & Nephew PLC United Kingdom Health Care	United Kingdom	Health Care	
115	Abbott Laboratories	United States	Health Care	
116	Baxter International Inc.	United States	Health Care	
117	Becton Dickinson & Co.	United States	Health Care	
118	Health Net Inc. United States Health Care	United States	Health Care	
119	Humana Inc. United States Health Care	United States	Health Care	
120	Invitrogen Corp. United States Health Care Addition	United States	Health Care	Addition
121	Quest Diagnostics Inc. United States Health	United States	Health Care	

	Care			
122	UnitedHealth Group Inc. United States Health Care	United States	Health Care	
123	Amcor Ltd.	Australia	Industrial Goods & Services	Addition
124	Transurban Group	Australia	Industrial Goods & Services	
125	Bombardier Inc. Cl B SV	Canada	Industrial Goods & Services	
126	Schneider Electric S.A.	France	Industrial Goods & Services	
127	Fraport AG	Germany	Industrial Goods & Services	
128	Siemens AG	Germany	Industrial Goods & Services	
129	Daikin Industries Ltd.	Japan	Industrial Goods & Services	
130	Fuji Electric Holdings Co. Ltd.	Japan	Industrial Goods & Services	
131	Itochu Corp.	Japan	Industrial Goods & Services	
132	Komatsu Ltd.	Japan	Industrial Goods & Services	
133	Marubeni Corp.	Japan	Industrial Goods & Services	Addition
134	Mitsui O.S.K. Lines Ltd.	Japan	Industrial Goods & Services	
135	Murata Manufacturing Co. Ltd.	Japan	Industrial Goods & Services	
136	Nippon Yusen K.K.	Japan	Industrial Goods & Services	
137	NSK Ltd.	Japan	Industrial Goods & Services	
138	Sumitomo Corp.	Japan	Industrial Goods & Services	
139	Sumitomo Electric Industries Ltd.	Japan	Industrial Goods & Services	
140	TDK Corp.	Japan	Industrial Goods & Services	
141	Toshiba Corp.	Japan	Industrial Goods & Services	
142	Randstad Holding N.V.	Netherlands	Industrial Goods & Services	
143	TNT N.V.	Netherlands	Industrial Goods & Services	
144	Samsung SDI Co. Ltd.	South Korea	Industrial Goods & Services	
145	Abertis Infraestructuras S.A.	Spain	Industrial Goods & Services	
146	Atlas Copco AB Series A	Sweden	Industrial Goods & Services	
147	Sandvik AB	Sweden	Industrial Goods & Services	Addition
148	SKF AB Series B	Sweden	Industrial Goods & Services	
149	Volvo AB Series B	Sweden	Industrial Goods & Services	
150	Sulzer AG	Switzerland	Industrial Goods & Services	Addition
151	BAE Systems PLC	United Kingdom	Industrial Goods & Services	
152	Rentokil Initial PLC	United Kingdom	Industrial Goods & Services	
153	Rolls-Royce Group PLC	United Kingdom	Industrial Goods & Services	
154	Travis Perkins PLC	United Kingdom	Industrial Goods & Services	
155	3M Co.	United States	Industrial Goods & Services	

156	Agilent Technologies Inc.	United States	Industrial Goods & Services	
157	Caterpillar Inc.	United States	Industrial Goods & Services	
158	Cummins Inc.	United States	Industrial Goods & Services	
159	General Electric Co.	United States	Industrial Goods & Services	
160	ITT Corp.	United States	Industrial Goods & Services	
161	MeadWestvaco Corp.	United States	Industrial Goods & Services	
162	Nalco Holding Co.	United States	Industrial Goods & Services	Addition
163	United Technologies Corp.	United States	Industrial Goods & Services	
164	Waste Management Inc.	United States	Industrial Goods & Services	
165	Insurance Australia Group Ltd.	Australia	Insurance	
166	AXA S.A.	France	Insurance	
167	Allianz SE	Germany	Insurance	
168	Muenchener Rueckversicherungs-Ges.	Germany	Insurance	
169	Sompo Japan Insurance Inc.	Japan	Insurance	
170	Aegon N.V.	Netherlands	Insurance	
171	ING Groep N.V.	Netherlands	Insurance	
172	Storebrand ASA	Norway	Insurance	
173	Baloise-Holding AG	Switzerland	Insurance	
174	Swiss Reinsurance Co.	Switzerland	Insurance	
175	Zurich Financial Services AG	Switzerland	Insurance	
176	Aviva PLC	United Kingdom	Insurance	
177	Friends Provident PLC	United Kingdom	Insurance	
178	Legal & General Group PLC	United Kingdom	Insurance	
179	RSA Insurance Group PLC	United Kingdom	Insurance	Addition
180	JCDecaux S.A.	France	Media	
181	Television Francaise 1 S.A.	France	Media	
182	Thomson	France	Media	Addition
183	Dai Nippon Printing Co. Ltd.	Japan	Media	
184	Reed Elsevier N.V. Cert.	Netherlands	Media	
185	Wolters Kluwer N.V.	Netherlands	Media	
186	British Sky Broadcasting Group PLC	United Kingdom	Media	
187	ITV PLC	United Kingdom	Media	
188	Pearson PLC	United Kingdom	Media	
189	Reed Elsevier PLC	United Kingdom	Media	
190	Yell Group PLC	United Kingdom	Media	
191	Walt Disney Co.	United States	Media	
192	Woodside Petroleum Ltd.	Australia	Oil & Gas	
193	Petroleo Brasileiro S/A Pref	Brazil	Oil & Gas	
194	EnCana Corp.	Canada	Oil & Gas	
195	Nexen Inc.	Canada	Oil & Gas	
196	TransCanada Corp.	Canada	Oil & Gas	
197	Neste Oil Oyj	Finland	Oil & Gas	
198	Technip S.A.	France	Oil & Gas	
199	Total S.A.	France	Oil & Gas	
200	ENI S.p.A.	Italy	Oil & Gas	

