

Ambiguity of financial environmental information: A case study of a Finnish energy company

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Structured Abstract

Purpose: Voluntary corporate social responsibility reporting has developed into an everyday activity for many commercial organizations, and scholarly interest in these practices continues to increase. This paper focuses on one subset of these disclosures, namely the figures relating to environmental expenditures and investments published by various organizations. The purpose of this paper is to provide insights into the nature, role and significance of such financial environmental information. Despite their seeming accuracy and preciseness, little is known about how such financial environmental information is constructed and subsequently used in organizational settings.

Design/methodology/approach: The paper is based on a qualitative case study focusing on a Finnish energy company. We build our investigation primarily on 26 semi-structured interviews with employees at all organizational levels, which we supplement with various documentary sources. Our interpretation draws on the notion of loose coupling, which we use as a method theory to provide a better understanding of this complex organizational practice.

Findings: We highlight the ambiguous and imprecise nature of the outwardly accurate figures provided by the company. We argue that disclosed financial environmental information is only loosely coupled with various dimensions, including the organization's actual activities, its environmental impacts and organizational decision-making.

Originality/value: Our findings contrast with those of some prior research, which has considered financial environmental information highly valuable. As for broader implications, the paper discusses the accuracy of public records based on such ambiguous organizational figures.

Keywords

Environmental expenditures, environmental investments, environmental disclosures, case study

Article Classification

Research paper

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1. Introduction

Corporate social and environmental actions are under increasing scrutiny across social and political spectra (Ylönen and Laine, 2015; Tregidga et al., 2014; Malsch, 2013; Bebbington et al., 2012). At the same time, environmental issues and corporate social responsibility (CSR) no longer are mere anomalies that appear on the accountants' agenda only after major environmental disasters like Deepwater Horizon, Exxon Valdez or Bhopal. The most manifest, long-standing feature of CSR is arguably the voluntary provision of social and environmental disclosures; this practice flourishes across the world and now is considered an everyday activity for many commercial organizations (KPMG, 2011). However, the role and significance of such disclosures have been debated intensely (e.g. Cho et al., 2015; Milne and Gray, 2013; Dhaliwal et al., 2012; Archel et al., 2011) as scholars have sought to understand the factors underlying the phenomenon and to make sense of the possible linkages between corporate environmental disclosures, environmental performance and financial success. Recently, prominent North American accounting journals have also expressed increasing interest in the phenomenon (Moser and Martin, 2012, see Blacconiere and Patten, 1994).

This paper focuses on one subset of corporate environmental disclosures, namely the figures relating to environmental expenditures and investments regularly published by many organizations. Despite their seeming accuracy and preciseness, we know little of how these figures are constructed and subsequently used in organizational settings (Cho et al., 2012). Accordingly, the purpose of this paper is to provide insights into the nature, role and significance of financial environmental information, a quest we seek to accomplish with qualitative research methods. We concur with Moser and Martin (2012, p. 802), who suggest that 'archival CSR studies alone are unlikely to provide us with a full understanding of the motivations for, and consequences of, CSR activities and managers' related disclosure choices'. However, whereas Moser and Martin (2012) suggest using experimental research designs, we contribute a qualitative case study focusing on actual organizational practices. Case studies are useful for providing thick descriptions of organizational practices and thereby helping to develop 'better understandings of complex accounting realities and processes' (Gendron, 2009, p. 123). Therefore, we maintain that a detailed qualitative case study is the appropriate research design to shed light on questions such as: What do the figures representing environmental expenditures and investments actually stand for? Why do organizations

produce them? How, if at all, are these figures used in organizational decision-making? Are these figures accurate and comparable measures or just crude approximations?

More precisely, we contribute to prior literature by presenting a case study of a Nordic energy company that has a long history of producing environmental reports and disclosing financial environmental information. We build our investigation primarily on 26 semi-structured interviews with employees at all organizational levels. We supplement this dataset with archival documents, including corporate disclosures and media data, which helped us both in the early stage, in forming a pre-understanding of the setting, and later, in contextualizing our findings. We argue that as a whole, the dataset allows us to look at the role of internal decision-making processes (Archel et al., 2009; Adams and Larrinaga-González, 2007) and to analyse how information relating to environmental expenditures and investments has been produced, used and understood in the organization. In this way, we contribute to prior literature in which it has been emphasized that we still know relatively little about organizational practices relating to social and environmental accounting and reporting (Bebbington et al., 2014; Gray, 2010; Hopwood, 2009; Owen, 2008).

In general, corporate social and environmental reporting has been criticized for not providing an appropriate representation of the social and environmental impacts of corporate activities (Rodrigue et al., 2015; Tregidga et al., 2014; Gray, 2010). Indeed, prior scholarly work argues that a gap exists between actual organizational practices and their representation in voluntary environmental disclosures. Traditionally, this gap has been explained as window-dressing (e.g. Adams, 2004), a sort of ‘greenwash’ in which organizations make at least partially unsubstantiated claims of sustainability (Boiral, 2013; Laine, 2010). Such gaps between representation and action are not uncommon in accounting literature, but they have been reported extensively in connection with budgets (Covaleski and Dirsmith, 1983; Hyvönen and Järvinen, 2006; Lukka, 2007) and performance-measurement systems (Modell, 2001).

Similarly, while financial accounts are deemed to be an accurate representation of a firm’s economic reality, they are also representative of a firm’s socially constructed processes (Tollington and Spinelli, 2012). Importantly, gaps between organizational actions and their representation exist also because accounts are not the outcome of a deterministic process, but rather are constructed by accountants. Likewise, constructing financial reports requires professional judgements to be made—the more principle-based the framework, the more the outcome relies on professional opinion (see e.g. Bennett et al., 2006). Thus, depending on the situation, financial reports can be viewed as either instruments of objective evaluation or as a set of professional judgements relating to a unique decision (Ahrens, 1997; Malsch, 2013). Accordingly, in the study

at hand, our interpretation draws on the concept of loose coupling (Weick, 1976; Perrow, 1984; Orton and Weick, 1990) which we believe can provide explanations as to why gaps between actions and figures persist and may, in fact, be in the interest of organizations to create space for action (Collier, 2001; Lukka, 2007) and enable change (Nor-Aziah and Scapens, 2007). However, we wish to emphasise that our intention is not to study organizational loose coupling as such, but to use it as a method theory (Lukka and Vinnari, 2014; Lukka, 2005) offering insights into our exploration of financial environmental information. Lukka (2005) distinguishes between domain theory, which relates to the substantive topic area the study investigates, and method theory, which ‘typically offers a meta-level conceptual system and lens for analysing the substantive issues under scrutiny’ (Lukka, 2005, p. 382). In addition, following Lukka (2005; see also Keating, 1995), we classify our non-interventionist case study as theory illustration case research, in which we use the theoretical frame of loose coupling to ‘illuminate some previously unappreciated aspect of management accounting practice’ (Lukka, 2005, citing Keating, 1995, p. 70). In other words, in the study at hand, loose coupling serves as a method theory and offers a lens through which we seek to discuss the nature of seemingly accurate financial environmental figures. In conducting our case study we came to notice that in the case organization considerable time and energy were put into constructing and reporting these figures, even though they appeared ambiguous and did not seem to have a clear function in the company. We hence chose to apply loose coupling as our method theory, since in prior research the idea has been applied successfully in different contexts to show how various kinds of accounting figures can appear ambiguous and, to an extent, indeterminate, but nevertheless serve different purposes in the organizational life (e.g. Collier, 2001; Lukka, 2007). Accordingly, with loose coupling as our lens we seek in this paper to enhance our understanding of the figures of environmental expenditures and investments, which we consider to be an ‘unappreciated aspect of [management] accounting practice’ (see Lukka, 2005). We will return to loose coupling in more detail in the next section.

