



## **Environmental Accounting as a Cornerstone of Corporate Sustainability Reporting**

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**Abstract:** The major objective of this paper is to stress a role of environmental accounting in developing management's strategic initiatives in the field of environmental protection. The socially responsible behavior of a company implies undertaking various activities for prevention, removal and minimizing the harmful effects on the environment. Such a responsible strategic approach ultimately leads to numerous cost savings, improvement in profitability and reputation and finally enables corporate sustainable development. In order to achieve its goal, this research will be methodologically based on the qualitative approach of published articles' content analysis and the analysis of corporate practice in designing environmental accounting systems that allow better identification and control of costs and benefits related to environmental protection activities. Analysis of different accounting practices in producing financial and nonfinancial environmental information requires distinction between environmental financial and management accounting, given the fact that they create different types of information intended for internal and external users. Management needs such information for the purposes of identification and control of environmental protection costs, making decisions about the more efficient use of resources, projecting costs and benefits of further activities and attempts to increase company's value through a socially responsible behavior. The expected results of this research should confirm the premise that increased awareness of the need of environmental protection and achieving sustainable development motivates companies for more frequently producing obligatory and voluntary external and internal reports about their environmental activities. At the same time, environmental accounting is supporting these initiatives, but we expect that in future new tools will be developed that will improve the quality and scope of its informational offer, which may be the area of potential for further research.

**Keywords:** Environmental financial accounting (EFA), Environmental management accounting (EMA), Environmental protection, Sustainable development

### **1. Introduction**

Increased awareness of the need of environmental protection has initiated companies to pay much greater attention to publishing reports on their efforts and activities with social and environmental impact. There has been a widespread opinion lately that companies, like individuals, represent members of society that acquire benefits from it, so at the same time, they have an obligation to "pay back" the society in the same way (ACCA, 2012). Therefore, socially responsible corporate behavior implies undertaking numerous activities for environmental protection and improving conditions in a wider social community (through the jobs created, training of employees, charities, etc.). Such a responsible strategic approach in long-term should enable corporate sustainable development and increase of company's value. In other words, it means that economic development is no longer sufficient per se and that it must be followed by protection of natural resources and environment so that companies could achieve a long-term sustainable development and demonstrate responsibility to future generations. Therefore, companies, as major environmental pollutants, begin with the more intense publishing of mandatory or voluntary reports on their activities with environmental influence. A new and broad reporting concept like this, which is based on satisfying a wide array of social interests, implies that expenses associated with human resources and environmental protection cannot be considered a cost, but an investment in the future and a source of innovation (Kamieniecka et al., 2013).

As a natural consequence of increased reporting requirements, environmental (green, eco) accounting has been recently developed as a tool for preparing environmental reports required by various internal and external stakeholders. A basic challenge faced by environmental accounting refers to finding ways to go beyond traditional accounting practices and create adequate tools for preparing financial and non-financial information on activities with environmental impact, which are needed for decision making. The main objective of this research is to point out the role of environmental accounting in improving the quality of corporate environmental reporting and achieving a long-term sustainable development.

## **2. Literature Review**

Relevant literature shows that today the environmental accounting has a significant role in corporate sustainability reporting. That role has been growing because of increased international and national regulation on environmental protection, that forced largest companies to prepare more and more demanding reports of sustainability of their businesses (ACCA, 2012). These reports can be mandatory or voluntary prepared, but voluntary nature of corporate sustainability reports carries the risk of selective and incomplete disclosing information on the effects of company's activities.

In this sense, Nickell (2014) advocate the need for better regulation of the content of voluntary reports, in order to enable comparability and increase responsibility for presented information. For this purpose, accounting can serve as a most important generator of relevant information. According to Gray (1993), environmental accounting can broadly be defined as a set of rules and techniques for measuring effects of firm's environmental activities and incorporating the information obtained in decision-making and the reporting system. Given the fact that environmental accounting has a capability to provide both financial and nonfinancial information there is a need for separating environmental accounting into the Environmental Financial Accounting (EFA) and the Environmental Management Accounting (EMA).

EFA mainly focuses on reporting the costs of environmental liabilities and other financially material costs, revenues, and assets, which meet the recognition criterion (Stanciu et al., 2011). However, requests of external stakeholders for disclosing environmental information caused a significant change in financial reporting practice. Particularly, investors lately need to be better informed about corporate environmental activities, in order to protect their investments from future costs that might occur as a consequence of current environmental risks. Thistlethwaite (2011) states that global financial markets could be harnessed to improve the sustainability of the global economy, by valuing firms on the basis of their environmental behavior and costs, which may motivate companies for better environmental reporting in return for access to capital markets.