201	StatoilHydro ASA	Norway	Oil & Gas	
202	Sasol Ltd.	South Africa	Oil & Gas	Addition
203	Gamesa Corporacion Tecnologica S.A.	Spain	Oil & Gas	
204	Repsol YPF S.A.	Spain	Oil & Gas	
205	AMEC PLC	United Kingdom	Oil & Gas	
206	BG Group PLC	United Kingdom	Oil & Gas	
207	BP PLC	United Kingdom	Oil & Gas	
208	Royal Dutch Shell PLC A	United Kingdom	Oil & Gas	
209	FMC Technologies Inc.	United States	Oil & Gas	
210	Noble Corp.	United States	Oil & Gas	
211	Schlumberger Ltd.	United States	Oil & Gas	
212	adidas AG	Germany	Personal & Household Goods	
213	Henkel AG & Co. KGaA Pfd.	Germany	Personal & Household Goods	
214	Puma AG Rudolf Dassler Sport	Germany	Personal & Household Goods	
215	FUJIFILM Holdings Corp.	Japan	Personal & Household Goods	
216	Kao Corp.	Japan	Personal & Household Goods	Addition
217	Matsushita Electric Industrial Co. Ltd.	Japan	Personal & Household Goods	
218	Sekisui Chemical Co. Ltd.	Japan	Personal & Household Goods	
219	Sumitomo Forestry Co. Ltd.	Japan	Personal & Household Goods	
220	Koninklijke Philips Electronics N.V.	Netherlands	Personal & Household Goods	
221	Electrolux AB Series B	Sweden	Personal & Household Goods	
222	British American Tobacco PLC	United Kingdom	Personal & Household Goods	
223	Taylor Wimpey PLC	United Kingdom	Personal & Household Goods	
224	Herman Miller Inc.	United States	Personal & Household Goods	
225	Kimberly-Clark Corp.	United States	Personal & Household Goods	
226	Nike Inc.	United States	Personal & Household Goods	
227	CFS Retail Property Trust	Australia	Real Estate	
228	Commonwealth Property Office Fund	Australia	Real Estate	
229	GPT Group	Australia	Real Estate	
230	Stockland	Australia	Real Estate	
231	Klepierre S.A.	France	Real Estate	
232	Unibail-Rodamco S.A. France	France	Real Estate	Addition
233	Mitsubishi Estate Co. Ltd.	Japan	Real Estate	

234	Wereldhave N.V.	Netherlands	Real Estate	
235	British Land Co. PLC	United Kingdom	Real Estate	
236	Hammerson PLC	United Kingdom	Real Estate	
237	Land Securities Group PLC	United Kingdom	Real Estate	
238	Liberty International PLC	United Kingdom	Real Estate	Addition
239	SEGRO PLC	United Kingdom	Real Estate	
240	Shaftesbury PLC	United Kingdom	Real Estate	
241	Plum Creek Timber Co. Inc. REIT	United States	Real Estate	Addition
242	ProLogis	United States	Real Estate	Addition
243	Wesfarmers Ltd.	Australia	Retail	
244	Kesko Oyj Series B	Finland	Retail	
245	Carrefour S.A.	France	Retail	
246	Metro AG	Germany	Retail	
247	Aeon Co. Ltd.	Japan	Retail	
248	Benesse Corp.	Japan	Retail	
249	Inditex S.A.	Spain	Retail	
250	DSG International PLC	United Kingdom	Retail	
251	Home Retail Group PLC	United Kingdom	Retail	
252	J Sainsbury PLC	United Kingdom	Retail	
253	Kingfisher PLC	United Kingdom	Retail	
254	Marks & Spencer Group PLC	United Kingdom	Retail	
255	Tesco PLC	United Kingdom	Retail	
256	H&R Block Inc.	United States	Retail	
257	Office Depot Inc.	United States	Retail	
258	Staples Inc.	United States	Retail	
259	Nokia Corp.	Finland	Technology	
260	SAP AG	Germany	Technology	
261	Tata Consultancy Services Ltd.	India	Technology	Addition
262	STMicroelectronics N.V.	Italy	Technology	
263	Fujitsu Ltd.	Japan	Technology	
264	NEC Corp.	Japan	Technology	
265	Ricoh Co. Ltd.	Japan	Technology	
266	Rohm Co. Ltd.	Japan	Technology	Addition
267	Seiko Epson Corp.	Japan	Technology	Addition
268	Trend Micro Inc.	Japan	Technology	
269	ASML Holding N.V.	Netherlands	Technology	
270	Indra Sistemas S.A.	Spain	Technology	
271	Taiwan Semiconductor Manufacturing	Taiwan	Technology	
272	United Microelectronics Corp.	Taiwan	Technology	Addition
273	Advanced Micro Devices Inc.	United States	Technology	
274	Cisco Systems Inc.	United States	Technology	
275	Dell Inc.	United States	Technology	
276	Hewlett-Packard Co.	United States	Technology	
277	Intel Corp.	United States	Technology	
278	International Business Machines Corp.	United States	Technology	
279	Motorola Inc.	United States	Technology	
280	Symantec Corp.	United States	Technology	Addition
281	TELUS Corp.	Canada	Telecommunications	