The motivation to study the construction of financial environmental information in an organizational setting stems from multiple sources. First, our paper is a direct response to Cho and colleagues (2012; see also Cho and Patten, 2008; Patten, 2005), who conclude their study on environmental cost disclosures by US companies by noting that more fieldwork-based studies on managerial motivations to publish financial environmental information are warranted. Second, much prior scholarly work in accounting journals that discusses corporate social and environmental issues has focused on published disclosures only. Such an approach has been criticized (Ferguson, 2007), and calls have been made for future research to elaborate on the relationships between organizations’ environmental disclosures and their operating practices (Archel

et al., 2009; Owen, 2008). Organizational disclosures should not be understood only as an end product; rather, the whole process by which sustainability disclosures come to exist within the organization is likely to be significant. The process may affect organizational practices, even if the final report is not used actively and/or visibly (Bebbington et al., 2009; Adams and McNicholas, 2007). Third, prior quantitative research on corporate social and environmental reporting often has considered monetary environmental disclosures, such as information on environmental expenditures and investments, to be more objective and of higher quality than other types of disclosures, and research designs have been crafted on the basis of this assumption (e.g. Aerts and Cormier, 2009; Al-Tuwaijiri et al., 2004; Wiseman, 1982). We remain sceptical about such an assumption and, thereby, concur with Bebbington and colleagues (2012), who have questioned the purpose and value of disclosing financial environmental information in the form of environmental expenditures and investments. We maintain that a detailed, qualitative case study on actual organizational practices can provide insights into this discussion. Overall, we maintain that our examination is timely and that with a case study, we are able to provide new insights and, thereby, contribute to the literature on corporate social and environmental reporting practices in general and on discretionary financial environmental information disclosures in particular.

The remainder of this paper flows as follows. The next section briefly describes the concept of loose coupling and discusses our case selection, data and method. The third section introduces the case study organization in more detail. The fourth section presents the study's findings. The fifth section contains our discussion of the findings and the final section concludes the paper with some implications and avenues for further research.

2. Research method and methodology

Loose coupling

The interpretation presented in this paper draws on the notion of loose coupling (Glassman, 1973; Orton and Weick, 1990), a dialectic concept that refers to patterns of action that are distinct or separate from each other, yet still responsive to each other in some fashion. For instance, in their seminal work, Meyer and Rowan (1977) show how organizations striving to satisfy multiple goals do so by creating a space between processes and their performance measurement. The literature presents several rationales for loose coupling, of which we distinguish the following archetypes: loose coupling as 1) a reaction to environmental uncertainty, 2) organizational reaction to pressure originating from an outside party or stakeholder where legitimation and

ceremonial conformity are sought, and 3) a feature of an organization's decision-making process when multiple goals exist and negotiable space is deemed necessary.

Relating to the first rationale for loose coupling, reacting to *environmental uncertainty*, Weick (1976) noted that organizations that apply loose coupling are more likely to adapt and respond to external changes and handle uncertainties successfully, and therefore, survive. Organizations may remain loosely coupled to their environments for a number of reasons, such as ambiguity of goals or limitations in managerial attention and rationality. Perrow (1984) approaches the issue from a process perspective and postulates that tightly coupled systems generally are more controlled and less flexible, but can be highly efficient in situations where patterns of activity are invariant. On the other hand, loosely coupled systems tend to include slack and buffers and may seem inefficient at first. However, loosely coupled systems are adaptable and able to cope well with changing external circumstances. This notion has been evoked in the management accounting context in the debate concerning budgetary slack, that is, budgetary allocation of seemingly excess resources. For instance, Covaleski and Dirsmith (1983; 1986) conclude that budgeting can be used as a loosely coupled negotiating tool with which middle management advocates the needs of their organizational unit to top management, while Lukka (1988) illustrates the positive organizational consequences of budgetary slack. This demonstrates how loose coupling comes to exist in uncertain environments where buffers are necessary in order to be able to adjust goals and actions to changing circumstances.

Another view on loose coupling is its appearance as ceremonial *conformity to external expectations*, or seeking legitimacy in the eyes of external constituents that can influence on an organization's resources (cf. Carruthers, 1995). This form of loose coupling implies that organizations that are dependent on political support need to be efficient not only to survive, but also to legitimate their actions, which in the accounting context means portraying an image of modernity and cost-consciousness (Järvinen, 2006; Rautiainen, 2010). Thus, unlike in decoupled systems, efficiency and legitimation are not alternatives or opposites, and accounting practices designed to secure external legitimacy are not merely symbolic (Yazdifar et al., 2008). Notably, for Orton and Weick (1990), loosely coupled systems differ from both decoupled and tightly coupled systems. Whereas tightly coupled systems are defined as having responsive components that do not act independently of each other, decoupled systems have elements that are distinct from, and do not respond to, other elements (Cruz et al., 2009). Relating to conflicting demands on organizational performance, while tight coupling is seen to inhibit necessary organizational reforms and adaptation to changing environmental circumstances, both Nor-Aziah and Scapens (2007) and Lukka (2007) see loose coupling as an input to and an outcome of institutional change—that is, as

both a solution and a problem. Moreover, loose coupling has been a distinctive characteristic of public sector performance measurement (Jansen, 2008; Kasperskaya, 2008). For instance, Moll and Hoque (2011) present a case study in which a university's external reporting was only loosely coupled with the organization's management accounting, resulting in tensions and legitimacy issues. Similarly, Norhayati and Siti-Nabiha (2009) illustrate how performance measurement in a state-owned company was loosely coupled to organizational routines because of the need to appear rational in the eyes of the sole shareholder. Loosely coupled systems can hence provide a solution in diverse settings, where organization's success is dependent on the support of a strong external stakeholder.

Of a third view, regarding loose coupling as a feature of organization with *multiple goals*, Lukka (2007, p. 80) states, 'Loose coupling means and posits that an organization can have both rational and indeterminate elements simultaneously'. Thus, Lukka (2007) concludes his casework by noting that daily actions would not have been viable in his case organization had they been tightly coupled to the (accounting) rule system. This notion goes beyond the idea that loose coupling constitutes ceremonial conformity to external expectations. Thus, legitimation only rarely entails a total disconnect between organizational actions. Such notions of loose coupling also have been evoked in relation to budgeting research, where budgetary slack and ambiguous budget categories are necessary to satisfy conflicting demands and to negotiate among multiple goals (Collier, 2001). In fact, Covaleski and Dirsmith (1986) argue that budgeting is a tool for the politics and power of organizational life. Cruz et al. (2009) study this in a multinational setting and show how different elements of management-control systems in a local subsidiary react with varying degrees of independence to often conflicting or contradictory demands imposed from headquarters. Similarly, Cinquini and Tenucci (2010) present survey evidence on how the same strategic management accounting technique can support various strategic approaches of the company, while Gond et al. (2012) show the lack of integration of sustainability into an organization's strategic goals. In this vein, it is also worth noting how loose coupling is not a stable state of affairs, but a dynamic phenomenon often associated with accounting change (Yazdifar et al., 2008; Van der Steen, 2011) and organizational learning (Moilanen, 2012).

