Cooper, S. M., & Michelon, G. (Accepted/In press). Conceptions of materiality in sustainability reporting frameworks: Commonalities, differences and possibilities. In *Handbook of Accounting and Sustainability* Edward Elgar Publishing.

Peer reviewed version

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Conceptions of materiality in sustainability reporting frameworks: Commonalities, differences and possibilities

Stuart Cooper
University of Bristol
School of Accounting and Finance
s.m.cooper@bristol.ac.uk

Giovanna Michelon
University of Bristol
School of Accounting and Finance
Giovanna.michelon@bristol.ac.uk

Accepted version
Forthcoming (2022) in the Adams, C A (editor), Handbook of Accounting and Sustainability, Edward Elgar Publishing Ltd

Abstract

Over the last twenty years sustainability reporting standards and frameworks have developed and proliferated. In this chapter we provide an overview of a range of the most influential frameworks before focussing upon how they each conceptualise materiality. We do so as we believe that materiality is core to the practice of sustainability reporting. We conclude that materiality remains ambiguous and contested. The sustainability context is complex, and it is, therefore, problematic to seek simple solutions to the questions as to who are the key users and what is the material content for sustainability reporting. This is especially apparent given the interconnected and long-term nature of the sustainability issues that we face. We argue that it is the (stakeholder) accountability purpose, rather than the valuation and stewardship roles, that should be paramount in materiality determination processes.

Keywords: materiality, GRI, Integrated Reporting, SASB, Sustainable Development Goals, Climate-related Financial Disclosures

Introduction

This chapter offers an overview of the various perspectives on materiality adopted by different sustainability reporting standards and frameworks. It is timely to examine this as both sustainability reporting standards and frameworks and the concept of materiality are increasing in prominence and importance. We acknowledge that studies to date have found disclosures of materiality assessments to be somewhat limited and lacking detail (see for example Beske et al., 2020; Farooq et al., 2021), but the materiality concept has proven to be a key principle within sustainability reporting standards and frameworks. These frameworks suggest materiality to be a fundamental principle in determining the content of sustainability reports and, as it is hoped that through mechanisms such as 'information inductance' (Gray et al., 2014) action follows reporting, and ultimately result in less unsustainable corporate behaviours. Whether such actions will follow or be sufficient to tackle the sustainability crises currently faced is questionable, but the role for materiality is gaining wider traction. In a recent report, the European Financial Reporting Advisory Group (EFRAG, 2021) proposes that a future sustainability reporting standard-setter should adopt and operationalise the double materiality concept, which includes both impact materiality and financial materiality (as discussed below), for use within the EU. Despite this, materiality remains an ambiguous (Puriola and Mäkelä, 2019) and contested (Reimsbach et al., 2020) concept that draws upon multiple logics (Edgley et al., 2015). How best to define and implement materiality remains moot and this chapter, therefore, aims to provide insights into the relevant context and debates.

Understanding how different sustainability reporting standards conceptualise and frame materiality is important because this reporting principle directly affects the issues that companies will be reporting about, given it relates to the type of users that any standard setter may have in mind for sustainability information, and therefore the purpose assigned to sustainability reporting itself. Traditionally, sustainability reporting has been conceptualised as a tool of accountability to the variety of stakeholders of an organisation, and an account about the social and environmental impacts (e.g., externalities) that organisations have on local community and society. However, in recent times, the emerging attention that financial markets and investors have put on environmental, social and governance (ESG) issues have contributed to narrowing the purpose of sustainability reporting to information that is material for investment decisions. This is problematic, as externalities are, by definition, costs that are not borne by organisations producing them, and therefore do not affect, at least in the short-term, the financial performance of organisations.

We start by presenting the origins and aims of the major organisations providing sustainability reporting standards and frameworks: the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), the Sustainability Accounting Standards Board (SASB)[1], the Taskforce on climate-related Financial Disclosure (TCFD), and the Sustainable Development Goal Disclosure Recommendations (SDGD). We focus on these organisations because of their prominence and diffusion, as well as because of the academic attention they have generated. For each organisation, we provide a *brief* overview of its historical development, and we highlight, compare, and discuss the scope and aims of the reporting guidance they each provide.