282	China Mobile Ltd.	China	Telecommunications	Addition
283	Deutsche Telekom AG	Germany	Telecommunications	
284	Telecom Italia S.p.A.	Italy	Telecommunications	
285	Telenor ASA	Norway	Telecommunications	
286	SK Telecom Co. Ltd.	South Korea	Telecommunications	Addition
287	Telefonica S.A.	Spain	Telecommunications	
288	Swisscom AG	Switzerland	Telecommunications	
289	BT Group PLC	United Kingdom	Telecommunications	
290	Vodafone Group PLC	United Kingdom	Telecommunications	
291	TABCorp Holdings Ltd.	Australia	Travel & Leisure	
292	Accor S.A.	France	Travel & Leisure	
293	Air France-KLM	France	Travel & Leisure	
294	Sodexo S.A.	France	Travel & Leisure	
295	Deutsche Lufthansa AG	Germany	Travel & Leisure	
296	TUI AG	Germany	Travel & Leisure	
297	MTR Corp. Ltd.	Hong Kong	Travel & Leisure	
298	Iberia Lineas Aereas de Espana S.A.	Spain	Travel & Leisure	
299	Compass Group PLC	United Kingdom	Travel & Leisure	
300	Firstgroup PLC	United Kingdom	Travel & Leisure	
301	Ladbrokes PLC	United Kingdom	Travel & Leisure	
302	McDonald's Corp.	United States	Travel & Leisure	
303	Starbucks Corp.	United States	Travel & Leisure	
304	Comp. Energetica de Minas Gerais	Brazil	Utilities	
305	Fortum Oyj	Finland	Utilities	
306	Veolia Environnement S.A.	France	Utilities	
307	E.ON AG	Germany	Utilities	
308	RWE AG	Germany	Utilities	
309	Enel S.p.A.	Italy	Utilities	
310	EDP-Energias de Portugal S.A.	Portugal	Utilities	Addition
311	Enagas S.A.	Spain	Utilities	Addition
312	Endesa S.A.	Spain	Utilities	
313	Gas Natural SDG S.A.	Spain	Utilities	
314	Iberdrola S.A.	Spain	Utilities	
315	Red Electrica Corp. S.A.	Spain	Utilities	
316	Union Fenosa S.A.	Spain	Utilities	
317	Centrica PLC	United Kingdom	Utilities	
318	National Grid PLC	United Kingdom	Utilities	
319	United Utilities Group PLC	United Kingdom	Utilities	
320	Entergy Corp.	United States	Utilities	

Source: (DJSI 2008:1-7d)

Appendix 3 – Links to Other Resources

Link 1: Seven criteria to identify eligible companies for the DJSI World
<http://www.sustainability-index.com/djsi_pdf/publications/Guidebooks/DJSI_World_Guidebook_10_1.pdf>. (See pages 26-28)

Link 2: The DJSI World corporate sustainability monitoring (CSM)
<http://www.sustainability -indices.com/07_htmle/assessment/monitoring.html>.

Link 3: Characteristics of the DJSI World's questionnaire
<http://www.sustainability-index.com/djsi_pdf/publications/Guidebooks/DJSI_World_Guidebook_10_1.pdf> (See pages 10-11 and 19-20)
<http://www.sustainability-indices.com/djsi_pdf/general_questionnaire_2008.pdf>. (Full questionnaire)

Link 4: Registration form / CEBDS
<http://www.cebds.org.br/cebds/cebds-associe-se.asp>.

Link 5: Forest Stewardship Council (FSC)
<http://www.fsc.org/about-fsc.html>.

Link 6: Conselho Brasileiro de Manejo Florestal FSC Brasil
< http://www.fsc.org.br/>.

Link 7: Programa Brasileiro de Certificação Florestal (Celfor)
< http://www.inmetro.gov.br/qualidade/cerflor.asp> (In Portuguese).

Link 8: Sebrae – Agent of Development in Brazil
<http://www.sebrae.com.br/customizado/sebrae/institucional/sebrae-in-english>.

Link 9: IBMEC – Brazilian Management Education School and Research Center
<http://www.ibmecrj.br/sub/rj/files/english_version/index.htm>.

Link 10: Fundação Getulio Vargas
<http://www.fgv.br/fgvportal/>.

Appendix 4 – Advantages of Companies Listed on DJSI World

Sustainability Investing: The index serves as a parameter for analysis of investors throughout the world that are looking for social and environmental companies in which to invest. Companies are likely to directly benefit from the growing demand for sustainability investments. Thus companies are likely to increase financial benefit due to investments based on the index. That means that because they are members of the DJSI, companies are qualified to be included in the DJSI-based portfolios – the one created by the licensees.

Value Creation: The questionnaire can help companies identifying sustainability criteria. It can be used as a communication tool about companies' management of sustainability to internal and external stakeholders, such as legislators, customers, and employees.