Below, we will draw on the conceptual ideas of loose coupling as a method theory (Lukka and Vinnari, 2014) to gain a deeper understanding of the organizational processes related to financial environmental information in our case organization. As mentioned, the concept of loose coupling previously has proven fruitful for studies that have sought to shed further light on why organizations produce and report accounting figures that have appeared indeterminate and/or ambiguous (e.g. Covaleski and

Dirsmith, 1986; Cruz et al., 2009; Lukka, 2007). Our case setting is similar, and hence, we will use loose couplings as a lens through which we explore and discuss the nature of seemingly precise financial environmental figures in more detail. Before progressing to our findings however, we will first discuss our data collection and introduce the case company in more detail.

Case selection, data collection and analysis

The case organization in this qualitative case study (see Patton, 2002; Silverman, 2005) is a Finnish energy company. This organization is suitable for our investigation concerning the roles and significance of financial environmental information for a number of reasons. First, the case company has a long history of environmental reporting; it has disclosed environmental information since the 1980s and has published a separate environmental report yearly since 1997. Second, the organization's activities not only cause significant environmental effects, but its locations also are geographically scattered. The company's numerous production sites pose major challenges for both measurement and control of environmental effects, making this case organization a relevant setting for investigation. Finally, gaining access is, naturally, a relevant reason for selecting a particular case (Bédard and Gendron, 2004). Our initial meeting with the organization's CEO was successful, and we were given permission to interview employees throughout the organization. The case organization will be introduced in more detail below.

The main dataset of this qualitative case study consists of interviews with 26 employees from the case organization (see Appendix A). We proceeded with our investigation according to a data-collection plan set up in advance. We began data collection with top management and continued by interviewing everyone working with accounting or financial reporting on the group level and the key individuals in the organization's three main business areas. Thereafter, we focused on the organization's core business, the peat business area, in which we interviewed employees at all organizational levels (see Appendix B). We did not engage with the other two business areas in more detail, not only because they are substantially smaller than the peat business, but also because they are significantly less contested in terms of their environmental effects, a fact demonstrated by the case organization's environmental expenditures and investments, which derive mostly from the peat business. On the whole, since we interviewed all accounting personnel on the group level and individuals from all organizational levels in the case organization's most environmentally significant business, we maintain that the 26 interviews provide sufficient insight to discuss how financial environmental information features in the organization. In addition, it is worth noting that no one we approached declined to be interviewed.

Interviews lasted from 45 minutes to two hours and were, with one exception, conducted on the case company's premises. For each interview, at least two authors were present, with the lead author taking part in all but two interviews. All interviews were recorded and, subsequently, transcribed verbatim. An instructive list of interview themes (Appendix C) was followed loosely in the interviews; all interviewers could continue leads with further questions and alter the sequence of the interview as perceived necessary. Regarding the study at hand, financial environmental information proved to be an interesting theme in the early interviews, as it was mentioned by the interviewees without prompting. In subsequent interviews, we followed up on this theme, although it was often brought up by the interviewee before we asked about it. We were interested in hearing whether interviewees encountered these figures in their work, where the figures came from and where they were sent to, whether interviewees used them in their work, and more broadly, how interviewees perceived the figures and their significance.

Data collection was initiated in September 2011. After interviews with the CEO and CFO, we realized that we had begun our research in the middle of an organizational change in the company. As our original intention was not to study change, we decided to speed up the data-collection process to ensure we would achieve a coherent understanding of the situation at that point in time. Therefore, apart from one exception, we conducted interviews in a four-month period. This dataset provided us a good snapshot of the organization before major changes in its internal structure. In addition to the interviews, we used various documentary sources as supplementary material (see Appendix A), including the case organization's annual reports from 1980 onward and media articles focusing on the case company and its industry published in leading Finnish print media from the late 1990s onward. Prior to engaging with the organization, we made use of this supplementary material to acquaint ourselves with the industry, to gain a pre-understanding of the setting and to enhance our competence to conduct the interviews. In addition, the archival data was instrumental in interpreting our findings, as it helped us position our observations and the interviewees' views within a broader social, political and economic context.

To analyse the data, each author first read the transcribed interviews and made his or her own personal interpretations. Likewise, the annual reports and collected media datasets were read by all members of the research group, even though two group members had the main responsibility for analysing them. Subsequently, all authors gathered to share views and discuss their interpretations. Interpretations continued to take shape between meetings, as all authors independently continued analyses, taking

into account each other's views. Findings presented here were reached through a collective interpretation that included numerous iterations and reinterpretations.¹

3. The setting of the study

Case organization

Our case organization is one of the leading peat producers in the world. The history of the organization dates to 1940, when this Finnish energy company began to produce firewood. A few years later, it took its first steps to produce peat. In the 1970s, the company started its own peat production sites, which were followed in the 1980s by heating utilities and other business areas.

Today, the annual turnover of the organization is roughly 700 million euros, it employs some 1100 people directly, and has operations in seven countries around the Baltic Sea region of Northern Europe. The organization has multiple business areas, but our investigation focuses on peat production, which is its core business. Peat is a highly controversial source of energy which can, in many ways, be seen in parallel to coal and oil. Both the United Nations Environment Programme and the Intergovernmental Panel on Climate Change classify peat as a fossil fuel because, even though it does renew over time, re-accumulation is a very slow process extending over tens of thousands of years (see Tuohy et al., 2009; Schlistra, 2001). Nevertheless, peat producers and certain political parties continue to argue that peat should be seen as a slowly renewable biofuel.

Our case organization is based in Finland, where the use of peatlands for peat production is strictly regulated. Peat production requires an environmental permit that defines, inter alia, the methods required for purifying the water flowing from production sites. These permits also set the requirements for maintaining water purification systems, following up nutrient loads, preventing noise and dust and for numerous other details of both pre- and post-production operations. During the permit process, authorities always examine the state and resilience of the watersheds downstream from the proposed production sites. Environmental permitting requires that production will not significantly harm these watersheds. Furthermore, new production sites undergo thorough evaluation of the surrounding natural environment.

¹ At this point, it is worth pointing out that throughout our research process, we sought to ensure that we neither took sides nor appeared to do so in regard to peat production in general and its environmental effects in particular. As discussed in more detail below, there are strong political controversies surrounding peat production (e.g. Peterson, 2014), and conversations can become heated at times. This became particularly clear to us in discussions with various stakeholder groups in a follow-up project to the work presented in this paper.

Sites extending over more than 150 hectares go through an environmental impact assessment, which includes appraisals of the area's flora and fauna, evaluation of noise and dust levels and estimates of the effects production will have on local scenery and human health.

Not only are the case organization's operations strictly regulated, but they also are politically significant. Countering the claims made against peat production on environmental grounds, it has been emphasized that peat is a fully domestic energy source and that its production is important to employment (Kivimaa and Mickwitz, 2011; Huttunen, 2009). Production sites usually are located in rural areas, where there are few employment opportunities outside agriculture and forestry. Lately, both of these arguments have lost some of their appeal, as society's focus on environmental discussion has shifted from protection of specific resources, such as swamps and water, to broader concerns, like climate change (see Peterson, 2014). In addition, from 2011–2012, Finland's Minister for the Environment repeatedly questioned the future of the entire peat industry. Thus, our case organization has been forced to change its communication strategies, and it also has openly admitted that it needs to have excellent environmental performance to maintain the right to continue to operate.

