

Stand-alone and integrated reporting

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Abstract

Environmental reporting is the practice of an entity reporting on environmental matters. Environmental reporting can relate to an entity's priorities, policies and practices concerning environmental issues, the environmental performance of an entity and the environmental impacts the operations have. Environmental reporting can also, among other things, discuss how an entity is dependent on the environment and natural systems, the risks associated with environmental matters, as well as the entity's environmental responsibilities and accountabilities. This chapter focuses on the various forms these environmental reports published by organisations take, drawing on both foundational and contemporary research to provide an overview of the current state of knowledge.

This chapter introduces some key characteristics of environmental reporting which often also provide a basis upon which the practice can be evaluated. This is followed by a discussion of prominent frameworks which guide environmental reporting practice, as well as the institutions that develop and promote them, including GRI, SASB and <IR>. Some current and ongoing issues related to environmental reporting are then introduced, together with discussion of some broad questions relating to the role of environmental reporting in contemporary societies. The chapter ends with a consideration of potential areas for future research.

1. Introduction

Environmental reporting is the practice of an entity reporting on environmental matters. Environmental reporting can relate to an entity's priorities, policies and practices concerning environmental issues, the environmental performance of an entity and the environmental impacts the operations have. Environmental reporting can also, among other things, discuss how an entity is dependent on the environment and natural systems, the risks associated with environmental matters, as well as the entity's environmental responsibilities and accountabilities.

This chapter focuses on the various forms environmental reports published by organisations take. We discuss the common ways entities report on the environment, the characteristics of these reports and the most prominent frameworks that relate to the practice. To further contextualise and understand environmental reporting, we introduce some key issues and discussions surrounding the practice.

In line with the focus of this book, we refer in this chapter to environmental reporting. However, it is important to recognise that environmental reporting cannot be unproblematically separated from discussions of social and economic reporting. Furthermore, it is also important to recognise that environmental reporting can carry various labels, such as sustainability reporting, corporate social responsibility reporting and corporate citizenship reporting. While recognising that such labels are important (see Tregidga, Milne & Kearins, 2014; Laine, 2010), we do not distinguish between them here. Rather we discuss practices that, in general terms, fall under the remit of environmental reporting as we define it above.

There are several chapters which discuss various aspects of environmental reporting in this handbook. This chapter has been written with these in mind. So, while we will at times refer to aspects of theory and research methods, they are covered elsewhere and will hence not be a key focus here. Likewise, in seeking to provide a broad contemporary and critical perspective to environmental reporting practice it is inevitable that some historical insights are included. However, these are covered elsewhere so we direct the reader there for further discussion. And similarly, while we touch upon some norms and regulations as these are significant when looking into the reporting landscape, this handbook includes a chapter on this.

We structure this chapter as follows. After a short background to current environmental reporting we begin with a discussion of the most popular forms environmental reporting takes. We then introduce some key characteristics of environmental reporting which in many cases also provides a basis upon which the practice can be evaluated. We follow with a discussion of prominent frameworks which guide environmental reporting practice, as well as the institutions that develop and promote them. Thereafter we introduce some of the current and ongoing issues related to the practice of environmental reporting. The intent here is to introduce for reflection some broad questions relating to the role of environmental reporting in contemporary societies. We will end the chapter by discussing some areas for future research, especially those relevant for enhancing our collective knowledge of environmental reporting. Throughout the chapter we draw on both foundational and contemporary research to provide an overview of the current state of knowledge.

2. Background to Current Environmental Reporting Practice

Environmental reporting has developed into a mainstay feature in many organisations (especially large corporations) (see KPMG 2017)¹. While a small number of pioneering organisations were providing some environmental information in the early 20th century (Guthrie & Parker, 1989), environmental reporting begun to gather more serious momentum in the 1990s (Gray & Bebbington, 2001). Environmental reporting can now be seen as a fairly standard practice for large commercial organisations. It is also increasingly common practice in public sector organisations, small and medium-sized enterprises (SMEs), non-government organisations (NGOs) and other entities such as cities, states and countries. Furthermore, while early reporting diffused more swiftly in countries like UK, Australia and France, environmental reporting is now established as a global practice with a rapid growth in countries in Asia and South America in particular (KPMG, 2017).²

It is worth noting from the outset that environmental reporting practices are not uniform. One of the reasons for this is that environmental reporting continues to be mostly a voluntary practice. While an increasing number of regulatory frameworks have emerged for some forms or aspects of such reporting, organisations can, for the most part, decide whether they want to engage in environmental reporting. This includes decisions on what information they include (and exclude), and how they present it. In this sense environmental reporting differs from financial reporting for which there are often strict and detailed regulatory frameworks in each jurisdiction. There are, however, several frameworks for environmental reporting, which have been developed to help organisations produce environmental reports. We discuss these in more detail below.