Bracci (2013) analysing the IFRS solutions and concluding that they indicate a limited possibility for reporting for most environmental issues, so they are bounded in the notes to financial statements or other descriptive parts of the annual report, as a type of qualitative information. In that way, conventional financial accounting does not seem to be suitable for environmental reporting, because it is not primarily designed to capture environmental impacts of firms' activities. Therefore, it should not be surprising that financial accounting is often recognized as a system which has little to do with environmental issues or, even worse, as a practice whose "reported profit figures in financial statements lies at the very heart of environmental crisis" (Gray et al., 2002). Therefore, Negash (2012) states that global IFRS can be used as a device for monitoring the corporate environmental behavior, but it must be coupled with radical changes in the conceptual framework and new definitions of assets, liabilities, and profits.

From the other hand, EMA is a system of tools and techniques aimed at identifying and measuring environmental impacts of corporate activities from the cost-benefit perspective. It should help managers make better environmental decisions at strategic, operational and product levels, by giving them relevant information about costs, benefits and overall consequences of undertaken or planned activities (Medley, 1997). There is also a suggestion that EMA should be focused on both physical information on the flow of inputs (materials, energy) and outputs (products, waste, emissions), as well as monetary information on related costs and benefits (IFAC, 2005).

However, Gadenne (2002) thinks that measurement of environmental costs in monetary terms can also be difficult, given the non-financial nature of the most of the environmental data, which is why the use of inadequate measures for quantifying physical inputs and outputs is a serious limitation of traditional EMA practice. Therefore, some researchers suggest that usage of recently developed strategic cost analysis tools, such as life cycle costing, activity-based costing (ABC), full cost accounting or value chain analysis may expand the scope and improve the quality of environmental cost

information, as opposed to traditional measurement techniques (Debnath, 2011).

Regardless of the fact that there are no external reporting requirements specifically associated with EMA, its information is widely used in companies for preparation additional voluntary reports aimed at external users. Kamieniecka (2013) states that they should be based on clearly defined environmental objectives and enhanced systems for monitoring the progress of their achievement, through precise measurement of environmental costs and other performances. In that sense, the role of EMA is to assist in management in monitoring the development of corporate environmental behavior toward sustainability.

### **3. Methodology**

This research will try to provide answers to the following basic questions:

What kind of accounting information is appropriate for reporting on companies' activities with environmental impact? Do current accounting practice, and quality of produced information satisfy the need for better informing the internal and external users? Does environmental accounting include sufficient volume of information in official financial statements, considering the concern of investors about future environmental risks? Do performance measures for environmental cost-benefit analysis satisfy actual management needs?

In order to provide the answer to research questions mentioned above, investigations of the environmental accounting's role in achieving corporate sustainability will be based on interpretive methodology approach. It includes observation and content analysis of existing research papers in the literature, along with the analysis of the current corporate environmental accounting practices. Reliance on secondary contextual data and the use of qualitative methods is necessary in order to employ a meaning-based technique of data analysis, which allows us more options in the process of description and understanding phenomena of environmental protection and sustainable development. It also enables examination of research problem from close range, which overcomes limitations of large sample studies, which often hide issues that can be better identified and explained by focused qualitative studies.

### **4. Result and Discussion**

The data used in this analysis are secondary contextual data that is a result of literature research. The qualitative methods are used to explain growing significance of environmental accounting in preparing of ever demanding sustainability reports of companies worldwide.

#### **4.1 The New Role of Accounting in Corporate Sustainability Reporting**

Given the fact that in their efforts to increase profit and spread business activities, companies adversely affect the environment through environmental pollution and consumption of limited natural resources, their responsibility cannot be traditionally limited only to stakeholders like investors or tax authorities. Corporate economic development in new circumstances cannot be sufficient objective by itself, so in a recent couple of decades paradigm of sustainable development has proclaimed to comprise accepting broader responsibility to the social community, natural environment and, even, future generations, which will one day require "accountabilities." Accordingly, economic development, which has ultimately led to devastating consequences for the environment, has modified into the concept of sustainable development, which should enable the future economic success of companies to be followed by eliminating negative environmental effects, preservation of natural resources and improving the quality of life.