Finnish regulations regarding financial environmental information

Finnish law has no mandatory requirement that organizations disclose financial environmental information as a separate item in financial statements, unless such information is substantive and so necessary to providing a true and fair view of the organization. However, some specific guidelines and recommendations exist. The Finnish Accounting Board has issued a guidance document regarding how environmental issues should be accounted for, calculated and presented in financial statements. This document is based on recommendations made by the European Commission. In a nutshell, the Finnish Accounting Board recommends that organizations disclose aggregate figures for environmental expenditures and environmental investments. Furthermore, Statistics Finland, a public authority responsible for the vast majority of Finnish official statistics, collects information on environmental-protection expenditures by Finnish industry. Statistics Finland gathers its dataset annually from a sample of approximately 2,000 enterprises, which are obliged by law to supply the requested data. Statistics Finland publishes combined and industry-level data annually, whereas data on specific establishments and production sites are collected for statistical purposes only and are treated confidentially. Statistics Finland has issued guidelines regarding this data collection, which the Finnish Accounting Board recognizes as an appropriate base for the disclosures it has recommended, provided that this does not cause a substantially different outcome.

In practice, our case organization needs to collect information to some extent regarding its environmental expenditures and investments. There are no requirements for the organization to disclose these figures, even though the Finnish Accounting Board has recommended their publication.² Nevertheless, the organization has published the figures regularly, an act that featured prominently in the interviews we conducted. Next, we will present and discuss our empirical findings, with which we seek to provide insights on the nature, role and significance of financial environmental information in an organizational setting.

4. The loose couplings of financial environmental information

Case organization and the natural environment

As was discussed above, the operations of our case organization are closely intertwined with nature and natural processes. This holds true throughout the organization's operations, but is particularly pertinent in the peat business. Given the broad visibility and contested environmental effects of peat extraction and production, it is not surprising that our case organization already had a long history of standard environmental reporting. Voluntary environmental disclosures commenced in 1987, albeit on a rather minor scale. Since then, the company has included environmental information in its disclosures annually. More recently (2004–2007), in addition to the special sections within the annual report, the organization also has published an annual stand-alone CSR report and has disclosed environmental information on a separate section of its website.

As we commenced our interviews, it swiftly became evident that environmental aspects not only were present in external disclosures, but also were highly topical, everyday issues for employees. The natural environment is present as a physical entity, as peat extraction takes place in swamps and boglands. In addition, due to the strict regulations and environmental permission requirements related to peat production, dealing with various environmental authorities is part of everyday work for many employees. However, it is worth noting that environmental issues appeared to be on the agenda not only because of regulation. Instead, in the first interviews, we got the impression that the case company made efforts to combine sustainability and business concerns. Furthermore, despite the negative press coverage and furious criticism the company occasionally faces, there appeared to be a widely held view among interviewees that their organization has a good track record of environmental performance.

² Legislation may vary from country to country, and such contextual differences need to be taken into account in discussing this topic (see Bebbington et al., 2012; Cho et al., 2012).

'I am wondering what would not be sustainable here. Well, of course, the environmental NGOs find numerous issues, but I mean, in real terms and with proper argumentation. Would you have such an example?' (Environmental Officer 15)

As exemplified by the above quote, interviewees highlighted the organization's expertise and experience regarding the natural environment. Here, scientific knowledge, accuracy and precise measurements are held in high esteem, in contrast to lay understanding and back-of-the-envelope calculations. During the time we were gathering empirical data, the biggest controversies the organization faced related to whether peat extraction caused significant environmental harm to watersheds downstream from production sites. Since the 1970s, in line with tightening regulation, the organization has been investing in various water protection measures and practices. The organization relies on scientific and engineering expertise in exploring the most efficient and suitable system for each production site. In this context, the various water protection measures are seen as usual practices, and such environmental investments are seen as no different from other investments, in the sense that they require a decent return on capital. However, given that our case organization is by far the largest peat producer in Finland and that there are numerous power plants throughout the country that depend to some extent on peat for their operations, the competitive position of the company has been somewhat exceptional.

'We naturally do an investment proposal for each production site and examine what the water protection measures will come to cost and so forth, but since this is a regulated industry, we will continue to do this as long as it has some sense in it, that is as long as the customer is ready to pay for it. [...] All the costs are transferred to the sales price. [...] Traditionally, in this industry, it has been seen that with the public district heating utilities, you can put everything into the sale price.' (Business Controller 26)

However, the situation has been changing, as environmental regulations have tightened considerably over the past ten years, and this change is expected to continue. The authorities have been setting stricter requirements regarding water-protection measures at peat production sites. Thus, costs of these measures are increasing, which also implies decreasing marginal benefits from increasing environmental investments. As each peat production site is unique, in some production areas the more expensive environmental investments have the potential to make the whole site unprofitable. Since further demands for environmental protection would cause some investments to become unprofitable, the organization has concluded that perhaps it would be a good idea to get rid of the most problematic areas altogether.

'80% of the land we own is where water is purified efficiently [...] The last 20% will cost us 50 million [...] and we cannot invest everywhere [...] If there is no return on investment, so if political decision-making drives us to the point where we cannot operate [a particular site] anymore. [...] All the time, we act according to the laws and regulations, but is it enough in this society? So, consider the 50 million a risk-management fee.' (CEO 1)

As is evident from the quote above, the ever-rising costs of environmental protection are, in fact, obligatory costs of staying in business. However, at the same time, the organization keeps track of environmental investments and expenditures. In addition, these figures seem to play a role in the organization's attempts to navigate its position in society. During interviews, we frequently noticed that interviewees seemed to consider the environmental investment and expenditure figures to be of importance, and interviewees addressed these issues repeatedly without prompting. For instance, when asked about CSR in general, the company's environmental manager emphasized the importance of environmental expenditures and investments as a part of the whole:

'... how do we understand corporate social responsibility. So there, we of course, have the three main areas: financial responsibility, environmental responsibility and social responsibility [...] And environmental responsibility [...] entails environmental expenditures and environmental investments, which are not included in the financial reporting.' (Environmental Manager 3)

Prior research as highlighted how accounting practices can have multiple roles and subsequently considerable influence in the constitution of organizational realities (see Miller and Power, 2013). We hence find it interesting that particular figures become prominent in an organizational setting, and we consider it worthwhile to investigate their background in more detail. Accordingly, we will next look more closely at how these figures come to be constructed, discussed and perceived in the case organization.

Constructing the figures: in practice

The case company has a long tradition of reporting financial environmental information. Such figures were first published in 1988, when the company noted that 7% of investments in production fields were used for environmental protection. Thereafter, financial environmental information, particularly environmental expenditures and investments, has been a standard feature of the company's environmental disclosures. The volume of these disclosures has varied to some extent over time. For instance, in 2005, these disclosures filled about a page in the stand-alone

CSR report. In addition to aggregate figures, the organization often has disclosed detailed information on business areas and geographic sites, on which expenditures could be reported seemingly accurately to within thousands of euros. This practice still was prevalent at the time of our interviews: The 2010 annual report included aggregate figures, and the organization emphasized how ‘the growth of environmental expenditures continued’ (Case company annual report 2010, p. 28). In addition, the figures occasionally are used in press releases and other external communication. Despite being represented as precise figures in the organization’s external communication, the actual construction of the figures tells a different story. While the practice for calculating environmental costs and investments is defined by the Finnish Accounting Board and Statistics Finland, and thus is relatively well established, the accountants interviewed expressed that the figures were ambiguous and difficult to calculate. In practice, environmental expenditure and investment figures tend to be only loosely coupled with the guidelines provided by authorities. In addition, according to the chief of accounting, getting environmental expenditure figures correct is not a strict priority:

‘Thinking of a single worker, when you handle invoices, and assign it to a cost centre, if there are ten things you have to take into account, the invoice will never be handled. You have to know what things are important, and what are less important.’ (Chief of Accounting 7)

Part of the ambiguity is perceived as originating from the use of subcontractors, whose actions are difficult to observe and control. This is highly significant, as the production sites are the major source of the organization’s environmental effects, and all the organization’s production is conducted by subcontractors. Naturally, under such conditions, it also is difficult to see what part of their fees count as environmental expenditures. Knowledge concerning the nature of costs and their allocation bases is held at the field/production site level, and information is not always communicated accurately. Despite the guidelines, the boundary between ‘environmental’ and ‘non-environmental’ operations is blurred.