Reputation and Brand: Being recognized as a global sustainability leader in a specific sector can enhance a company's reputation for stakeholders, financial analysts, and the public. Thus, companies are motivated to put together economic, environmental, and social factors in their businesses strategies to increase a brand's value in the long term.

Benchmark Feedback: Companies receive a benchmarking report – about the financial quantification of companies' sustainability strategy, and management of sustainability opportunities, costs, and risks – that helps them in measuring their progress against sustainability practices compared to the industry average and the sector's best-in-class company on a global basis. This helps companies identify gaps in their sustainability performance and initiate improvements.

DJSI Membership logo: All the companies that are included in the index receive the DJSI logo for internal and external marketing and communication purposes SAM Group 2008:2a).

Sustainability Trends: The DJSI gives hints to companies and investors about the tendencies and events driving global supply and demand of sustainable products and services (DJSI 2006:1b).

Appendix 5 - Institutions Responsible for Managing the Index / ISE

- The São Paulo Stock Exchange (BOVESPA)
- Associations: the Brazilian Private Pension Fund Association (ABRAPP), the Association of Capital Market Investment Analysts and Professionals (APIMEC), and the National Association of Investment Banks (ANBID)
- NGOS: the Brazilian Institute of Corporate Governance (IBGC) and the Ethos Institute of Business and Social Responsibility
- The International Finance Corporation (IFC)
- The Ministry of the Environment
- The Center for Sustainability Studies at the Getúlio Vargas Foundation (CES/FGV).

In this context, the ISE Board is responsible for defining the scope of the index and approving the selected companies. Bovespa is responsible for calculating, managing, and divulging the index in real time. To evaluate the performance of companies in regard to the aspects of sustainability, the ISE board hired the Center for Sustainability Studies at the Getúlio Vargas Foundation (CES/FGV). The CES/FGV develops the questionnaire used to measure Brazilian companies' sustainability performance with financial support from the IFC – the private sector arm of the World Bank Group (Bovespa 2008:3-4b).

Appendix 6 – Description of Each Dimension of the ISE Questionnaire

General Dimension: This group aims to find if the companies' commitment to sustainable development in inserted in their strategies. It is also interested in determining companies' commitment against all forms of corruption.

Features of Products Dimension: This group looks at the impacts – such as death, chemical/psychic dependence, potential risks/damage to the health or physical integrity of consumers or third parties – that products can cause during production and consumption.

Corporate Governance Dimension: This group looks at the performance of management, the level of transparency, and the quality of audits and inspection, among others.

Economic Dimension: This group looks at the relationship between companies' strategic planning and projects the impacts on environmental-social aspects in the short, medium and long terms. (Bovespa4 2008:15-23).

Environmental Dimension: In this group, companies are called to respond for the impact of their actions on the environment in five aspects: renewable resources, non-renewable resources, raw material and inputs, transportation and logistics, and services/emissions.

Social Dimension: This group is concerned with the commitment of companies in regards to eradication of child labor and compulsory work, elimination of any type of discrimination, appreciation of diversity, and prevention of moral and sexual abuse, among others.

Appendix 7 – Description of the Technical Groups / CEBDS

Environmental Legislation: This group serves as a forum where companies can comprehend their role in promoting the social and environmental quality of life, explore the opportunities to formulate politics that cooperate with sustainable development, and keep posted about sustainable trends.

Energy and Climate Change: This group serves as a forum where companies can understand their role in the context of climate change. It assists companies in developing strategies to reduce risks and prepare them to face a market with restrictions to green house gas emissions.

Water: This group aims to contribute to minimizing the degradation of the quality of water. It works to ensure that this resource would be a limitless source of life and economic and social progress.

Biodiversity and Biotechnology: This group deals with issues related to biodiversity and biotechnology. It represents the associated companies interests when dealing with different groups of stakeholders.

Civil Construction: This group aims to direct companies in this sector to assume the role in promoting sustainability and boosting the discussion about good practices.

Sustainable Finance: This group assists financial institutions to assume their role in supporting sustainable development as well as stimulating the discussion of good practices in this sector.

Communication and Education: This group helps consolidate the idea of sustainable development and emphasize its potential in changing the reality of Brazilian companies.

Corporate Responsibility: This group encourages the sustainable development among Brazilian companies, highlighting its potential effect on companies' competitiveness and national sustainable development (CEBDS 2008:1b).

The objective of the technical groups is to discuss the sustainable practices between companies and government with the expectation to contribute to the reducing of global problems, such as climate change impacts, and the sustainable use of resources, among others. They also intend to go over issues related to specific practices of associated companies, such as sustainable finance – in case of banks – and sustainable construction – in the case of iron and cement industries. These groups also serve to line up practical corporate practices such as communication, education, and corporate responsibility.

Appendix 8 – Environmental Management System / ISO 14001

An EMS can be defined as part of the global management system of a company that involves a functional structure, planning of activities, definition of responsibilities, formalization of the process through procedures and necessary resources to continuously put into effect/ keep/ develop/ revise the environmental policy of a company (Ambientalistas 2004:1). In this context, the essence of an EMS is the following:

a) Establish an environmental management system that can be integrated into the global management system of companies;
b) Establish environmental policies that are appropriate for the reality of each company;
c) Identify the environmental aspects responsible for the most significant impacts, as well as find out the relevant legal requirements and priorities in order to establish suitable environmental objectives and goals;
d) Establish a structure to implement the environmental policy and to achieve the defined objectives and goals.
e) Facilitate the planning, controlling, preventability and correctness of decisions, and audit and revisal of activities in order to ensure that the environmental policies established can be fulfilled and the EMS is satisfactory.
f) Have the ability to adjust to changes.