Therefore, mandatory or voluntary reports on the social and environmental impact of companies' activities, which have increasingly been published in the past years, are in most cases referred to as Corporate Sustainable Reports (CRS), although they could be found in wide range of other terms. Mandatory reports (or selective information within annual reports) arise as a result of increased international and national regulation on environmental protection, formulated by national governments and international bodies, such as EU and UN, in the form of laws, directives or guidelines. On the other hand, companies more often publish entirely voluntary reports about their environmental impacts and sustainable development, realizing that they have a positive influence on the public perception of corporative image and reputation. Research has shown that voluntary reports are most often prepared by large and politically sensitive companies (pertaining to oil, gas or petrochemical industry), the activities of which have a highest environmental impact (ACCA, 2012).

Corporate sustainability reporting can be a part of annual reports, independent reports, company websites, etc., but recently many large companies publish independent (separate, stand-alone) reports focused on environmental and social issues. It should be noticed that preparation of stand-alone reports is often an expensive and complex process considering the problems in using different narrative and numerical (financial and nonfinancial) measures of performance. This paper will comprise only the environmental aspect of sustainability reporting, which is probably the most important, given the consequences of raising pollution, climate changes and the lack of planetary resources. In that context, the subject of reporting might be any activity affecting environmental conditions through prevention, removal or minimizing the harmful effects. Those activities refer to resource consumption, holding of inventories, the efficiency of production and distribution, waste disposal, emission of hazardous substances, product disposal and recycling, noise, radiation, sanitation of industrial sites, etc.

It is important to stress that voluntary nature of corporate sustainability reports carries the risk of selective and incomplete disclosing information on the effects of company's activities. Therefore, some authors advocate the need for better regulation of the content of voluntary reports, in order to enable comparability and increase responsibility for presented information (Nickell et al., 2014). In this sense, corporate sustainability reporting should indicate how companies prevent, remove or mitigate harmful environmental influences caused by their activities and what they intend to do about it in the next period. In the field of the better shaping of voluntary (non-mandatory) environmental reports of significant use are the efforts of numerous non-profit and non-governmental organizations, to prescribe comprehensive frameworks for corporate sustainability reporting and specify how companies should disclose numerous environmental and social issues. Among such organizations particularly noteworthy are GRI (Global Reporting Initiative), SRG (Sustainability Reporting Guidelines) and International Organization for Standardisation with a series of ISO standards.

The emergence of environmental reporting has naturally brought entirely new challenges to accounting. It had to renew its informational offer and create new reporting approaches and techniques, for support of new reporting concepts to be provided. Environmental accounting can broadly be defined as a set of rules and techniques for measuring effects of firm's environmental activities and incorporating the information obtained in decision making and the reporting system. As such, it implies all accounting areas affected by the companies' response to environmental demands (Gray et al., 1993). Given the fact that environmental accounting can provide both financial and nonfinancial information dedicated to internal and external users there is a need for separating environmental accounting into the Environmental Financial Accounting (EFA) and the Environmental Management Accounting (EMA).

## **4.2 Environmental Financial Reporting**

Generally, EFA is directed toward serving external users by preparing and disclosing information about environmental issues within the annual report (as a part of financial statements or their notes) or by creating specific environmental reports. EFA mainly focuses on reporting the costs of environmental liabilities and other financially material costs, revenues, and assets, which meet the recognition criterion (Stanciu et al., 2011). However, requests of external stakeholders for disclosing environmental information caused a significant change in financial reporting practice. In the past decades, pressures on companies to perform responsible environmental activities and report about their effects originate from all sides.

For example, customers are interested in biodegradable products that fulfill ecological standards or expect from a company to take responsibility for product disposal and recycling, competition has an indirect influence by performing better environmental protection activities, governments and local communities expect environmental protection rules to be strictly followed. In that sense, firms with extensive environmental disclosures may benefit from improved relationships with stakeholders, reduced regulatory risks, reduced costs of capital and improved overall reputation (Nickell, 2014). Despite the importance of the requests mentioned above, we believe that investors in financial markets today represent stakeholders with the strongest influence on EFA practices. Particularly, investors lately need to be better informed about corporate environmental activities, in order to protect their investments from future costs that might occur as a consequence of current environmental risks. The assumption that global financial markets could be harnessed to improve the sustainability of the global economy, by valuing firms by their environmental behavior and costs, may motivate companies for better environmental reporting in return for access to capital markets (Thistlethwaite, 2011).