‘I think that the figures [on environmental costs and investments] are comparable so that we do not in some years have completely different practices from the other years, but it probably is not flawless and on a sufficiently accurate level [...] but it is, of course, a bit... Sometimes there is just a thin line between the things which should be seen as environmental investments or otherwise enhancing our responsibility. These costs are always pretty hard to classify.’ (Chief of Accounting 7)

Moreover, in addition to the categories not being very clear cut on paper, the boundaries between the 'environmental' and 'non-environmental' are further blurred as the individuals dealing with the allocations and thereby categorizing the figures do not necessarily adhere to the set guidelines:

'We have a policy on [environmental investments and expenditures]. All these have been described clearly, but if you do not remind people all the time, it will be overtaken by all the other stuff.' (Group Controller 8)

In this sense, financial environmental figures are no different from other financial reports; for example, statements of fair value require the expert opinions of accountants (Bennett et al., 2006). As noted by Tollington and Spinelli (2012), financial reports are not just representations of the firm's economic reality, but also the result of a process in which they are constructed, negotiated and evaluated by company employees. The figures also are constructed by accountants, who may view the data as statements of their expert judgement and professional opinion (Ahrens, 1997). In our case, the registered financial environmental information can be conceptualized as loosely coupled with the subcontractors' production activities, which caused the expenditures in the first place. In practice, the accountants are needed to determine what portion of a subcontractor's fee was environmental cost. This process includes plenty of manual work, which is considered challenging.

'It is at times quite hard to collect the information because we do not have such systems from which you could get it with a mere click. Instead, it is manual work.' (Business controller 3)

Furthermore, the result is deemed ambiguous at best.

'If we want to know how much we have used on environmental expenditures, our [Chief of Accounting] simply makes a query to the accounting system, but then all of a sudden we come to notice that people have not done things as they should have.' (Group Controller 8)

'...we do not have that information in our system. It is not on our operational level. We cannot follow it [...] The system we have had, well we have had it, but my own experience is that at the end of the year, we have always started to search and panic a bit that, hey, do we have all the information and are we going to get it? So we have not had an established practice where people have been trained to input the information so that it would be timely and it would be followed up.' (Project Manager, Finances 9)

Still, these figures seemed to be important to many within the organization, and we noted that accounting personnel spent considerable time and energy to put together environmental cost and investment information. It seemed that there was widespread belief regarding the relevance of these figures (see Hyvönen et al., 2012). This is well illustrated by a presentation given by the environmental manager, who in our first meeting, which also involved the CEO and the environmental director, used graphs of environmental investments and expenditures to highlight how the company is taking care of its environmental responsibilities (and, in fact, doing better all the time). Likewise, one financial manager took up this theme at the very beginning of our interview. We had just presented ourselves and described our general interest in environmental disclosures and organizational decision-making when he told us that, in his view, the registration of environmental expenditures and investments was not accurate enough:

‘So in the end, it is up to one’s discretion to decide which part of subcontracting costs should be allocated to environmental works [...] Still, I think this is worthwhile.’ (Financial Manager 6)

Seeing the practice as worthwhile is in contrast to the view presented by Bebbington and colleagues (2012, p. 86), who are sceptical of monetary environmental disclosures and state that ‘the purpose and value of disclosing environmental assets and expenditures, i.e. splitting internal costs between environmental and non-environmental, is unclear from both a financial and an environmental perspective’. Nevertheless, in our case organization, accounting personnel place emphasis on, and spend considerable time on, identifying and calculating financial environmental information. Given that organizations have only limited resources at their disposal and hence need to select the tasks they engage with, we considered it reasonable to assume that these figures also would be used within the organization, since some effort was constantly put in their production. We next move on to explore how our interviewees perceived the financial environmental figures are taken into account and made use of in the case company’s decision-making.

Financial environmental information in organizational decision-making

Overall, the direct role of financial environmental information in the organization’s decision-making processes appears blurry.

‘It is a good question whether that information is really used. We use them for the annual reports. We get the indicators [from the system] and I think such

figures are demanded, we would not otherwise hunt them. But do they affect our activities? Not at all, I think.’ (Environmental Manager 23)

‘I don’t think that [in our systems] the environmental actions are linked to our business, which implies that we currently do not see the connection that if we did these environmental duties it would have a direct impact on our business.’ (Project Manager, Finances 9)

Despite the effort to collect and combine this information and the high face-value the figures appear to enjoy, the eventual coupling between environmental information, actual operations and eventual decision-making appears loose.

‘...environmental reports and reporting systems and financial issues...will they connect somewhere, in some information system, or on somebody’s desk, and, well, should they? That is an interesting point to consider.’ (Business Area Manager 25)

Here again, it is not clear whether the figures actually provide information that could be used effectively in decision-making, even if it was integrated into the systems. Importantly, investing money is a resource measure, not a measure of outcome. Thus, environmental costs and investments do not measure the actual environmental effects of the money spent. However, a loose coupling can be seen to exist between registered financial environmental information and reduction in the environmental effects caused, since if you spend more resources on environmental issues, it is probable that you also will reduce effects somewhat. It must be noted that the company’s top management were well aware of this condition.

‘We report, for instance, the cost we are putting on environmental matters...it can lead to the wrong kind of thinking [...] I would be interested in, well, impact on the environment [...] I would like to get feedback on our actions so that we can get [the environmental impact] smaller.’ (CFO 4)

‘Technically we can do all kinds of things and put the investments there, but there again, it is simply the practical attitude [...] so it does not work like it should have.’ (CEO 1)

Environmental expenditures and investments are caused by real operations. Likewise, expenditure and investment information is based on actual expenditures and investments, implying that we are not dealing with a mere decoupling. However, the figures, as such, play no role in decision-making, as, for instance, all investment

proposals are evaluated based on their estimated overall financial outcomes. Furthermore, as pointed out by our interviewees, most of the environmental activities currently termed ‘voluntary’ are, in fact, compulsory once contextualized in the broader picture, including tightening regulatory demands and a longer time-horizon.

‘These environmental investments, well, they can, of course, also be voluntary, but usually we just have to do something in order to fulfil the environmental permit requirements in the future.’ (Business Controller 5)

Thus, the organization’s aggregate environmental costs and investments rise as it seeks to anticipate and comply pre-emptively with future environmental requirements. Therefore, even though it is only loosely coupled with actual activities, the financial environmental information assists in this process, as the long-term future of the business is seen to be in jeopardy.

‘We need to be able to show also to the external parties that we have put money in it.’ (Group controller 13)

‘We are seeking acceptance for the future and treatment of this business in general, and in that process it does not suffice for us to only follow the regulatory demands, but we have to do more [...] It is important to focus on being able to create a certain image of the organization.’ (Development Manager 20)

One problem with producing voluntary reports of financial sacrifices that are, in fact, mostly involuntary, is that financial performance measurement, as such, does not capture social responsibility in a broad sense, since following regulations does not imply any specific responsibility per se. Thus, some interviewees stated their opinion that voluntary reporting of mandatory costs seems peculiar. From an environmental viewpoint, it would make more sense to report what one is doing truly voluntarily in order to, for example, protect the environment.

