



Measurement and analyses of biodiversity conservation actions of corporations listed in the Brazilian stock exchange's corporate sustainability index



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ABSTRACT

Anthropization of natural areas accelerated biodiversity loss and climate changes. Thus, it is imperative that all economic sectors adjust to sustainability precepts, collaborating to the maintenance of ecosystems. Therefore, we questioned: Are sustainable companies developing sufficient actions to preserve and/or conserve biomes where they are installed? To answer, we estimated the biodiversity impacts on the Brazilian biomes developed by 11 companies which's participated, uninterruptedly, in all ISE portfolios between 2005 and 2014. We used the LIFE certification methodology (Lasting Initiative for Earth) to qualify and quantify the minimum externalities, and mitigations of each corporation. Ten corporations generated 96% of total externalities, while mitigated only 10%. One financial institution did not develop mitigations, and one company of chemical/petrochemical sector described biodiversity in Brazil as irrelevant and insignificant. Only company of paper/cellulose mitigated their externalities. This company developed 77% of total scores calculated, by creating 41,600 ha of Protected Areas. Thus, the forest sector mitigated 30% of total externalities calculated for the 11 companies. That is, the organizations analyzed here demonstrated that they do not yet internalize the importance of promoting biodiversity conservation actions as a way to minimize their impacts. The LIFE certification methodology can be considered an additional tool for environmental management, indicating areas in which a company has the potential to improve management through the calculus of partial results of externalities. Also, the methodology allows for the strengthening of transparency of sustainability of companies on the Brazilian Stock Exchange (B3) and society as a whole, once the mitigation of environmental impacts through biodiversity conservation actions contributes to promoting the resilience and resistance of ecosystems, allowing the maintenance of ecosystem services, generating social welfare, economic consciousness and environmental equilibrium.

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1. Introduction

The world production of the agriculture, industry, and energy sectors is increasing to meet the growing demand for goods and services. These three economic sectors are the most responsible for emissions of greenhouse gases, as well as contributions to global warming, climate changes, and biodiversity loss (IPCC, 2014).

The production of goods and services is directly and indirectly

dependent on benefits provided by ecosystems, through ecosystemic services (Sukhdev et al., 2010). However, the current models of industrial production and the format of natural resource exploitation are realized without respect to the resilience and resistance of ecosystems, causing environmental damage. Thus, it is imperative that all economic sectors adjust to sustainability precepts.

Notwithstanding, after the advent of the concept of sustainable development in 1987, several economic sectors began to develop ways to minimize their environmental impacts. Also, many conferences were held around the world with strong agreement around environmental advances, such as the 'Paris Agreement' in 2015, which promoted affirmative policies to mitigate the harmful

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effects of global warming to the environment, with biodiversity as the direct beneficiary (UNFCCC, 2015).

Accelerated deforestation associated with agricultural, industrial and urban expansions, without correct planning, has caused direct and negative impacts on natural areas. Thus, biodiversity loss and global warming accelerate the changes in biogeochemical cycles, modifying and minimizing the resilience and resistance of ecosystems to climate changes (Chapin III et al., 2000).

According to Marcondes and Bacarji (2010), since the Brundtland report in 1987, new economic, social, and environmental paradigms have been established around the world. Thus, a discussion of sustainable development has occurred with the different sectors of society, especially from an economic perspective, including the adoption of the form of transparent management and also the disclosure of social and environmental reports.

The financial sector, particularly the stock exchanges, began to encourage and promote sustainable development in companies and also for stakeholders, by divulging and disseminating corporate sustainability indexes. These lists show the businesses that have the most sustainable practices among all participating companies of the same stock exchange after an internal selection process. These sustainable lists give an investor assurance that listed companies have environmental, economic and social advantages, such as improved environmental performance, compared with others that are not listed.

In 2005, the Sao Paulo Stock Exchange, BM&FBOVESPA, currently¹ B3 (Brasil, Bolsa, Balcão), was the fourth stock exchange in the world to release a Corporate Sustainability Index (ISE – Índice de Sustentabilidade Empresarial – in Portuguese), after the USA (1999), the UK (2001) and South Africa (2003). To enter or to stay in the ISE, open capital companies need to participate annually in the selective process developed by B3 (Brasil, Bolsa, Balcão). Thus, only enterprises that have sustainable management that meets the requirements drawn up can take part in this list. The selective process is prepared and certified by the Sustainability Research Center (GVces) at Getulio Vargas Foundation's Business School (FGV-EAESP), being the B3 is responsibly to the calculus of admission and to the technical management index.