Despite environmental reporting becoming common practice in many societies, discussions on the role and relevance of environmental reporting continue (Andrew and Baker, 2020). To better understand how and why organisations publish environmental information, academic research has for many years analysed how things like organisational size, industry, geographical context, financial position and prior environmental performance, to name but a few, affect an entity's environmental reporting practices (for an early example see Adams, 2002). As environmental reports are mostly voluntary and there is no formal audit mechanism to verify the information, there continue to be concerns regarding the credibility of the reports and discussion whether they are primarily about greenwashing (Cho, Guidry, Hageman & Patten, 2012; Diouf & Boiral, 2017; Milne & Gray, 2013). The investment community, especially in recent years, has shown interest in environmental performance and related environmental reporting (Michelon, Rodrigue & Trevisan, 2020), and there are ongoing debates regarding whether environmental disclosures are useful for investors' decisions (see Cho, Laine, Roberts & Rodrigue, 2015). In addition to external audiences, environmental reports have relevance inside the organisation. For example, management can use such reports in an attempt to develop organisational culture with regards to environmental issues (Adams & McNicholas, 2007). So, while it remains unclear how widely environmental reports are read, there are various audiences for which there would appear to be some relevance.

¹ KPMG has produced international surveys of corporate environmental reporting practices for almost three decades. The first edition was published in 1993 with updates every two or three years. These reports are a valuable source for an overview of the current state and historical development of corporate environmental reporting.

² A more detailed discussion of the development of environmental reporting practices is presented in Chapter 2 (see also Buhr, Gray & Milne, 2014; Gray & Bebbington, 2001; Gray, Adams & Owen, 2014).

3. Environmental Reporting Forms

In this section we discuss the various forms environmental reports can take. This helps understand the practice and the various ways in which organisations report on the environment to stakeholders.

Stand-alone Environmental Reports

In the early stages of the development of environmental reporting it was common for the environmental report to be a separate stand-alone report (again see Chapter 2). That is, prepared and published separately from the annual report containing an entity's financial reporting. Stand-alone environmental reporting often follows the same reporting cycle as the financial report, implying that the environmental report is published on an annual basis either alongside the financial report or afterwards with a minor delay. An annual environmental report usually focuses on the same time period as the financial report. Some organisations, however, prefer to publish their environmental report less frequently, such as every two years. While in the early stages environmental reports were often published only as paper versions, now organisations usually make the stand-alone environmental report available as pdf files on their website.

Despite the emergence of other forms of reporting introduced below, stand-alone reports are an attractive research site and continue to be the focus of much research in the area. While this is likely due to their long history and the advantages of them being produced on a regular basis, they also, for many companies, remain a major, and arguably the most comprehensive source of environmental information for which the organisation has editorial control (Tregidga, Kearins & Milne, 2013).

Integrated Reports

More recently, and in light of an increasing recognition of the need for environmental reporting to be seen as important as financial reporting, there is an increasing trend towards what can be referred to as an integrated report – a report containing an entity's environmental and financial information (usually including social information also). These can have some similarities to stand-alone reports, as they are for example usually prepared annually and often appear online as pdf files. However, the key difference relates to the attempt to integrate environmental, social and financial dimensions into one reporting format.

Integrated reporting is not without its challenges, however. The “best” way to report, and how one might integrate the financial and non-financial reporting are ongoing issues. Integrated reports hence come in many forms, and the emphasis given to different types of information can vary substantially from one organisation to the other. Integrated reports have also been the focus of research in the area. Increasingly research on integrated reporting has focused on the form promoted by the IIRC discussed further below (see Rinaldi, Unerman & de Villiers, 2018).

Web-based disclosure

In addition to stand-alone and integrated environmental reports, other forms of environmental reporting which take place in the digital world are popular. Web-based reporting refers to the broader spectrum of reporting beyond the pdf-versions of environmental reports published on an organisation's website. While web-based reporting can be simply a replication of environmental information which also appears in a pdf version, it can also include different or alternative information and make use of the technological advantages of the medium (Adams & Frost, 2006). For example, web-based reporting allows for real time communication with more immediate and frequently updated information. It also increases opportunities for stakeholder interaction (for an early example, see Unerman & Bennett, 2004). There has been long term interest in and analysis of web-based environmental reporting, however, it has not been as well researched as stand-alone and integrated reports.