The interaction between accounting regulation and financial markets has significant implications for the way in which financial markets value corporate environmental performance. In that sense, International Accounting Standards Board

(IASB) is an important source of authority whose solutions contained in International Accounting and International Financial Reporting Standards (IAS/IFRS) affect and shape the mechanisms of companies' market valuation. Harmonization of financial reporting rules and worldwide acceptance (a limited or full-scope) of IFRS provide a chance for creating global comparability of environmental reporting practices (Thistlethwaite, 2011). However, analysis of IFRS solutions indicate a limited possibility for reporting for most environmental issues, so they are bounded in the notes to financial statements or other descriptive parts of the annual report, as a type of qualitative information. In that way, conventional financial accounting does not seem to be suitable for environmental reporting, because it is not primarily designed to capture environmental impacts of firms' activities (Bracci et al., 2013).

Although there is still no IAS/IFRS explicitly focused on environmental issues (exception are specific interpretations, like IFRIC 1, 2 and 6), many problems related to recognition and measurement of specific environmental costs and liabilities are treated in detail in several standards. For example, IFRSs pay detailed attention to obligations referred to property sanitation, disposal of electronic equipment or capitalization of environmental costs. Environmental liabilities represent obligations resulting from historical pollution events, that cause costs of cleaning up the contaminated sites, wastewater treatment, decommissioning of plants, violation of environmental rules. According to IAS 37, firms are obliged to create provisions for these costs if there is a legal obligation or a long-term commitment of the company towards the reduction, prevention or reparation of environmental damage, like in the case of a long-term dismantlement of the nuclear power plant (Bracci, 2013). However, recognizing the costs of environmental liabilities is followed by difficulties and uncertainty, because they are often contingent according to the options present in pricing inputs (different specific requirements to clean-up environmental pollution under different national laws) and the availability that future event will confirm a firm's loss. Such an accounting treatment of environmental liabilities has strongly been criticized in the last decade by different stakeholder groups because it leads to underestimation and underreporting of the environmental costs and liabilities (Thistlethwaite, 2011).

Unlike environmental liabilities which represent causes of past events, environmental risks represent effects of company's current environmental activities on future financial performance. Since these risks reflect the possibility of future environmental losses, it is difficult to calculate their exact amounts and estimate whether they are significant enough to be considered material. Environmental risks refer to a very long period (like potential damage of climate changes) and do not constitute a present obligation (firm could avoid the materialization of these risks), so accounting rules are restrictive in the area of their recognition and measurement, leaving room for their display in the statements' notes. However, there are very strong and reasonable pressures on the part of the financial market for a broader disclosure of environmental risks in financial statements, which forces IASB to take actions to solve this problem (Thistlethwaite, 2011).

IASs/IFRSs allow inclusion of numerous environmental costs' categories in profit or loss, such as costs of energy consumption; costs associated with waste management; costs of prevention, protection, and environmental security; costs of remedying, reducing and restoring environmental damage. However, many of the recognized environmental costs are included in the widely classified cost categories in profit or loss, and it is difficult to identify and analyze their specific amounts. According to IAS 16, there is also an opportunity for capitalization of environmental costs related to various eco-sustainable initiatives (like research and development of new technologies and processes) within category of fixed assets, but that opportunity basically depends on the presence of the future economic benefits for the firm and possibility to link costs to them (Bracci, 2013).

According to IAS 1 entities prepare additional environmental reports "...particularly in industries with significant environmental factors..." but "...reports and statements presented outside financial statements are outside the scope of IFRSs" (IAS 1, par.14). Moreover, financial reporting normative specifies what kind of environmental information should be disclosed in the notes to financial statements to evidence firm's environmental initiatives and illustrate published environmental records (Bracci, 2013). Suggested qualitative data refer to annual environmental records, environmental strategy, indications about main environmental problems and risks, ability to implement the environmental initiative and the presence of environmental audits. On the other hand, quantitative information should disclose some provisions for environmental risks and, the possibility for activation of potential environmental liabilities and criteria for evaluation. Besides mandatory accounting standards, which specify how different environmental issues should be treated, voluntary accounting standards have been developed recently by different organizations in order to increase the volume and



improve the quality of environmental disclosures. For example, The Climate Disclosure Standards Board (CDSB) has recently developed standards for including effects of climate changes in the regular financial statements.