‘My opinion is that if we have a mandatory obligation to do something, it is not an environmental investment or environmental cost, but if we do something better [...] than required, then it is an (environmental) cost.’ (Business Controller 8)

In a less-evident manner, disclosure of the figures in corporate communication also can be significant in relation to internal purposes; management can use external disclosures as a tool to achieve changes internally by giving the figures a prominent position. The chief communication officer (CCO) further highlighted the financial significance of environmental issues.

'[Not reporting] is like if you quit smoking and tell it to no one. But if you yell out loud that I'll give a thousand euros to anyone who sees me smoking [...] The weighting must be on the external side if you want to achieve an internal change.' (CCO 11)

Thus, even though the direct applicability and use of figures were perceived to be limited, they still can be seen as useful indirectly. The loose couplings inherent in the figures are significant, since they allow sufficient flexibility for the figures to be produced despite their general ambiguity. Furthermore, it must be noted that the production process also can be significant, thereby resulting in effects that could be hard to identify, even from within the organization.

'At the moment it is not relevant for us. When I worked for the business unit two years ago, I was asked to report all kinds of figures, but after they were reported, they weren't shown anywhere.' (Business Controller 8)

'In the past, I have many times asked whether we should stop this practice, but everyone to whom I pose the question replies that we should continue. Everyone feels that it is somehow necessary, but it is a whole different matter when you ask where it is used.' (Financial Manager 6)

The collection, calculation and disclosure of financial environmental figures have a long history in the organization, spanning more than two decades. The quote above highlights how, over time, financial environmental figures have come to be seen as necessary, although those working in the organization may have difficulty identifying exactly why this is the case. The figures may be ambiguous and somewhat imprecise, but through their loosely coupled nature, they seem to serve various purposes indirectly. The form of the information probably also is relevant here, as the monetary amounts are understandable to both external and internal parties, while they also seem to combine the multiple, and possibly contradictory, goals of financial and environmental performance. This monetary form may also be relevant in considerations regarding which information the organization decides to use when discussing its environmental commitment and accomplishments in the annual and environmental reports as well as in other forms of corporate communication.

Overall, we argue that the case presented here provides an example of how accounting figures may not always be what they look like: On one hand, seemingly precise, accurate figures may have been constructed through ambiguous and value-laden processes, and on the other hand, figures which at first glance seem useless may have

relevance in organizational life, despite the challenges people may have in pinpointing their role. Accordingly, and as accounting practices continue to expand into new areas (see Miller, 1998; Thomson, Grubnic and Georgakopoulos, 2014), we maintain that research continues to be needed to explore the nature of prevalent accounting figures, instead of merely assuming that some accounting figures are of a particular nature just because they appear to be or are said to be such.

5. Discussion

In this paper, we have sought to provide insights into the nature, role and significance of financial environmental information published by corporations. The findings presented here are based on a qualitative case study drawing primarily on interviews conducted with 26 employees at all levels of the case organization. We acknowledge that the case study findings derive only from one particular setting and thus cannot be fully generalized nor assumed to apply directly to other companies or contexts. Nevertheless, following Gendron (2009, p. 123; see Burchell et al., 1980), we maintain that insights from qualitative research are valuable for questioning some 'taken-for-granted assumptions about the roles of accounting in society'. In addition, our dataset allows us to shed light on the internal organizational processes related to social and environmental accounting, which we still know relatively little about (Bebbington et al., 2014; Gray, 2010; Hopwood, 2009). By drawing on internal case study data and the idea of loose coupling, the perspective provided here also differs from the legitimacy (e.g. Cho, 2009) or 'greenwash' (Boiral, 2013) explanations often used to discuss discrepancies observed between corporations' actions and their environmental disclosures (see Cho et al., 2015).

To summarize our findings, we noticed some inherent complexity in our case company related to the reality of financial environmental information. During our empirical work, it became evident that the information on environmental expenditures and investments was broadly recognized within the organization and appeared to be given a fairly important status. The accountants and business controllers interviewed expressed unprompted concern regarding ambiguity and impreciseness of the figures and described difficulties in calculating them. Still, at the same time as the accountants were spending considerable time and energy to improve the accuracy of the figures, the organization's top management appeared to be aware that the figures were largely meaningless.

Regarding the use of environmental cost information in the case company, both managers and accountants doubted their impact to decision making. For instance, the environmental manager felt that environmental reports and actions were disconnected, and the CFO expressed concerns that such information may even be misleading from

an environmental viewpoint. However, at the same time many interviewees seemed to be regarding the process of constructing and reporting the numbers as somehow useful. Internal communication was cited as one rationale for this. At the same time, tensions seemed to arise at least partly from the fact that the reports, while being voluntary, reported mostly obligatory costs, imposed to the company by the government through environmental permits.

We maintain that the notion of loose coupling (Weick, 1976; Perrow, 1984; Orton and Weick, 1990) can be used as a method theory (Lukka and Vinnari, 2014; Lukka, 2005) to provide better understanding of this complex organizational practice. Overall, we argue that the financial environmental information registered by the case company is loosely coupled on various dimensions in the organizational context.

First, environmental uncertainty is reflected in the way in which the registered figures are only loosely coupled with the guidelines set by both the authorities (Statistics Finland and Finnish Accounting Board) and the company. Established guidelines and instructions are in place, but they imply that cost-allocation and reporting processes would be highly standardized, when, in fact, the ambiguous nature of environmental issues leads to discretion and, therefore, inaccuracy. In addition, the registered financial environmental figures are loosely coupled with the case organization's actual production, which is conducted by numerous small subcontractors. As with the guidelines, uncertainty, ambiguity and definitional challenges incur loose coupling. This is amplified by the scattered geographic locations of company sites and their general diversity. Prior research has used the idea of loose coupling to explain how and why loosely coupled systems can be beneficial for an organization, through for instance slack and buffers which offers space for swift manoeuvring should some changes so require (see Collier, 2001). One key finding in the literature concerning loose coupling is that many organizations find it advantageous, even necessary. For instance, shielding organizational processes from performance measurement and creating budgetary slack are seen as ways to provide organizational space for action, lifting constraints that would otherwise limit decision-making (Modell, 2001; Lukka, 2007; Nor-Aziah and Scapens, 2007). It is however worth noting that unlike of for instance budgeting the figures of environmental expenditures and investments were here neither used for allocating of resources nor for performance appraisal. Instead, the (seemingly precise but effectively ambiguous) figures consist of ex-post descriptions of the use of resources. We hence maintain that for the case at hand the benefits associated with buffering are not the key aspect for enhancing our understanding of the nature of financial environmental information.

Second, there seems to be ceremonial conformity around environmental cost information and the organization's eventual environmental effects. In our case company, these figures discuss the past, which to an extent limits their role in management in comparison to more forward-looking information. In addition, the figures describing environmental expenditures and investments are resource measures, which by definition do not directly signify the eventual output delivered by those inputs. While environmental reports are created to satisfy external constituents, the information is not disconnected totally from decision-making. Instead, energy production is regarded as a highly politicized arena that is subject to regulation and in which environmental costs are regarded as the costs of staying in business. At times, the costs of environmental protection are acknowledged in decision-making, even though in practice, decisions are made according to standard investment appraisals and based on the financial bottom line. The use of financial environmental information for ceremonial conformity is well illustrated by the question of whether the environmental investments conducted by the case organization would in fact be mandatory, should they be analysed in a longer time horizon and contrasted with tightening regulatory demands. Nonetheless, the loosely coupled and ambiguous environmental investment figures give the organization flexibility to use these seemingly accurate figures in seeking to enhance its position in the eyes of the external constituents, as it is able to represent mandatory duties as voluntary deeds. Such use would be in line with prior research on corporate voluntary sustainability reporting, which has often been found to be aimed at enhancing organizations' external image (e.g. Cho et al., 2015; Boiral, 2013).