Appendix 9 – Brazilian Institutions Responsible for Managing the Index / ISO 14001

In 1999, the Brazilian Association, Associação Brasileira de Normas Técnicas (ABNT), launched a Brazilian committee for environmental management called ABNT/CB-38. Its structure is very similar to the one launched by ISO, the ISO/TC 207 (Pombo and Magrini 2008:4). The role of this committee is to not only be responsible for the management of the Brazilian standardization process, but also to represent the Brazilian interests in the international meetings focused on the development of the ISE norms. The ABNT is also responsible for translating the ISO published norms. This committee is open for the participation of all the parts interested in the formulation of the ISO norms, such as companies, institutions, universities and non-governmental organizations. The CB-38 has the support of the Ministry of Science and Technology that makes feasible the participation in the most important international meetings (Pombo and Magrini 2008:5).

The Inmetro is the Brazilian accreditation organization in charge of providing credential to bodies operating assessment and certification in conformity with ISO 14001 standards in Brazil. According to Mendonça (cited in Pombo and Magrini 2008:5), the process of giving credentials to entities in Brazil to assess the environmental performance of Brazilian companies from different industries is very important to regulate and give credibility to the national and international commerce among different countries. Currently, the Inmetro has 20 entities that have the right to provide the certification assessment in accordance to the ISO 14001 (Table 16).

Table 16.

Credential Bodies of ISO 14001 in Brazil

Entities that have the right to provide the certification assessment in accordance with ISO 14001 in Brazil		
	Entities (20)	*Certificates Issued (%)*
1	ABNT - Associação Brasileira de Normas Técnicas	1.9
2	ABS Quality Evaluations INC.	4.7
3	BRTUV - Avaliações da Qualidade Ltda	7.2
4	BSI Brasil	0.6
5	BVQI do Brasil Sociedade Certificadora Ltda	27.6
6	Det Norske Veritas Certificadora Ltda – DNV	33.2
7	DQS do Brasil Ltda	8.3
8	Fundação Carlos Alberto Vanzolini – FCAV	8.9
9	Instituto Argentino de Normalización – IRAM	1.5
10	Instituto de Tecnología do Paraná – TECPAR	1.0
11	Lloyds Register Quality Assurance Ltda	0.2
12	RINA - Registro Italiano Navale S/C Ltda	0.4
13	SGS ICS Certificadora Ltda	4.1
14	TUV - TÜV Rheinland do Brasil	0.3
15	UCIEE - União Certificadora	0.1

This figure considered only the entities that have more then 0.1% certificates issued.

Source: From Pombo and Magrini 2008:6.

Appendix 10 – Other Motivations for Having ISO 14001 Certificate

The certification of ISO 14001 is relevant for companies that aim to achieve the following: (a) assure conformity with the company's stated environmental policy, and with ISO 14001:2004; (b) make a self-determination and self-declaration; (c) seek confirmation of the company's conformance by parties having an interest in the organization, such as customers and stakeholders; (d) seek certification/registration of the company's environmental management system by an external organization (ISO 2008:1c); (e) look for competitive advantage and aim to enter in the international market; (f) look for economic and environmental benefits, such as increasing efficiency in the production and recycling processes and reduction in the consumption of natural resources and energy (Pombo and Magrini 2008:2).

Appendix 11 – Suggestion to Implement an EMS / ISO 14001

The following steps are suggestions that should be adjusted according to the particularities of each company (AEP 2004:1b).

1. Before implementing an EMS, it is crucial that the high administration gets involved and understands the importance of developing an EMS under the requirements of ISO 14001. The support of the high administration is important to guarantee the commitment of putting into effect the EMS.
2. It is crucial to define the responsible people that will be in charge of the EMS. If a company already has a quality management system, it is important to assign the same responsible people in order to guarantee a synergy between these two systems. However it is important to share responsibilities in order to avoid a situation in which one single person would hold the responsibility for the whole system. It is interesting to also assign for example the people involved in the sectors whose EMS is being implemented.
3. The people assigned to carry the responsibility for the EMS, should participate in certified environmental management courses, establish a network with other companies and entities interested in the principals of the EMS in accordance to ISO 14001, and always keep themselves updated about potential trends regarding the improvement/changes/adjustments of the EMS.
4. Communication is very important in the implementation/improvement of the EMS. The people responsible for the EMS must pass the information to the

interested parties, such as operational people, in order to put into effect the changes/adjustments that are needed.

5. The implementation of the EMS must be preceded by a critical self-evaluation of the current environmental performance of the company as well as the aspects of the environmental legal conformity that are being met so far.
6. A determinant step in implementing an EMS is the planning. To guarantee that the EMS that is about to be implemented is appropriate to the companies' particularities, it is essential to have the planning generated through mutual consent among the parties involved.
7. The next step is to define the degree of significance of the environmental impacts in order to be able to evaluate and measure such impacts.
8. Definition of the environmental policy to be followed by this company along with the establishment of its internal and external communication.
9. Define objectives and targets for an environmental management program.
10. Define a program of operational and emergency control.
11. Define a monitoring plan in order to guarantee that the operational control is effective and the objectives and targets are being met.
12. Formalization of the documentation processes. In this case, all the procedures, operational instructions, and related documents must be formalized. If the company already has a quality management system it is recommendable that both systems are integrated into one single manual in order to avoid ambiguity in information and repetitive work.