In the second part, the chapter focuses on the principle of materiality as conceived within sustainability reporting standards and frameworks. In discussing the different perspectives adopted, we also present the processes and tools the reporting frameworks recommend adopting in order to identify material sustainability issues (for example materiality matrices and materiality maps) – and we discuss how materiality fits in the broader context of the

[1] The IIRC and SASB officially merged into the Value Reporting Foundation in 2021. We continue to treat them separately in this chapter as we review the developments made before this merger.

frameworks. This part also provides an overview of the most recent developments in the field, to provide an up-to-date picture of principles, tools and practices that are developing around materiality in sustainability reporting.

The third part discusses the conceptualisation of materiality as informed by academic literature. It is widely recognised that a common feature of materiality is its explicit focus on users. For example, early studies in the social and environmental literature (e.g., Neu et al., 1998; Deegan and Rankin, 1996) have discussed whether environmental information could be material for financial stakeholders, acknowledging that it could be so because of a risk/return factor, or because for certain type of investors environmental preservation would have value per se. We assess the potential of sustainability reporting as a means for valuation, stewardship, and (stakeholder) accountability and that the nature of this role should inform the materiality assessment process. We conclude that it is stakeholder accountability that should be paramount when organisations undertake their materiality determinations. We also consider how, more recently, the idea of reporting for externalities vs. dependencies (e.g., Bebbington et al., 2019; O'Dwyer and Unerman, 2020; Unerman et al., 2018) has been proposed – with relevant implications for how accounting scholars and practitioners will approach materiality.

We end our chapter by integrating the trends we witness in practice with the academic knowledge accumulated on the principle of materiality in sustainability reporting. Our intent is to highlight issues arising from the development of multiple frameworks, point out some causes for concerns but also space for opportunities, culminating in avenues for future research.

1. Sustainability Reporting Standards and Frameworks

With the increased attention on sustainability and non-financial reporting we have also witnessed a growing number of organisations that propose standards and frameworks. We will focus on five of them: the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC), the Sustainability Accounting Standards Board (SASB), the Taskforce on climate-related Financial Disclosure (TCFD) and the Sustainable Development Goal Disclosure Recommendations (SDGD).

1.1 Global Reporting Initiative (GRI)

The GRI is a pioneer organisation and standard setter for sustainability reporting. Founded in 1997 in the U.S., under the efforts of the Coalition for Environmental Responsible Economies (CERES) and the UN Environmental Program, the GRI released its first Guidelines (G1) in 2000 with the general purpose of providing a global framework for sustainability reporting that would support companies in disclosing information about contributions and impacts to sustainable development. In 2002 the GRI moved its headquarters to the Netherlands and, as companies and other organisations started to adopt the guidelines, the GRI initiated several rounds of revisions and consultations to improve and expand the reporting guidelines: the G2 guidelines were issued in 2002, the G3 in 2006, the G4 in 2013. The organisation itself grew as a global actor, via the creation of a network of regional hubs all over the world and the hosting of global conferences and virtual summits. One of the key events in the GRI's history is the launch of a set of "GRI Sustainability Reporting Standards" in 2016 which marks the transition of the GRI from "providing guidelines to setting the first global standards for sustainability reporting" (GRI website). We will now focus on the overview of the GRI Standards (2020)[2].

The GRI Standards are the first and most widely adopted global standards for sustainability reporting, with 96% of the world's largest companies using them to report on their

[2] Subsequent to the drafting of this chapter, we note that the GRI published revised standards in October 2021.

sustainability performance (KPMG, 2020). The standards are organised into universal (100 series) and topics-specific standards (200 series – economic topics, 300 series – environmental topics, 400 series – social topics).

Standard GRI 101: Foundation is particularly interesting as it defines the principles for defining both report content and quality (see Box 1). Faithful to a conceptualisation of sustainability reporting for the purpose of providing stakeholders with accountability for the economic, social, and environmental impacts of corporate activities, the *stakeholder inclusiveness* principle requires companies to identify its stakeholders and explain how it has responded to their expectations and interests. Stakeholder engagement processes are recommended for understanding the information needs of stakeholders. As the purpose of sustainability reporting is to provide an account for the social, environmental, and economic impacts (whether positive or negative, current, or future) of an organisation's activities, the *sustainability context* principle requires organisations to present their performance in the wider context of sustainability. In other words, organisations should be reporting their performance in the "context of the limits and demands placed on economic, environmental and social resources, at the sectoral, local, regional or global level" (GRI 2020, p. 9). Given the GRI Standards envision sustainability reporting as an accountability mechanism, it is not surprising that their notion of *materiality* is strongly stakeholder oriented, as we will discuss in the next section. The last principle for defining the content of the report is *completeness*, which is articulated on three levels (list of material topics, topic boundaries and time) conceived to assign a reporting organisation with responsibility (and accountability) for all impacts. Specifically, material topics should be identified via stakeholder engagement but also considering broader societal expectations. The topic boundaries are defined by where the (material) impacts occur and how the organisation is involved (directly, i.e., causing them, or indirectly, i.e., via business relationships with other parties). While it is expected that impacts are presented for the reporting period in which they occur, an organisation should also consider (and report on) those activities for which the short-term impact may be small but that may have long-term, "irreversible" or "unavoidable" impacts (GRI 2020, p. 12).