Social Media Reporting

As the digital world becomes more dominant, environmental reporting using these platforms has evolved and many organisations now communicate and provide information through various social media channels on a frequent basis (She & Michelon, 2019). As such, social media is another way in which organisations report on environmental matters. Environmental reporting through social media occurs at a faster pace, it can be targeted at specific stakeholders, and offers opportunities for stakeholder engagement (Bellucci & Manetti, 2017; Manetti & Bellucci, 2016). Indeed, social media has the potential to reach a substantially different set of stakeholders from the other forms of reporting discussed. However, reporting on social media is not without challenges for an organisation. A single post can suddenly become viral, spreading unexpectedly to audiences well beyond the original target group, and also becoming potentially uncontrollable.

In essence, while more traditional forms of environmental reporting often focus on providing a more comprehensive and regular view of an organisation's environmental activities, reporting on social media tends to be focused on a more limited scale, such as particular actions, single incidents or otherwise temporally constrained events. Social media disclosures are potentially turning into an entirely different form of environmental reporting complementing the more traditional forms and providing an opportunity to rethink understandings of environmental reporting and related accountability relationships. While being limited in research focus at present, it can be expected that research in this area will continue to grow (Arnaboldi, Busco & Cugenesan, 2017; Saxton et al., 2018).

Summary

There are many different forms of environmental reporting. Stand-alone and integrated reporting continue to be the key practices with a regular reporting cycle, while the increasing use of websites and social media further extends and develops environmental reporting. While recognising these various forms, from this point on we focus this chapter on stand-alone and integrated reporting only. We focus our discussion so as to examine the characteristics of these forms of reporting as well as consider the context within which they are situated. We begin this discussion with a look at some of the key characteristics of stand-alone and integrated environmental reporting which assist us in further understanding this practice.

4. Key Characteristics of Environmental Reporting

As noted, environmental reporting is largely a voluntary activity. Organisations have substantial freedom with regards to how they report. It is hence relevant to ask, what characteristics might we expect a "good" environmental report to have, not only in relation to *how* information in a report is presented, but also *what* information the report includes. While in financial reporting most organisations are expected to produce their reports according to the same principles and templates, with environmental reports such uniformity does not exist. Furthermore, it might not even make as much sense. For instance, relevant environmental matters for a mining company are likely to be different from a food and beverage firm. Stakeholders also go beyond financial stakeholders, and as different organisations have different stakeholder responsibilities, this can further complicate things.

Despite these challenges, the content of an environmental report is closely related to three related concepts: boundary, materiality and accountability. Reporting boundaries relate to the question of which operations are included in a report. In financial reporting boundaries are set based on ownership and control. There are often clear rules regarding how different types of entities are included in the financial report. In

environmental reporting the boundaries and scope of the report are less clear (Antonini & Larrinaga, 2017; Unerman, Bebbington & O'Dwyer, 2018). For instance, an organisation's main environmental impacts may take place in an outsourced factory located upstream in the supply chain, as would be the case for many retailers selling fast fashion clothing. Alternatively, CO₂-emissions from oil production take place mostly downstream, as oil is for instance burned to power airplanes or cars. The question hence becomes how broad or narrow should the scope of an environmental report be.

The second key concept is materiality. Materiality refers to identifying the most relevant issues for environmental reporting and is closely related to reporting boundaries. Materiality is a complex concept as, for example, different issues can have very different levels of significance to different people, in different contexts, and at different points of time (Edgley, Jones & Atkins, 2015; Puroila and Mäkelä, 2019). It is therefore important to know how materiality is understood by a reporting organisation including which criteria they have used to evaluate material items. Materiality is also an important consideration for researchers (Unerman & Zappettini, 2014). As you will see below, the major environmental reporting frameworks have different approaches to materiality.

The third important concept is accountability. In simple terms, accountability relates to the duty to provide an account of the actions over which one is considered to have responsibility (Gray et al., 1996). For organisations, this would imply that they should provide information on their activities and the implications these activities may have had. The key thing to note here is that we are talking of duties going beyond the legal requirements. That is, while there might not be a legal duty for an organisation to provide information, there might nonetheless be a moral duty to do so. This is not that simple however. Different organisations, stakeholders and societies have different views for instance on what kind of responsibilities organisations have in societies, as well as on what kind of information, to whom and how should organisations then provide in addition to that required by law. In essence, accountability is a contested idea, with the key environmental reporting frameworks discussed below looking at it in different ways. Still, it is a central concept in discussions regarding organisations' environmental reporting (see Dillard & Vinnari, 2019).