13. In this phase, a company should be able to holistically define and update the descriptions of functions. Based of course on the previous processes of getting involved and familiar with the system and communicating, it is time to define the adequate operational arrangement. This is important to guarantee the abilities of the involved parties in terms of reducing the environmental impact of the company's activities.
14. Once the EMS has been implemented, an internal audit is recommended. Competent internal auditors should do this in order to check the degree of conformity of the system. All the non-conformities that may be found must be treated according to the established objectives and targets.
15. To guarantee the consistency and operation of the system, a global external audit, with appropriate credentials, is strongly recommended.
16. The last step is to contact a body operating assessment and certification for the ISO 14001 in the companies' country. This entity can evaluate the company's EMS and check if it is in conformity with the requirements of ISO 14001, if so, then the company would receive the ISO 14001 certificate. If not, then the company would be able to know the adjustments that must be done in order to meet the ISO 14001 requirements.

After implementing the EMS, companies can contact one of the bodies operating assessment and certification for ISO 14001. These bodies provide a questionnaire that must be filled out by the companies that want to be assessed. Once the bodies receive this document, they analyze it and then issue a proposal. Once the companies accept the

proposal, the bodies issue an external audit contract followed by the execution of the assessment. These previous procedures are important to ensure a confidentiality agreement related to the information and processes that are about to be evaluated. Subsequently, the hired entity will assess the EMS and evaluate its conformity with the ISO 14001 requirements.

Appendix 12 – Charts of Comparison / Sustainability Indices

A) "Why" Chart 1

Comparison of the five Sustainability indexes - (Why)			
Index	*Need to launch the index*	*Launched date*	*Purpose*
DJSI World	Suficient demand for a benchmark for sustainability index. Based on the growing role of sustrainability in European politics.	1999	Be a reference point in the context of sustainability. Provide performance baseline and investment universe for financial products based on the concept of sustainability. Serve as a bridge between companies and investors that want to profit from sustainable performance.
ISE	Inspired by the good results of DJSI. Created from the demand of national financial industry that was looking for a benchmark to serve as reference to Bovespa's ethical financial products.	2005	Serve as a benchmark for socially responsible investment (SRI). Inform potential investors about sustainability strategies of companies listed in Bovespa.
CEBDS	Associate of the World Business Council for Sustainable Development. Aimed to formulate a new concept for the economic activity in Brazil, by effectively helping companies to expand the sustainable development among their practices and their relationship with society.	1997	Create an environment in which companies and government can exchange information, attitudes, and ideas. Serve as a bridge for the dialogue between these interested parties concerned in achieving a sustainability path.
ISO 14001	Inspired by the Conference in Stockholm in 1972 (human environemnt issues) and by the Brundtland Report (sustainable economic development issues). ISO recognized the necessity to normalize tools of environmental management.	1996	Provide a set of specific requirements to help companies implement an EMS (focused on company's operational process)capable of developing and implementing policy and objectives related to legal and other requirements, and information about significant environmental issues.

Comparison of the five Sustainability indexes - (Why)			
Index	*Objective*	*Mission*	*Foundation*
DJSI World	Track the stock market performance of the top 10% - out of 2,500 companies of the world's leading corporate sustainability companies in the DJSI World. Increase companies competitive reputation advantage.	Produce a global, flexible, and investable index to help investors benchmarking the performance of their investments.	Transparency. Corporate assessment joins corporate governance, economic,and social criteria. Best-in-class approach: questionnaire evaluation.
ISE	Promote good practices among Brazilian companies. Satisfy te demand for SRI funds. Encourage companies listed on Bovespa to put sustianability as an integrate component of their strategies.	Be composed by a set of companies that are well known by their sustainability strategies. Be a reference and stimulate sustainable practices in Brazil, and motivate the creation of social responsible investments funds. Gain credibility in the market and be replicable.	International Triple Bottom Line concept. It also adds performance indicators for general aspects of the company, characteristics of products, and corporate governance. Clusters analysis: questionnaire evaluation
CEBDS	Offer a trustful platform for companies to exchange information, experiences, and knowledge about sustainable practices. Facilitate the development of partnerships. Provide information, directions and tools to help companies implement, measure, and communicate their efforts toward sustainable practices. Represent companies in the debates with the Government and stakeholders. Communicate the good practices. Provides projects and partnerships to stimulate the implementation of sustainability among its members.	Conciliate the three dimensions of sustainability – economic, environmental, and social – and integrate the practices and the principles of the sustainable development in the business context.	Sustainable Development concept. Environmental, economic, and social dimensions are interlaced and inseparable. The corporate sustainability from this index perspective is based on the concept of economic performance, eco-efficiency and corporate social responsibility. Represent corporations in the dialogue about sustainable development with public institutions and society.
ISO 14001	Help businesses from different industries to protect the environment, prevent pollution, and improve their overall environmental performance, which are all shaped in the elements of the proposed EMS.	Provide an EMS framework that can be implemented by a wide variety of organizations–whatever their current level of environmental maturity– to encourage a continuous improvement of their environmental performances. Incentive companies to have a commitment to compliance with applicable environmental legislation and regulations.	EMS as a tool to monitor the environmental performance of companies from different industries. PDCA approach (Plan, Do, Check, and Act).