The second set of principles for defining the quality of the report are concerned with ensuring that information is presented in such a way that stakeholders can use it to make their assessment of corporate activities and impact, and "take appropriate actions" (p. 7). Once again, the accountability purpose is reflected in the choice of these principles. To be an accountability mechanism, information provided by the companies should be able to mobilise its recipients to demand certain performance (Levy et al., 2010), hence it should be accurate, provide a balanced view of both positive and negative aspects, be clear, comparable, reliable and timely.

[insert Box 1 about here]

1.2 International Integrated Reporting Council (IIRC)

The IIRC was jointly formed in 2010 by the GRI and the Prince of Wales Accounting for Sustainability (A4S) project with the mission to develop the A4S idea of a "connected reporting", according to which organizations were expected to draw the readers' attention to the main connections between those social, environmental and economic actions and outcomes that were material for the reporting organization. The specific framework developed and promoted by the IIRC is called the International <IR> Framework.

Originally conceived as a concise report of a relatively few pages, it now aims at promoting "integrated thinking" and encourages a new way to conceive businesses and their creation processes, where social, material and economic matters are considered as intertwined rather than stand alone. In other words, the <IR> Framework requires a company to disclose its social, environmental and economic actions, outcomes, risks and opportunities in a manner that reflect

the integrated nature of these factors for the company (IIRC, 2021). The <IR> provides a framework with a strategic focus on future actions and plans for the value creation (or destruction) of six capitals: financial, manufactured, intellectual, human, social and relational, and natural.

As the coalition of actors participating in the IIRC grew and diversified, we can observe a gradual shift from the idea of an integrated report as a high-level overview, towards that of integrated reporting replacing other forms of corporate reporting and explaining "how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term" (IIRC, 2013, pp. 7-8). As the focus shifted to the "range of factors that materially affect the ability of an organization to create value over time" (IIRC, 2013, p. 3), the primary recipients (and information needs) of an integrated report became the "providers of financial capital". The way in which <IR> is conceptualized nowadays stands in stark contrast with the original 2010 foci on stakeholders (other than shareholders) and accountability for the impacts of corporate activities (de Villiers, Rinaldi and Unerman, 2014). This shift means that the target audience for the integrated reporting is now substantively different from that of the GRI. While sustainability reporting in the GRI's conceptualisation aims at providing social, environmental and economic information to a wide range of stakeholders, integrated reporting now seeks to present information related to broad risk evaluation and potential future value growth thus appealing to capital providers and potential investors: "whereas the GRI G4 guidelines emphasise the need to identify stakeholders and through their concerns to identify organisations' social and environmental impacts, the IIRC's integrated reporting framework (2013) focus is on "shareholder value" (de Villiers et al., 2014, p. 1059).

The <IR> Framework also includes guiding principles for the report preparation. They are reported in Box 2. Although the reader will see some of the principles are labelled similarly to the GRI Standards, their definition and application are defined in the context of integrated reporting fulfilling the information needs of the providers of financial capital about how the organization creates value over time. For example, the focus on the strategy is needed to inform how the organization is able to create value over time through the use of, and effects on, the six capitals. To describe the value creation process, the organization must present a holistic picture of the relationships between the various factors that affect value creation, including its relationships with stakeholders. While we discuss materiality in the next section, it is worth noticing that the reliability and completeness principles are mappable to the GRI accuracy and balance principles, and the consistency and comparability principles to the GRI comparability principle.

[insert Box 2 about here]

1.3 Sustainability Accounting Standards Board (SASB)

Founded in 2011, the SASB is a U.S. based organisation that promotes and develops *industry-specific* standards for use in disclosing information in mandatory filings submitted to the Securities and Exchange Commission. It is therefore conceptualised and framed to address the information needs of investors, in contrast to the GRI Standards which serve the information needs of a variety of stakeholders. So far, the SASB has developed and released a complete set of 77 Industry Standards that identify sustainability-related topics that are reasonably likely to affect the financial or operating performance of a company or an entire industry.