Setting the reporting boundaries and identifying material issues as part of accountability relationships help in setting the scope of a report and deciding which items should be reported on, but they do not yet specify how the reporting should be done. For this, there are some common characteristics, which are often considered to be features of a high-quality environmental report (see Table 1). While some of these might feel self-evident, such as expectations regarding reliable, clear and comparable information, environmental reports are often found to be lagging in various ways (Diouf & Boiral, 2017; Michelon, Pilonato & Ricceri, 2015). Again, this is closely related to the fact that environmental reporting continues to be mostly a voluntary practice with a reporting entity having substantial control over what is included in the report, how the information is presented, and which aspects might potentially be omitted altogether.

Table 1: Characteristics of Environmental Reporting

Concept	Description	Points to consider
Accuracy	Information in a report should be sufficiently accurate and detailed to allow readers to assess an organisation's performance.	Organisations are at times vague when presenting negative information. Are graphs and tables structured properly, or have they been skewed or distorted?
Balance	A report should include both positive and negative aspects so that users can assess the overall performance of the organisation.	Organisations often emphasise positive information. Frameworks and assurance practices hope to help in getting more balanced reports.
Clarity	Information in a report should be presented in a clear, understandable and accessible form.	User groups vary in their knowledge and ability to understand information. What is complex to some can be self-evident and simplistic to others.
Comparability	Information should be selected, compiled and reported consistently. It should allow analysing changes both over time and in relation to other organisations where possible.	Reporting frameworks can help by providing standard practices. Does the organisation provide information from previous years to allow reader to see trends and developments easily?
Reliability	Reported information should be based on reliable processes, which could also be subject to independent evaluation.	Implies that in addition to the reported information it is also relevant to discuss how the information has been collected.
Stakeholder inclusiveness	An organisation should identify and engage stakeholders, and discuss how it has responded to their expectations and interests	Stakeholder groups can have very different expectations. Different forms of reporting have different audiences, who can have varying expectations.
Timeliness	Reports should be published on regular schedule and in a timely manner so that it allows the report users to make informed decisions.	Web-based reporting can often be more timely, but an annual and regular reporting cycle can have other advantages. Timeliness is not just about speed, but also regularity.

Overall, the characteristics listed above are not clear cut. An organisation and its various stakeholders might for instance understand accuracy and balance in a very different ways, and hence have different expectations regarding what should be reported on and how it should be reported (Rodrigue, 2014; Diouf & Boiral, 2017). It has been suggested that assurance might be a potential avenue to enhance the quality of environmental reporting, as such a third-party statement could give the readers more confidence in the reported information (see Chapter 11 for more details). Still, both the organisations preparing the reports and their stakeholder using the information keep looking for more standardized practices to emerge, as these would make both preparing and using environmental reports easier.

5. Environmental Reporting Frameworks

As environmental reporting has become more common there have been various attempts to establish frameworks to promote and guide the practice. We discuss three frameworks here: GRI, published by the Global Reporting Initiative, Integrated Reporting <IR>, published by the International Integrated Reporting Council, and SASB, published by the Sustainability Accounting Standards Board. Other environmental reporting frameworks and initiatives exist, including the CDP, which focuses on collecting information on

climate and water in particular (see Andrew & Cortese, 2011; Ascui, 2014), and the TFCF (Task-Force on Climate Related Financial Disclosures), which emphasises taking a financial perspective on climate and carbon issues (O’Dwyer & Unerman, in press). However, the three selected here for further discussion are arguably amongst the most widely recognised and influential, and they also represent three different approaches to stand-alone and integrated environmental reporting.³

Table 2 summarises key features of each framework before we discuss each in more detail, including some relevant insights from academic research. The stated missions show how each framework conceptualises the role and function of environmental reporting in different ways. Moreover, both the primary audiences of the reports and the key concepts through which the frameworks are structured also differ, which leads to differences in how the reports look and how they are structured. The frameworks also influence what information is included in a report and relatedly, and perhaps more importantly, what information is excluded. Moreover, the frameworks also include guidelines and instructions on how particular issues are to be reported as well as on what kind of qualitative and quantitative indicators should be used.