Third, the use of environmental cost information illustrates how loose coupling comes to exist in situations where multiple objectives exist. Our interpretation is that many of the interviewees believed in the importance of environmental protection for its own sake. Most were also fully aware of the media pressure towards their employer, and some also seemed to take the criticism somewhat personally. At the same time, profitability of operations had become a concern while the company was expected to increase its level of future environmental investments. In this kind of a situation, loose coupling between organizational processes, calculative practices and external disclosure extends beyond ceremonial conformity, and enables switching of purpose in calculating environmental cost information. It becomes advantageous for the company to have a system that appears accurate but also allows space for interpretation and is flexible enough to serve in various purposes ranging from the provision of statistics and shareholder information to alleged decision-making as well as other purposes. As in Modell (2001), the multidimensionality of the performance measurement both provides room for proactive management and also creates a requirement for loose coupling.

Even though the organization's top managers were aware that the figures were, to an extent, meaningless and that their use could even be counterproductive for environmental protection, financial environmental figures had been included in the annual reports for more than two decades and were increasingly being applied—the case company was striving to deliver the message that it was investing heavily in environmental protection despite its deteriorating financial situation. The figures seemed exact and trustworthy and, thus, were seen by some interviewees as useful for signalling the true commitment of the organization regarding environmental protection. This is in intriguing contrast with Milne and Patten (2002, p. 396), who point out that 'even where companies spend considerable sums of money on abatement equipment, there is no guarantee such expenditures will translate into safer and cleaner operations'. We maintain that these figures are not used directly in internal decision-making, but their significance is related more to the process through which they are constructed than to the eventual numbers (see Bebbington et al., 2009; Adams and McNicholas, 2007). The mere collection of environmental expenditure and investment information connects environmental issues with financials, thereby highlighting the significance of environmental issues. Collecting and producing monetized environmental information symbolizes its importance and renders environmental issues measurable and controllable by everyone. Still, it must be noted that as these figures were widely seen as important environmental indicators, they simultaneously side lined development and follow-up of alternative ways of measuring the environmental dimension of the organization's performance.

In seeking to explore explanations for corporate choices to disclose environmental capital spending, Cho and colleagues (2012; see also Patten, 2005) have called for further fieldwork-based studies on corporate financial environmental information. Our study answered this call and highlighted complexities related to constructing such figures and their subsequent ambiguous nature. Of course, these findings cannot be applied directly to other contexts, but we suggest that it would be useful to explore construction of these figures in other contexts and institutional environments. Nevertheless, concurring with Bebbington and colleagues (2012), we remain sceptical regarding provision of environmental expenditure and investment figures, which despite their seemingly accurate and precise form, appear to include mainly arbitrary and subjective allocations (see also Belkaoui, 1991). Our case study shows how accounting figures never are purely technical but always are, at least partially, a result of professional judgement (Ahrens, 1997; Bennett et al., 2006), and it confirms Malsch's (2013) assertions that this is especially so in social and environmental reporting. Still, figures can be influential and useful even if they are vague and

arbitrary—quantification is seductive, and such information often is considered natural and true, despite its decidedly narrow focus (see Chelli and Gendron, 2013).

As noted by Schneider (2011), the significance of environmental issues in the broader social context means that corporate accounting departments will be dealing with environmental issues increasingly in the future. In our case organization, we noted how accountants across the firm spent considerable energy seeking to develop and provide accurate environmental expenditure and investment figures. Nevertheless, we maintain that such efforts are largely irrelevant, especially if considered in relation to the broader social and environmental effects derived from corporate activity. At the same time, accounting provides powerful calculative devices that can be used to point resources and corporate activities in particular directions. Hence, in keeping with Schneider's (2011) assumption on the increasing relevance of environmental issues for accountants, we argue that fieldwork based on the development of accountants' work from an environmental standpoint would be most welcome. It would provide insights into how resources are used and could be helpful in developing new ways of accounting (Gray, 2010).

6. Implications and suggestions for further research

Several implications and avenues for further research can be drawn from the observations presented here. As a theoretical implication, we maintain that it could be worthwhile to explore further the possible linkages between loosely coupled systems and the processes of purification. The existence of loosely coupled systems of accounting, control and performance evaluation also are likely to lead to multiple evaluative principles being imposed on organizational actors. Accounting systems both embody evaluative principles (Annisette and Richardson, 2011) and are used as instruments in debates over legitimacy (Boltanski and Chiapello, 2005; Bourguignon and Chiapello, 2005). The aim for objectivity is a process of purification—if, or when, an accounting system reaches a 'purified' state, the evaluative principles invested in it become the 'truth' (see Christensen and Skaerbæk, 2010; Young, 2014), possibly tightening the coupling between accounting performance measures and further action. If we accept the key notion of loose coupling, then accounting purification—the legitimate claim of objectivity under varying orders of worth—has the potential to be a disruptive process, since the flexibility and adaptability that accounting figures have achieved via loose couplings in regard to reconciling multiple organizational goals may be diminished through tightening couplings. This may be particularly relevant regarding various social and environmental accounts, construction of which never is a purely technical exercise (Malsch, 2013), but instead is inevitably value-laden.

In regard to policy setting, our findings indicate that it could be worthwhile to conduct further research regarding the relevance of guidelines and information requirements postulated by institutions such as the Finnish Accounting Board and Statistics Finland. Official, public information represents purification of accounting, in which producing numbers is seen as a technical exercise untainted by value judgements (Christensen and Skaerbæk, 2010; Young, 2014). For instance, Statistics Finland has collected information regarding corporate environmental expenditures for more than two decades. However, the case study presented here highlights a number of challenges related to identifying, collecting and recording financial environmental information, placing doubt on the accuracy and, thereby, the relevance of such a public record (see Bebbington et al., 2012). Hence, further research would be welcome to explore whether the regulatory disclosure requirements set on organizations, as well as some specific public records, are helpful in providing relevant, useful information for various parties in society (Schneider, 2011).

Finally, our findings speak to the stream of quantitative research seeking to explain corporations' voluntary environmental, CSR and sustainability-reporting practices. In this literature, researchers often have placed high value on quantified information in general and monetary figures in particular. For instance, Beck and colleagues (2010, pp. 213–214) note that 'disclosing some numerical element may be of higher information value than one based more on discussion', and give the highest quality score to contextualized quantitative information, including environmental expenditures and investments (see also e.g. Hooks and van Staden, 2011; Aerts and Cormier, 2009; Al-Tuwaijiri et al., 2004; Wiseman, 1982). Clearly, there is a contradiction between this prior work and the findings presented in this paper. Through showing how seemingly accurate figures published in corporate disclosures may, in fact, be ambiguous and contestable, this paper highlights how figures published by corporations need to be approached with some care, in particular if they are to be used as proxies in scholarly work. Despite drawing on a single case study, we wish to question the premise that quantitative and/or monetary environmental information published in a voluntary corporate report is by definition of high quality and value. Therefore, and as monetary figures and quantitative indexes in the realm of sustainability accountability often are 'promoted as natural and inevitable' (Chelli and Gendron, 2013, p. 188), we argue that it would be relevant to conduct further research focusing both on how particular figures are constructed in organizational processes and on the various vested interests inherent in such processes.