Only companies that have serious commitments to social, economic and environmental fields in their administrative systems can remain on this list, due to the great competition between enterprises to enter this prestigious list in the face of increased market visibility for companies' participation (Rossi, 2009).

In 2014, B3 launched the 10th ISE list, containing 40 selected companies among 200 with higher scores in the selection process. These 40 companies represented 50% of the total market value of the shares traded on the B3. Nevertheless, 11 companies are listed for the 10th time consecutively, representing 35% of the market value of the portfolio, or 17.5% of the total market on the Sao Paulo Stock Exchange.

To integrate with and to continue to be listed on the ISE, the selected management systems need be regularly analyzed, enabling improvement of the environmental parameters in the administration and minimizing negative externalities. This method permits the associated ecosystem to continue to provide ecosystem services. According to the precepts of the Paris Agreement prepared in the COP-21, biodiversity conservation actions should be developed in ecosystems that need to be recovered, conserved and perpetuated.

In this scope and with the focus directed toward mitigating

impacts on biodiversity, the LIFE Institute (Lasting Initiative for Earth) stands out. This Institute is one organization from the third sector recognized by the United Nations through the Secretariat of the Convention of Biological Diversity and Environmental Ministry of Brazil (MMA).

While continuously improving, the Institute developed an environmental certification methodology: the "LIFE certification." This methodology supports and recognizes companies, from any size or sector, that develop biodiversity conservation actions as a way to mitigate their impacts (Instituto LIFE, 2012). Also, this certification methodology allows the qualification and quantification of the major environmental impacts of the productive activities of any organization, with global applicability (Instituto LIFE, 2012). The LIFE methodology also indicates ways in which to mitigate these impacts, minimally, through a set of voluntary biodiversity conservation actions.

This methodology of certification still is the unique in the world that measures biodiversity impacts occasioned by companies and, also, indicates what is necessary for the company mitigates or minimize their impacts. Reale et al. (2016) demonstrate, that companies can use this methodology as a diagnostic tool to analyze their Environmental Management System, calculating, in the same scale of scores, how much biodiversity conservation actions will be needed to minimize and/or mitigate their impacts on nature, specifically focused on biodiversity conservation.

Under these circumstances, this study aimed to estimate the biodiversity impacts on the Brazilian biome by 11 companies that participated, uninterruptedly, in all ISE portfolios between 2005 and 2014. Therefore, these analyses consist of evaluations of whether companies have effectively contributed to the conservation, recuperation, and maintenance of ecosystems and ecosystem services through the development of biodiversity conservation actions in the biomes in which each company operates.

The hypothesis here is that the LIFE methodology might be considered an additional tool to manage systems, to help businesses, via the mitigation of environmental impacts by developing biodiversity conservation actions, to strengthen their sustainable positions on B3, as well as with other stakeholders from the market or society.

Finally, the primary objective of this study is to evaluate whether the selected companies listed on the ISE portfolio have contributed to conservation, restoration, and the maintenance of ecosystems and ecosystem services in the biomes in which they operate through biodiversity conservation actions.

2. Material and methods

2.1. Data collection

Data were collected from the 2014 environmental reports disclosed by 11 open capital companies selected for this study. We analyzed only enterprises that participated in all of the ISE's portfolios between 2005 and 2014 without interruption.

According to Beato et al. (2009), different companies of different sizes and sectors published sustainable reports to disclose their main results in economic, social and environmental fields, making their management as transparent as possible.

The socio-environmental reports from these companies are prepared annually, and they are public documents posted on the Internet websites of these enterprises. The reports are disclosed according to the environmental politics of the company in order to disseminate the annual results of business management for civil society, shareholders and all other interested parties.

All reports evaluated in this study are in agreement with the guidelines of the GRI-4G (4th version of the Global Reporting

¹ In March 2017 the securities, commodities and futures exchange activities of BM&FBOVESPA were combined with the activities of CETIP, a provider of financial services for the organized OTC (over-the-counter) market.

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