Table 2: Overview of Key Environmental Reporting Frameworks

	Global Reporting Initiative (GRI)	International Integrated Reporting Council <IR>	Sustainability Accounting Standards Board (SASB)
Founded	1997	2010	2011
Aim	To empower decisions that create social, environmental and economic benefits for everyone.	Establish integrated reporting and thinking within mainstream business practice as the norm in the public and private sectors.	Establish industry-specific disclosure standards across environmental, social, and governance topics that facilitate communication between companies and investors about financially material, decision-useful information.
Main users for the report	Stakeholders at large	Mainly investors, but also others	Financial markets, investors
Key concepts	Materiality, accountability	Integrated thinking, value creation	Financial materiality, decision-usefulness, value relevance

The Global Reporting Initiative (GRI)

The GRI has arguably been the most influential and widespread reporting framework for sustainability reporting. The GRI publishes standards and guidance documents, developed taking a multi-stakeholder approach, to promote and support the practice of sustainability reporting. Since the first set of guidelines were published in 2000, the GRI frameworks have developed through several iterations into their current format (Levy, Brown & de Jong, 2010). Of the prominent environmental reporting frameworks, GRI provides the most detailed and structured guidelines for organisations to follow. A separate standard is provided for various environmental topics, such as material use, energy, water and climate. In each of these topics, there are several detailed disclosure standards providing guidance on how an organisation should report on the

³ It is worth noting that in November 2020 the SASB and the IIRC announced plans to merge and to become the Value Reporting Foundation, illustrating the shared goals and interests of these two institutions. This development highlights the continuous evolution of the reporting landscape.

topic, how it should be assessed, and what kind of qualitative and quantitative information should be provided. It needs to be noted however that organisations are not expected to include all the topics in their reports, but they should instead conduct a materiality assessment to identify the most significant ones.

In international surveys, it has been noted that within the largest private corporations across a range of countries, the GRI framework has been followed by more than half of the companies (KPMG, 2017). In addition, a range of other types of organisations, such as universities, publicly held utilities and NGOs are known to prepare their reports following the GRI framework. The popularity of the GRI framework has helped facilitate the production of environmental reporting, as organisations have been able to report against a widely accepted framework, with guidance regarding how particular indicators should be measured, assessed and understood. Likewise, this development has most likely also made it easier for stakeholders to assess environmental information, since there is some similarity between how organisations provide their disclosures enabling some comparability.

Several key questions remain, however. Take for instance the materiality assessment mentioned above, which organisations should use to determine which topics should be discussed in their environmental reports. According to the materiality approach promoted by GRI, each reporting organisation should identify which aspects are producing the most significant environmental impacts, or might substantively influence the assessments of the organisation's stakeholders, and then focus on these in their reporting. While such an assessment is often represented as a fairly neutral and technical procedure, Puroila and Mäkelä (2019) highlight how materiality can be seen as a political choice including value-laden judgments, and as such can have implications on the accountability relations as well as on how sustainability is seen and discussed in the organisational context.

As the GRI framework has in each iteration included a comprehensive list of indicators, researchers have used it as a basis to develop criteria for content analysis methodologies, which have been used to study, for instance, how environmental reporting practices have evolved over time and how practices differ across contexts or industries. At the same time, discussion continues with regards to whether or not the increased use of the GRI framework has enhanced the quality of environmental reporting (e.g. Milne & Gray, 2013). While the GRI framework aspires to help organisations produce reliable and high-quality information, Diouf and Boiral (2017), for instance, point out how stakeholders using environmental reports produced according to GRI guidelines are sceptical of the reliability and quality of the information. Questions have also been presented on whether organisations actually comply with the reporting guidelines, and as a result of whether the environmental information provided is comparable or sufficiently unambiguous for evaluation and decision-making purposes (e.g. Michelon et al. 2015; Moneva, Archel & Correa, 2006).

Despite its shortcomings, GRI continues to be the go-to choice for many reporting organisations. Moreover, whereas the other two prominent frameworks we discuss here, <IR> and SASB, are more focused on developing environmental reporting for the needs of the investors, GRI has a broader focus. It emphasises that environmental reports should be prepared for a broader group of stakeholders and also notes that these reports should function as an accountability mechanism, which does not only focus on the potential financial implications environmental issues can have for an organisation.

Integrated Reporting (<IR>)

When discussing environmental reporting practices, it is relevant to distinguish between integrated reporting in general, which refers to a reporting form where economic, social and environmental issues are included in a single report, and Integrated Reporting (hereafter <IR>), which refers to specific reporting framework

developed and promoted by the International Integrated Reporting Council (IIRC). It is the latter that we focus on here as it represents a key reporting framework.