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APPENDIX A: List of interviews and other data

	<u>Date</u>	<u>Position</u>	<u>Duration</u>	<u>Authors present</u>			
				<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1	22.09.2011	CEO	2h	x	x	x	x
2		Environmental director / group	2h	x	x	x	x
3		Environmental manager / group	2h	x	x	x	x
4	13.10.2011	CFO	1h	x	x		
5	27.10.2011	Business controller	45min	x		x	
6	27.10.2011	Financial manager	1h	x		x	
7	27.10.2011	Chief of accounting	45min	x		x	
8	27.10.2011	Group controller	1h	x		x	
9	11.11.2011	Project manager / finances	1h	x			x
10	11.11.2011	Production director / group	1h	x			x
11	15.11.2011	CCO	1h15m	x	x		
12	15.12.2011	Regional director / region A	1h15m	x			x
13		Group controller	1h15m	x			x
14	15.12.2011	Production and delivery officer / region A	45min	x			x
15	15.12.2011	Environmental officer / region A	45min	x			x
16	19.12.2011	Production manager / peat	1h	x		x	
17	19.12.2011	Regional manager / region B	1h	x		x	
18	21.12.2011	Project officer / region A	1h		x		x
19	21.12.2011	Subcontracting officer / region A	1h		x		x
20	09.01.2012	Development manager	1h	x		x	
21	09.01.2012	Regional director / region B	1h	x		x	
22	19.01.2012	Quality manager	1h	x	x		
23	19.01.2012	Environmental manager / peat	45min	x	x		
24	25.01.2012	Human resource director	1h	x			x
3	25.01.2012	Environmental manager / group	1h	x			x
25	25.01.2012	Business area director	45min	x			x
26	13.03.2012	Business controller / risk management	1h	x			

Material published by the case company

- Annual reports 1980–2011; CSR reports 2004–2007.

Supplementary dataset

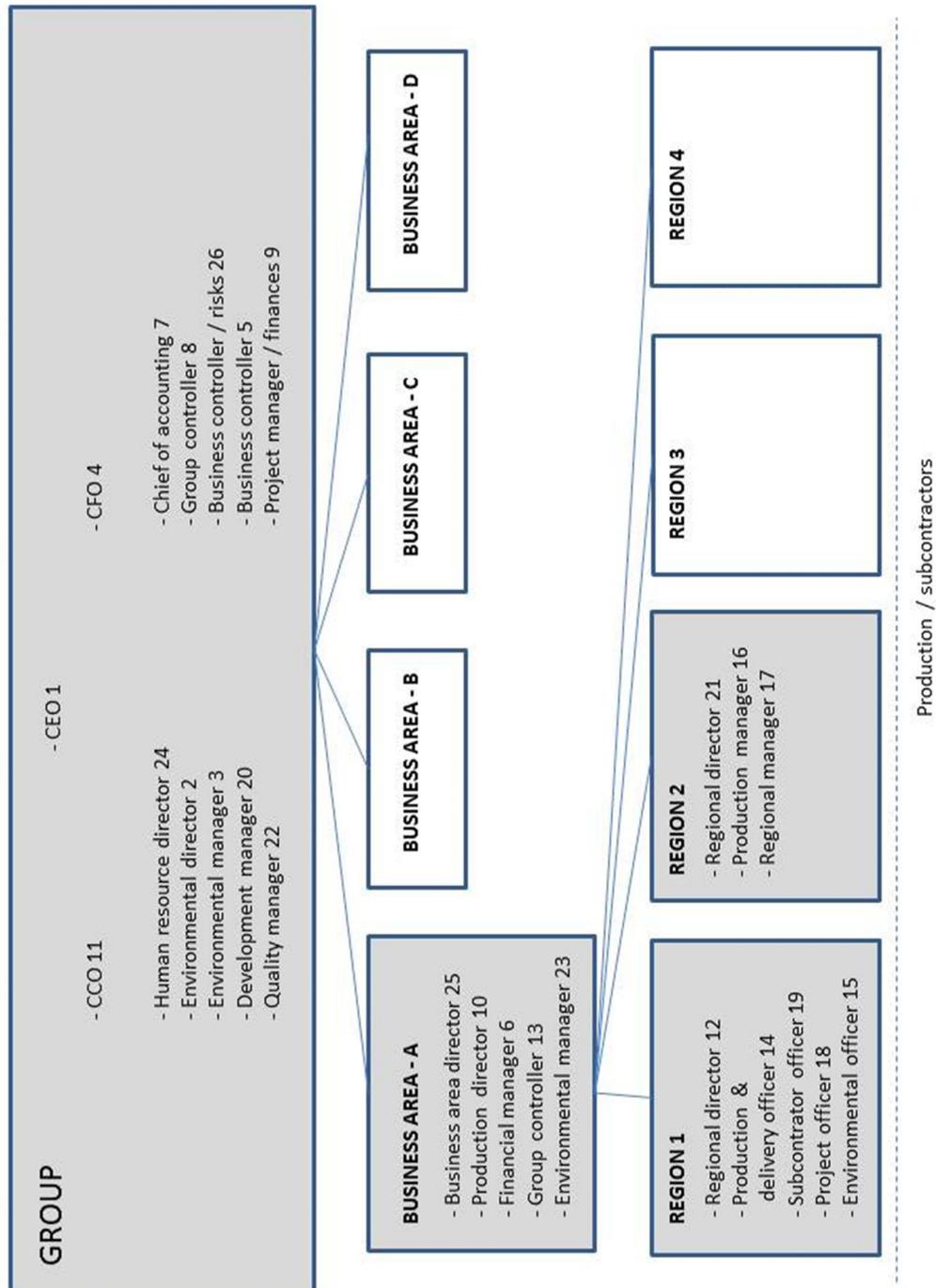
Media data – articles referring to the case company or peat from the following:

- Helsingin Sanomat (leading Finnish daily newspaper) 1995–2012
- Kauppalehti (leading Finnish business daily) 1995–2012

- Talouselämä (leading Finnish business weekly) 2000–2012
- Keski-suomalainen (regional newspaper) 2011–2012.

Appendix B: Data collection plan for the study and case organization's structure

- Shaded parts of the organization were targets of research
- Interviewees' numbers refer to the order in which interviews were conducted



Appendix C: Instructive themes for the interviews

Interviewee's background:

- Formal education, history within the organization (how long, which positions etc.)

How do environmental issues and corporate social responsibility show within the organization?

- In relation to the general aims of the activities
- How are they visible in everyday work and in decision-making in general?
- Has this changed during the time you have worked within the company?
How?

Your company has published environmental and, later on, corporate social responsibility reports from the late 1990s onwards. In your view, what is the role of this voluntary reporting for your company?

- o How do you make use of the reports within the organization?
 - § (Does anyone read them?)
 - § (Your feeling of the company more broadly? Do you read them yourself?)
- o How do the employees view the reporting and its role within the organization?
 - § Has this changed over the years? How?
- o What kind of a role does the report have in decision-making?
 - § (Does it influence decision-making?)
- o Why do you actually report on social responsibility and environmental issues?
 - § To whom do you report?
 - § (Do these groups make use of the reports?)

Could you tell us about the indicators that your organization uses in regard to environmental and corporate social responsibility?

- How are these indicators used within everyday work and decision-making?
 - o How are they used in relation to financial indicators?
 - o How are they used in relation to investment decisions?
 - o What is the role in subcontracting and subcontracting agreements?
- Do you have explicit targets?
 - o How are these set?
 - o How is the follow-up organized?

- In your view, how have these things changed during your time in the company?

How do you see the relationship between financial aims and environmental matters?

- Which issues primarily guide decision-making and activities within the company?
- How has this changed during your time in the company?