Although the SASB does not propose specific principles for reporting, its "Conceptual Framework", currently being revised, illustrates the principles and objectives that the technical members of the SASB haves so far used to set the standards. The principles for topic selection (at the industry level) include considerations of

- the potential for a specific topic to affect corporate value (through three channels: revenues and costs, assets and liabilities, and cost of capital or risk profile);
- relevance for investors (via five factors: (1) direct financial impacts and risk; (2) legal, regulatory, and policy drivers; (3) industry norms, best practices, and competitive drivers; (4) stakeholder concerns that could lead to financial impacts; and (5) opportunities for innovation)
- relevance across many companies within the industry
- whether topics are within the control or influence of companies (actionability)
- whether topics are likely reputed material by both the investors and the issuer

Further, as one of the aims of the SASB standards is to provide standardized disclosures, there are also certain criteria followed in the standard setting process to choose which metrics to measure performance for each topic (e.g., usefulness, comparability, verifiability, etc.)

1.4 Taskforce of Climate-related Financial Disclosures (TCFD)

The Taskforce for Climate-related Financial Disclosures was established in 2015 by the Financial Stability Board with the aim of developing guidance for voluntary disclosures of material risks addressing investors and other actors in the financial world (lenders and insurance underwriters). Underlying this initiative is the need for information relevant to improve the ability of investors to assess and price climate related risks and opportunities, and their financial impacts on corporate performance, rather than to improve accountability towards all stakeholders

The TCFD Recommendations (TCFD, 2017) identify both physical and transition risks associated with climate change. The former relates to direct damage to assets or indirect impacts through supply chain disruption caused by extreme weather events, or shortages in the availability of certain resources (e.g., water). The latter instead refer to changes in the policy and legal environment, technology, market demand and supply that may arise to mitigate (or adapt) to climate change.

The recommendations suggest four thematic areas for disclosure: governance, strategy, risk management and metrics and targets (see Box 3). They also released supplemental guidance for the financial sectors and for non-financial sectors potentially most exposed to climate change risk (i.e., energy, transportation, materials and building and agriculture and food). Among the various disclosure recommendations, the TCFD guidance puts a lot of emphasis on scenario analysis, because of its forward-looking nature and relevance for investors interested in understanding how exposed organisations are to transition and physical risks and how they could address such exposure. It is worth noticing that the evidence so far suggests that corporate reporting practices on this issue still lag behind (TCFD, 2020).

[insert Box 3 about here]

1.5 Sustainable Development Goals Disclosures (SDGD)

The Sustainable Development Goals Disclosure Recommendations (SDGD) (Adams, Druckman and Picot, 2020) were published in January 2020 jointly by several accountancy bodies (the International Federation of Accountants, ACCA, ICAS, Chartered Accountants Australia and New Zealand, the International Integrated Reporting Council) and the World Benchmarking Alliance. The aim of these recommendations is to promote best practice for corporate reporting on the SDGs and enable effective reporting and transparency on social impacts, in a way aligned with three other reporting guidance frameworks: the TCFD, the <IR> Framework and the GRI.

The guidance is articulated into *Fundamental Concepts* (see Box 4) and *Principles* of SDG disclosures. While the principles for SDG disclosure are closely related to those of the GRI and

<IR> Framework, the *Fundamental Concepts* are what make these recommendations specific to the SDGs and therefore relevant for the aim of this chapter.

The first fundamental concept is "Long term value creation for the organisation and society", which acknowledges that value creation (or destruction) for the providers of finance comes from the value organisations create or destroy for themselves and society. In other words, through the value creation process, organisations have an impact on the achievement of the SDGs, which can be positive or negative. The second fundamental concept is "Sustainable development context and relevance" and this suggests that organisations should consider the sustainable development context in which they operate, and disclosures should be relevant to that context. So, for example, disclosure on target should refer to the targets underpinning the SDGs. The last fundamental concept, "materiality", refers to both the relevance for stakeholders (with respect to the positive and negative impacts that the organisation has on the achievement of the SDGs) and providers of finance (with respect to the long-term value creation for the organisation and society).

[insert Box 4 about here]

2. Materiality in Sustainability Reporting Frameworks

The previous section has provided insights into the different developments regarding sustainability reporting standards and frameworks. Building upon this, this part of the chapter now focuses in more detail on how the principle of materiality is conceived within these same standards and frameworks.