<IR> has been a visible and broadly discussed initiative in the reporting sphere since it was established in 2010. The <IR> framework has as its key concepts six capitals (financial, manufactured, intellectual, human, social and relational and natural), integrated thinking and value creation (see IIRC, 2019). The underlying theme of <IR> is integrated thinking, which is used to describe a new way of seeing businesses and value creation processes. This includes highlighting that financial, social and environmental matters (represented through the six capitals) should be considered as intertwined rather than separate (a key critique of other approaches, including the GRI). <IR> takes a strategic and future orientation which also differentiates <IR> from usual reporting practices focusing more on past performance. In terms of guidance however, the <IR> framework does not offer any specific guidance or template for reporting, and hence organisations have flexibility with regards to how they produce their report.

While it is often emphasised that the <IR> initiative should not be seen as a sustainability or CSR report, it is often discussed side-by-side with sustainability reporting frameworks such as GRI and may hence appear to be serving the same purpose. The initiative has also received active support from the big global accounting firms as well as other major commercial organisations (Rinaldi et al., 2018). The emergence of <IR> to the corporate reporting landscape, as well as its substantial promotion by powerful social actors, has arguably had an effect on how some organisations report on their environmental issues, how different stakeholder groups and society more broadly understand reporting, and how particular concepts, terms and expressions are used and understood.

Despite the prominence of <IR> in many arenas, the true essence of the <IR> initiative remains unclear (Brown & Dillard, 2014; Humphrey, O'Dwyer & Unerman, 2017). Organisations appear to be publishing <IR> in some contexts, like South Africa, Japan or the Netherlands, although at the same time many maintain that they are yet to see one (Gibassier, Rodrigue & Arjaliès, 2018). The <IR> initiative speaks of enhancing our understanding of how different types of capital, including natural capital, are needed for an organisation to succeed, yet the implications of this type of reporting for stakeholders or the broader society remain unclear (Tweedie & Martinov-Bennie, 2015; Flower, 2015; Rinaldi et al., 2018). Similarly, it remains an open question whether this type of reporting has the potential to change our conceptualization of value and value creation. As such, it is likely that scholarly discussion around integrated reporting will continue and provide us with more critical insights on this developing phenomenon.

Sustainability Accounting Standards Board (SASB)

SASB is a US-based initiative launched in 2011 which seeks to establish a set of reporting standards for corporations. SASB explicitly aims at developing an environmental reporting practice that would be relevant for investors. This makes it closer to the approach of IIRC which focuses on providers of financial capital than GRI which takes a much broader range of stakeholder views into account. This narrow stakeholder focus within SASB also means that the understanding of materiality is significantly different: the material aspects for each industrial sector get defined through the potential financial implications an environmental aspect can have for businesses in that sector. SASB's idea is to limit environmental reporting to a smaller number of aspects, allowing more concise reporting and hence keeping the reporting costs lower for both producers and users of the reported information.

It remains to be seen how SASB will eventually be received by organisations and the investment community. While draft frameworks have been available for some time, SASB published its reporting framework for 77 industries only in November 2018. Current research on SASB and its potential implications is therefore still

scarce. It appears, however, that in the financial markets there is considerable interest for concise and supposedly comparable environmental information. Indeed, the investment community appears to be seeking ways to better understand the potential significance of environmental issues for different firms and industries (Michelon et al., 2020).

Accounting researchers are also starting to employ SASB's framework in their studies. Scholars have for instance begun to analyse whether the materiality considerations presented by SASB would be value-relevant for investors, and whether stock market reactions would be different when firms are disclosing CSR information falling into different categories on the SASB's materiality classification for a particular industry (Khan, Serafeim & Yoon, 2016). These topics are significant also for SASB, which explicitly aims at enhancing the value-relevance of CSR information for investors. Christensen, Hall & Leuz (2018) however point out in a broad literature review that the adoption of CSR standards will not by itself lead to harmonized CSR reporting practice, as firms are for instance able to use boilerplate language or otherwise provide vague information. Moreover, as suggested by Christensen et al. (2018), the position of SASB and its reporting framework in the US context is still unclear. The landscape of environmental reporting in the US in general and related to SASB in particular, continue to develop, and as such early research evidence needs to be approached with caution (see Roberts, 2018).

Summary

We have discussed three prominent frameworks for stand-alone and integrated environmental reporting. It is worth pointing out here that there are no separate frameworks or guidelines for web-based or social media reporting. These can obviously be informed by the frameworks discussed above, as many organisations may for instance simply reproduce in their social media disclosures some information prepared earlier for a stand-alone report.