Comparison of the five Sustainability indexes - (Value Created)		
Index	*Concept of sustainability*	*Competitive Advantages*
DJSI World	Generate a long-term value to shareholders by managing sustainability related opportunities and risks through an outstanding strategy.	Sustainability investing, value creation, reputation and brand, benchmark feedback, DJSI World member logo, sustainability trends.
ISE	The long-term committement of companies with higher standards on corporate governance, economic, environmental and social performance.	Credibility, reputation, ISE logo (excellence), advantage over competitor in the same industry that is not listed on the index.
CEBDS	Based on the idea of sustainable development that conciliate economic, environmental, and social necessities without undermining the future demands of any of these three dimensions. The sustainable development promotes innovation, new technologies, and new markets for companies interested in taking the sustainable path to achieve global competitiveness. The adoption of sustainable development signifies vision in a long run and endurance of companies' businesses.	Maintain a superior position as social and environmental responsible companies. Influence public politics issues related to sustainable development. Benefit from the networks that this index provide. Share/exchange the best practices/information with national and international organizations. Have the latest information about the corporate sustainable development trends. Access to the top information referent to corporate social responsibility, eco-efficiency, climate change, biodiversity, and biotechnology. Educate and enable executives to face the challenges imposed by sustainability. Give visibility to the innovate actions undertaken by the associated companies. Ensure the existence of the companies in a new worldwide economic standard.
ISO 14001	Focuses on the environmental dimension (operational processes). It was based on the idea of sustainable development suggested by the Brundtland Report, and on the human environment issues mentioned at the Conference in Stockholm. It believes that the improvement of environmental performance through the implementation of an appropriate EMS is likely to bring economic and social benefits in a long run. Trend: new set of certificates through the implementation of environmental (ISO14001), quality (ISO9000 and OHSAS18001) and social (SA8000) management systems are likely to be integrated into companies' global management system. Thus, associating the three sustainability dimensions.	Fortify company's image and the participation in the market. Preserve natural resources and energy. Develop a wellstructured production process capable of improving production efficiency and environmental performance. Potentialize results: profits. Development of products and technologies more environmental friendly. Reduce costs. Better control of the environmental risks. Improve communication and work conditions. Meet the certification criteria of clients. Improve companies and society awareness about the importance of an environmental friendly behavior. Add value in the relationship with internal and external interest parties, including employees, shareholders, customers, suppliers, organizations of environmental control and community.

C) “What” Chart

Comparison of the five Sustainability indexes - (What)				
Index	*Review*	*Nr of listed companies*	*Identification of companies*	*Costs*
DJSI World	Annual/quarterly - based on the DJWGI investable stock universe. Selected companies are the top 10% of the leading sustainability companies in terms of long term economic, environmental and socal criteria. Ongoing review (extraordinary corporate actions).	320 from 27 countries. Eight are from Brazil.	Be a component of DJWGI. Have investable stocks universe – market capitalization - consisted of the largest 2,500 companies. Have a free float mkt cap of 1billion US$. 7 Criteria: Sector Classification, Corporate Sustainability Assessment, Ranking within Sectors, Eligible Sectors, Eligible Companies, Component Selection, and Market Capitalization Coverage. There is a subset indexes excluding companies that generate revenue from alcohol, gambling, tobacco, armaments and firearms, and adult entertainment.	No cost for invited companies.
ISE	Annual - From a total of 394 companies listed on BOVESPA only 40 (max.) are chosen for the index. Participation of companies, specialists and the public in the ISE criteria of evaluation.	30 Brazilian companies.	Must be listed on the stock market of São Paulo – Bovespa. Have a liquid assets among the 150 most traded over the 12 months prior to the evaluation. Have the shares traded in at least 50% of all trading sessions in the prior 12 months. Companies must satisfy the sustainability criteria of the annual questionnaire. Positive screening (no exclusion of any sector).	Registration tax R$ 3,000 or approx. 1,630 USD. Annual tax of R$ 10,000 or approx. 5,435 USD for the right to use the ISE's logo. (Rate: 1.00 USD = R$1.84).
CEBDS	Biannual report in which the associated companies display their sustainability practices and strategic vision. Focused on the performances of the associated companies only. Participation is optional.	50 Brazilian companies.	The CEBDS can contact companies (in this case they are the leading ones in their sectors) or companies can contact the index and submitt the registration form. In both cases, the CEBDS does a background checkup, research, (indications).	Montly fee, (the same for all members). But its value is not divulgated.
ISO 14001	ISO14001:1996 / ISO 14001:2004 The certificate is valid for 3 years. Periodical audits (semesterly or annual) by the certified bodies are required. After 3 years a recertification is required and a new cycle of 3 years starts.	More than 2300 Brazilian companies.	It is voluntary. It can be applicable to any company that desires to establish, implement, maintain and improve an EMS. Four motivations: reactive, internal, pro-active, and legal. Four dimensions of benefits: production, financial, and market benefits, and benefits related to society.	Varies according to the dimension, complexity, and the type of system implemented by companies.