Obviously, one of the factors affecting the EFA's ability to produce a wider range of environmental information is the lack of materiality of the most of the environmental issues, which prevents their disclosure according to IFRS provisions. Thus, many environmental costs or liabilities are not included in financial reports, despite the high probability of their occurrence in the future. As a result of limited potential of EFA to make environmental costs, liabilities, assets or risks more visible, measurable and recordable, informational asymmetries related to firm's environmental performance may force investors to allocate their assets in more sustainable and green direction (Thistlethwaite, 2011).

Therefore, it should not be surprising that financial accounting is often recognized as a system which has little to do with environmental issues or, even worse, as a practice whose "reported profit figures in financial statements lies at the very heart of environmental crisis" (Gray et al., 2002). Although financial accountants have potential to influence the way investors and other stakeholders value corporate performances, they are at the same time "governed by professional rules and standards that limit their ability to measure firm's corporate performance. Financial accountants are not rule-makers, but rather referees who ensure the game is played by the rules" (Thistlethwaite, 2011).

According to some researchers, the main challenge for IASB is "whether it will make a statement of environmental assets and liabilities part of a mandatory set of financial statements that firms in environmentally sensitive industries should periodically publish" (Negash, 2012). Negash states that global IFRS can be used as a device for monitoring the corporate environmental behavior, but it must be coupled with radical changes in the conceptual framework and new definitions of assets, liabilities, and profits. Otherwise, the practice of inadequate or limited recognition and disclosure of provisions for past and current environmental obligations in financial statements (or even non-disclosure of their amounts and adequacy in notes) leads to threatening of investors' interests, by overestimation of reported profit figures and underestimation of contingent liabilities.

### **4.3 Environmental Management Accounting**

Increased awareness of environmental challenges more than ever forces managers to take care about the environmental impact of their decisions. EMA is a system of tools and techniques aimed at identifying and measuring these environmental impacts from the cost-benefit perspective. It should help managers make better environmental decisions at strategic, operational and product levels, by giving them relevant information about costs, benefits and overall consequences of undertaken or planned activities (Medley, 1997). According to IFAC guidelines, cost-benefit analysis from the environmental point of view should consider the extent to which benefits of an action, decision or policy outweigh related costs. There is also a suggestion that EMA should be focused on both physical information on the flow of inputs (materials, energy) and outputs (products, waste, emissions), as well as monetary information on related costs and benefits (IFAC, 2005).

Environmental benefits may include revenues from recycled items, cost savings from energy or eco-efficient projects or licensed clean technologies. However, their measurement is related to numerous difficulties, since they often have a broader meaning, like in the case of benefits from improved corporate reputation, legislation compliance or natural environment protection. On the other hand, environmental costs are much more tangible and, in the broadest sense, they refer to effects of environmental compliance (prevention, and eco-sustainable projects) or non-compliance (as penalties, remediation, and sanitation). Environmental costs are costs of any firm's undertaken activity related to preventing, reducing or repairing the environmental harmful effects. EMA has a potential to improve the management of environmental costs by identifying, analysing and reporting costs that are, within the scope of EFA, either unrecognized or invisible since they are classified under broad cost categories. In addition, EMA can help in improving the efficiency of environmental management in the area of reducing costs, control of the material, energy and waste flow, valuation and prioritizing of environmental activities, accurate costing and pricing of products, designing more eco-sustainable products or processes, making environmentally responsible capital investment decisions and improving corporate long-term sustainability (Stanciu et al., 2011).

Companies usually measure in monetary terms environmental costs associated with research and development, equipment, regulatory compliance, production, recycling, disposal, maintenance, pollution, waste management, prevention, restoration, and fines. Some of these costs should be capitalized, as investments in clean-up devices or

development of eco-efficient production technologies, which leads to their subsequent recognition. It is important to say that measurement of environmental costs in monetary terms can also be difficult, given the non-financial nature of the most of the environmental data, which is why the use of inadequate measures for quantifying physical inputs and outputs is a serious limitation of traditional EMA practice (Gadenne, 2002). Therefore, some researchers suggest that usage of recently developed strategic cost analysis tools, such as life cycle costing, activity-based costing (ABC), full cost accounting or value chain analysis may expand the scope and improve the quality of environmental cost information, as opposed to traditional measurement techniques (Debnath, 2011). For example, ABC can help in better identification of environmental costs that are usually hidden inside overheads, which include most firms' environmental activities. Conversely, traditional cost accounting systems assign these costs to all manufactured products, although some of them require more cleaning-up of pollution than others, causing inadequate pricing and environmental decisions (Nickell et al., 2014).