In general, while the frameworks discussed approach aspects of environmental reporting from different perspectives and have varying priorities, they all arguably aspire to enhance both the quantity and the quality of environmental reporting, to make it more comparable and useful for those using the reports, and also to aid those producing the reports. Taken together, it is reasonable to state that the frameworks have improved the amount of environmental reporting present in societies, as well as made some progress in the content of those reports. At the same time, however, it is important to raise questions as to the role and value of environmental reporting for organisations in relation to improving performance, for broader society, and perhaps most importantly whether the reporting function assists organisations to address the underlying environmental challenges that such reports are often seen to relate to (Tregidga et al, 2014; Laine, 2010; Gray, 2010; Spence, 2009).

6. Current and Ongoing Issues and Questions Related to Environmental Reporting

While environmental reporting has developed into a significant area of practice and research, plenty of ongoing debates and questions remain. Discussions are largely centred on how environmental reporting practices might continue to improve both the quantity and quality of reported environmental information. However, questions also remain as to whether or not reporting, at least in its current form, is useful in moving organisations towards greater accountability and sustainability in the first place. While these issues are numerous, here, due to space constraints, we discuss just a few of the key ones discussed in the literature.

Talk vs Action

Despite what may be considered improvements in environmental reporting, a discrepancy between organisational talk and action continues to be a key concern to researchers. Environmental reports are often noted to represent the reporting organisation in a (overly) favourable light, rather than present a more balanced picture, a phenomenon often referred to as impression management (e.g. Brennan & Merkl-Davies, 2014). It appears that the voluntary frameworks continue to leave space for organisations to use the reports as vehicles to improve their reputation – rather than provide a “warts and all” account of their performance. While some have argued that differences between organisational talk and action should be tolerated, as such aspirational talk could spur organisational development and thereby improve performance over time (e.g. Schoeneborn, Morsing & Crane, 2019), others consider such a gap to be problematic, as it gives stakeholders a misleading picture of an organisation’s impacts and performance (Cho, Michelon & Patten, 2012).

Moreover, the existence of a performance-portrayal gap (Adams, 2004), that is the gap between an organisation’s performance and the way in which it presents itself in the report, is also noteworthy from a research perspective. As the prominence of sustainability continues to grow in the business world and in wider society, the attention scholars give to this area has also increased substantially. Here, and related to quantitative mainstream accounting research in particular, there continues to be some tendency for scholars to use information about organisational environmental reporting as a proxy for environmental performance (Gray & Milne, 2015; Roberts, 2018; Roberts & Wallace, 2015). The underlying reason might be that while data regarding environmental performance and organisational actions may be hard to collect, data on reporting practices or other types of aggregated information are more readily available on various databases. Using valid and rigorous constructs is a key element of producing reliable research findings, and it is worth asking how such conflation of talk and action affects the broader body of knowledge we have on environmental reporting and its societal implications (Laine, Scobie, Sorola & Tregidga, 2020).

Regulation

To remedy the observed impression management and difference between talk and action, it has been suggested that stronger regulation should be introduced and enforced, or alternatively that independent third-party assurance would aid in enhancing the quality of the reported information. However there is an ongoing discussion regarding whether regulation in fact would help improve the reliability, quality and usefulness of environmental reporting, and if so, under which conditions this would occur. With regards to SASB, Christensen et al (2018) have argued that regulation is unlikely to lead to major changes, unless it is strictly enforced and comes with a sufficiently strong assurance function. Similarly, research conducted in other contexts has noted that the introduction of new reporting requirements does not necessarily result in better information for various reasons. For example, organisations might not comply with requirements, there might be other unexpected implications, or the enforced disclosures might not be in-line with what would be expected by stakeholders (Grewal, Riedl & Serafeim, 2019; Situ & Tilt, 2018; Fallan, 2016; Bebbington, Kirk & Larrinaga, 2012).