Comparison of the five Sustainability indexes - (Who)						
Index	*Markets*	*Current mkt cap*	*(Investable stock) universe*	*Eligible (stock) universe*	*Selected universe*	*Institutions involved in the creation/management of the index*
DJSI World	World market. First Sustainability Index in the world.	Approximately 485 bi USD (R$ 927 billion). (Rate: 1.00 USD = R$1.84).	DJWGI: 2,500 companies.	DJSI World: 2500 companies.	10% of the eligible universe.	Dow Jones Indexes, STOXX Limited, and Sustainable Asset Management (SAM).
ISE	Brazilian market. First Sustainability Index in Latin America.	Approximately 202 bi USD (R$ 372 billion). (Rate: 1.00 USD = R$1.84).	BOVESPA: 394 companies.	ISE: 120-130 companies.	1/3 out the eligible universe Maximum of 40 companies.	BOVESPA,ABRAPP, APIMEC, ANBID, IBGC, the Ethos Institute of Business and Social Responsibility, IFC, The Ministry of the Environment, CES/FGV.
CEBDS	The first enterprise advice to strongly encourage the sustainable development into the corporate perspective in Brazil.	40% of Brazil's gross domestic product (GDP).	Brazilian Companies.	Usually the ones that are large and leaders in their sectors.	There is not a fixable number of companies that can participate.	WBCSD, well-known academic institutions and organizations and NGO's partnerships. Associated companies preside the 8 technical chambers: Environmental Legislation Energy and Climate Change, Biodiversity and Biotechnology, Sustainable Finance, Communication and Education, Corporate Responsibility, Water, and Sustainable Construction.
ISO 14001	World Market	Not relevant	The world market. Applicable to any company. For the purpose of this research the Brazilian market will be evaluated.	Applicable to any companiy. But usually large and medium companies are likely to have the ISO 14001 certificate.	There is not a fixable number. One company can have more than one certificate.	In Brazil: ABNT, INMETRO and 20 certified bodies.

Comparison of the five Sustainability indexes - (Who)			
Index	*Most representative sector*	*Particpation of the companies*	*Exclusion of companies*
DJSI World	Financial sector: 22% Consumer goods: 13% Oil and Gas 11%	The Corporate Sustainability Assessment of SAM Research has a set of criteria and weightings to classify the invited companies. The assessment evaluates companies opportunities and risks from economic, environmental and social developments. Companies have to fill in the questionnaire and submit it along with required documents. Each question has a score. The total score of companies are associated with their answers to each question. Companies are chosen according to their total scores and industry groups.	Excluded if no longer satisfies the identification requirements of the index.
ISE	Financial sector: 54% Utilities: 14% (electric energy) Steel Industry: 8%	Companies have to answer the questionnaire and submit it with required documents. The ISE board choses the companies that are better classified in the aspects of relationship with employees, suppliers, and community, corporative governance, and environmental impact of activities.	Excluded if no longer satisfies the identification requirements of the index.
CEBDS	It is not relevant for the CEBDS statistics. For the CEBDS the participation in the technical chambers are more relevant than the sector distribution of the participants.	Companies have to fill in a registration form, pay a monthly fee and participate in one or more technicals chambers.	Companies can be excluded if they do not pay their monthly fee for 2 consecutive months or if they behave contrarily to the CEBDS principles.
ISO 14001	Automotive 14% Petrochemical 9% Chemical 8% Services 8% Data from the Brazilian market.	Companies have to develop an EMS. Once they do they pay the certified entities in their countries to assess the EMS and check if the EMS is in accordance with the requirements established in ISO 14001. If so they will receive the ISO 14001 certificate. If not, adjustments must be made to get the certificate.	Certificates can be suspended or cancelled if: companies do not do periodical audits; don't satisfy the index requiremente; don't implement the necessary corrective actions.

E) "How" Chart

Comparison of the five Sustainability indexes - (How)			
Index	*Intrument for the evaluation of companies' performances*	*Questionnaire / Report/Audit*	*Classification of companies*
DJSI World	Questionnaire (including reports, and other sources of information), publicity available infromation, personal contact, and corporate sustainability monitoring. External report by Deloitt Touche.	Questionnaire - SAM's methodology. Two major components: general sustainability criteria and industry specific sustainability issues (differ b/t sectors). Three dimensions: economic, environmental, and social.	"Best in class" approach: The classification of companies is associated with their scores. Companies are ranked from the highest to the lowest scores.
ISE	Questionnaire (along with required documents to support answers).	Questionnaire - CES/FGV's Methodology Divided in six dimensions: general aspects, features of products, corporate governance, economic, social, and environmental. Economic, environmental, and social dimensions have a set of four criteria: political, management, performance and legal issues.	"Cluster analysis." It helps identifying groups of companies w/ similar performances in each dimension.
CEBDS	It does not make individual evaluation of their associates' performances.	There is a biannual report that serves to present the performance of listed companies. But participation in this report is not mandatory. Companies are responsible by displaying their own information. The index just publishes it.	The index does not make individual evaluations of members' performances.
ISO 14001	The companies' EMS. ISO 14001 does not lay down levels of environmental performance. Because of that it can be applied in any company. It provides a strategic approach to companies' environmental policy, plans and actions.	Companies interested in having the ISO14001 certificate have to contact the certified entities that would perform an external audit of the companies' EMS.	Companies are not ranked. The outcome of the audit if positive, will result in the receivement of the ISO certificate.