One of the fundamental problems that EMA is faced with a treatment of costs that occur outside of firm's boundaries and for which firm has no formal responsibility. For example, a purchaser usually has responsibility for disposal and recycling of products, but the question is whether they take over all costs associated with the disposal (Lanen, 2005, p. 370). Assuming that portion of external costs is "assigned" to the environment or other participants of a company's supply chain, the inclusion of these costs could contribute to a more responsible and reliable reporting. However, some research studies show that measurement of external environmental costs, like water, land, air and noise pollution or recycling, have not been highly rated by the respondents from analyzed companies, which indicates a minor extent of external cost measurement (Gadenne, 2002).

Some authors argue that building up the interaction between EFA and EMA may result in higher visibility of costs and effects of corporate environmental performance. Given the fact that EFA is covered by obligatory standards and reporting rules, which "has not yet attempted to internalize costs and expenses outside the boundary of financial transaction, leaving these 'contingent' at best, we could see management accounting as more accessible ... the area that could meet the demands of decision-making" (Debnath, 2011). In other words, one of the basic EFA's shortcomings related to underestimating of real environmental costs could be retrieved by performing different EMA analysis, since its activities are not obliged by accounting rules. It should fill the gap created by the informational asymmetry between investors and their investments according to insufficiently disclosed environmental risks in financial statements. There is even opinion that in response to rising legislative requirements and stakeholder concerns, environmental costs should be identified by EMA and after that more extensively disclosed in the notes or even in the main body of financial statements of companies from environmentally sensitive industries, such as mining, chemical, gas, oil or electrical (Gadenne, 2002).

Also, regardless of the fact that there are no external reporting requirements specifically associated with EMA, its information is widely used in companies for preparation additional voluntary reports aimed at external users. This corporate sustainability (or environmental) reports are guided by different international guidelines, like GRI or ISO standards, so they are more often comparable and helpful in better understanding of future environmental risks. For example, ISO 14000 series of international environmental standards recommend a development of comprehensive environmental management systems (EMS), that should be based on clearly defined environmental objectives and enhanced systems for monitoring the progress of their achievement, through precise measurement of environmental costs and other performances (Kamieniecka et al., 2013). In that sense, the role of EMA is to provide assistance to management in monitoring the development of corporate environmental behavior toward sustainability.

## **5. Conclusion**

In response to increasing concerns by stakeholders, providing broader information on environmental matters in recent years becomes one of the most important challenges faced by accounting. Nevertheless, despite the mentioned concerns, it seems that in practice, a stronger connection between environmental issues and financial reports has not been established yet. Traditional accounting is often considered the main cause of slowing down the progress in achieving better environmental performance and wider integration of social and financial reporting. One of the reasons for that kind of perception lies in the existing reporting rules, which are technically narrow by their nature (prudence, materiality, and matching) and blind for wider long-term environmental problems that exceed the framework of the reporting period. Such ignorance of recognition of many crucial environmental risks lead to the limited volume of disclosed information on environmental costs, assets and liabilities. Furthermore, even if information about environmental costs or liabilities meets the criterion of tangibility and measurability, it is still prepared selectively and has reduced visibility since it is

only a part of the broader positions in financial reports. Therefore, although global IASs/IFRSs have a potential to cover all complex social and environmental aspects, they still have to recognize a larger environmental business context, either by including a minimum set of necessary information within the existing framework of financial reporting or by introducing an entirely new mandatory record.

Given these facts, the opportunity to account for environmental issues is currently left only in the EMA, although there are numerous variations in the scope and quality of produced information, depending on the different levels of environmental management engagement. Regarding this matter, voluntary environmental reports are criticized as having very little to do with corporate environmental performances, since they often comprise extensive promotional material directed only towards improving a corporative image. Therefore, this area needs a wider scope of regulation and more harmonized rules that will enable creating comparable and environmentally directed reports.

In order to be effective, environmental accounting also must be aligned with substantial changes in the organizational culture and management, which should encourage the environmental behaviour of all employees, including accountants. We hope that urgency of environmental problems will prevail on technical accounting issues, so that external users may be provided with more useful information. We also expect that, along with more environmental compliance with accounting regulation, further development of environmental audit and meaningful legislation pressures may create a proper climate for improved environmental reporting, which is the area of potential for future research.

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