In this context it is also significant to recognise how the proliferation of the various standard-setters, such as GRI, <IR> and SASB, potentially play a role in a shift from traditional public governance towards a model of private governance in the area of environmental reporting (e.g. Eberlein, 2019; Thistlethwaite & Paterson, 2016). Obviously, these frameworks are just one of the factors affecting how environmental reporting takes shape and develops, but they are powerful. The power and influence of the various frameworks, or more specifically the institutions who develop and promote them, happens through multiple avenues. Reporting frameworks for instance affect the terms and concepts used in reports, thus influencing the tone of the reports as well as potentially impacting which aspects appear to be more set and taken-for-granted and which ones seem to be more open for discussion (see Tregidga, Milne & Kearins, 2014). This takes place for

instance through the materiality considerations used for deciding which topics organisations should include in their environmental reports (Puroila & Mäkelä, 2019). Taken together, the reporting frameworks are arguably highly influential as they affect which environmental aspects are discussed in the reports and how, which stakeholders are prioritized or alternatively considered secondary, which type of accountability is being promoted, and on a broader level, which environmental issues and questions are framed as primary and perhaps governable (see Levy, Brown & de Jong, 2010; Thomson, Grubnic & Georgakopoulos, 2014; Rinaldi, 2019).

Assurance

Ongoing discussions also relate to the potential effects of assurance in the area of environmental reporting (see also Chapter 11). The accountancy profession is increasingly interested in environmental matters (see also Chapter 5) and the major accounting firms provide assurance services, the use of which could serve in enhancing the quality of the reported environmental information. These assurance services are, however, fundamentally different from the financial audit function (O'Dwyer, 2011). While the latter is strictly regulated and a mandatory element of the financial reporting system serving to reduce the information asymmetries between the owners and the management, in the context of environmental reporting the scope and type of assurance is set by management, which also has implications on the assurance report produced. As such, while often called for as a potential solution to improve the quality of reporting, it remains uncertain whether assurance does, at least in the current setting, have the potential to substantially change the features of environmental reporting (Michelon, Patten & Romi, 2019).

Counter Accounting

While the issues discussed above relate to how we might improve the practice of environmental reporting, there also remains an ongoing concern as to the ability for environmental reporting in general to serve accountability purposes or to assist in societies' broader transition towards sustainability. These concerns are related to the above issues and the ability for organisations to use such reports for their own purposes. For some, practices referred to as external accounting or counter accounting hold some potential. Counter accounting (sometimes also called external accounting) has been defined as "accounting for the other by the other" (Medawar, 1976). That is, it is when an individual or group external to the organisation provides an account of its impacts and/or performance, often in response to no or inadequate reporting from the organisation itself. Such accounting can be seen as a means to highlight the perceived deficiencies in social and environmental accountability and reporting practices of organisations (Dey, 2007) by creating new visibilities, new representations (Dey, Russell & Thomson, 2011) and are often noted as having potential emancipatory potential (e.g. Gallhofer, Haslam, Monk & Roberts, 2006). In short, the practice of external and counter accounting is a potential way in which to consider the limits of current environmental reporting, perhaps limits that cannot be overcome through efforts to improve organisational environmental reporting due to the inherent context and system within which these accounts are prepared (e.g. Denedo, Thomson & Yonekura, 2017; Tregidga, 2017; Vinnari & Laine, 2017).

7. Concluding Comments and a Note on Further Research

We have discussed the forms that environmental reports take as well as the characteristics, frameworks, and issues that surround stand-alone and integrated reports. As is hopefully clear, despite their relatively long history, and despite a lot of scholarly attention being focused on environmental reporting over a long period, there remains uncertainty as to the ideal form such reporting should take and also how we, as environmental accounting researchers, might assist in improving such practices. This includes whether or not our attention

would be best served elsewhere in efforts to enhance transparency and accountability (Laine et al., 2020; Milne & Gray, 2013; Roberts, 2018; Tregidga, Milne & Kearins, 2018).

What should also be evident is that environmental reporting, and the various forms it takes whether stand-alone, integrated, web-based or social media, is an area where further research is required. For example, further research on the frameworks that guide such practices, and research on the institutions that govern it, would seem particularly pertinent. With more and more standards and frameworks being developed and promoted, all with different foci and agendas, research on this aspect of reporting, including the power and politics of their development as well as the impact and effect of the frameworks and standards on reporting, from multiple perspectives, is needed (see Eberlein, 2019; O'Dwyer & Unerman, in press; Unerman et al., 2018).

We would also encourage a consideration of the need for further research at the intersection between environmental reporting forms and the topics of the other chapters in this text, such as extending theories and methods used to analyse stand-alone and integrated reporting, scrutinizing the relationships between environmental reporting, assurance and the accounting profession, as well as discussing the complex interplay between corporate reports and external accounting. We would also note that research into the reporting aspect of each of the topics outlined in Part E of this book also provides a myriad of opportunities.

In finishing this chapter, we would like to urge researchers interested in environmental reporting to be reflexive in their approach and have a critical awareness of the potential, and limits, of such reporting in relation to the achievement of more sustainable organisations and societies.

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