2.1 GRI

The "materiality principle" appears within the GRI's initial exposure draft of 1999. As the GRI started developing their first set of sustainability reporting guidelines they looked to the principles and assumptions that had been developing within financial reporting standards. One such principle was materiality, which, in financial accounting, they noted was measured in financial terms and was associated with relevance to users' investment decisions. Even at this time it was acknowledged that materiality within sustainability reporting was likely to be "more complex" and would depend upon the nature, circumstances and scale of an item or event. In contrast to the predominant emphasis upon the investor perspective withing financial reporting, the GRI assumes a multiplicity of potential users for sustainability information. As such, the GRI recognised that different users may have varied and, perhaps, competing perspectives in terms of determining material issues and topics.

Although the GRI's guidelines, and more recently standards, have developed through numerous iterations, materiality has remained an essential principle in its own terms, but also in how it relates to other key principles including balance, completeness and relevance. Over time the GRI's guidelines have provided more detailed discussion and consideration of the materiality principle. Since GRI 3.0 in 2006 there has been a level of consistency in the GRI's conceptualisation of materiality. Firstly, materiality is described as a threshold whereby topics or impacts should be reported as they become of sufficient importance. Secondly, the principle, as concerned with materiality topics, is envisaged along two dimensions:

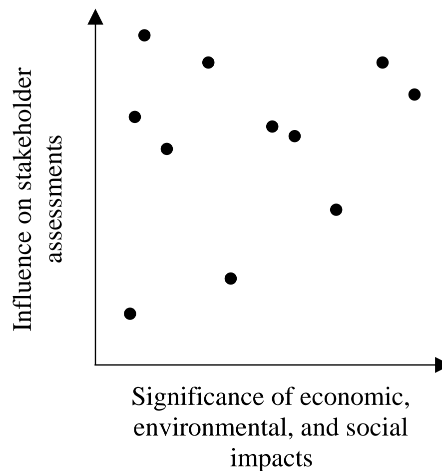
- The significance of the organization's economic, environmental, and social impacts;
- Their substantive influence on the assessments and decisions of stakeholders.

The significance of impacts will depend upon their "likelihood, severity and criticality, likelihood of risks or opportunities" and this may result in either financial or non-financial implications. The GRI conceptualisation is clear that the impacts and their implications may or may not have financial implications. Social and environmental impacts will not necessarily have financial implications in the short or long-term and this does not negate their materiality.

Despite this, the GRI do note that it will be the case that such material impacts will often have financial implications and so, in these instances, will be of relevance to financial stakeholders, investors, and capital market participants.

These two dimensions form the basis for the visualisation of materiality as called the materiality matrix (Figure 1). The visual representation allows topics to be prioritised as they are plotted further from the origin. Issues of low materiality, close to the origin, may not reach the threshold deemed necessary for reporting. Even amongst those topics that exceed the threshold for reporting, there is expected to be a differentiation in content with greater emphasis upon those aspects that are deemed to be most material.

Figure 1: GRI's Materiality Matrix



[Source: adapted from GRI Consolidated Standards, 2020, p. 11]

Further details, in terms of internal and external factors to be considered and factors to be tested are provided in the GRI's technical protocol and implementation manual. Two further aspects of the GRI conceptualisation are worth emphasising here. First, as recognised in the earlier section, there is a strong sense of stakeholder inclusiveness within the GRI framework. For instance, it is expected that stakeholder interests are taken into account even if it is not possible for the organisation to engage directly with them. Stakeholder engagement and dialogue, however, is expected wherever possible. It is suggested that stakeholders should be prioritised dependent upon the nature of their relationship with the organisation. The G4 implementation manual explains that prioritisation of stakeholders will depend upon the extent to which stakeholders are affected by (or have the potential to be affected by) an organisation's activities and products; the stakeholder's ability to influence the organisation; and each stakeholder's investment in the success or failure of the organisation.

Second, the time horizon relating to materiality is recognised as pertinent. The long-term, intergenerational aspects of sustainability issues is apparent within the GRI's standards as in determining the materiality threshold it considers meeting the needs of the current generation without compromising the needs of future generations. Moreover, the GRI also identifies that issues may be material even if the impact is relatively limited in the short-term. They note that for some issues it is the "reasonably forseeable cumulative effects" that has the potential to make an issue material. For instance, it may be the impact of an accumulation of pollutants over a period of time that may make an issue significant and so requiring reporting.

To summarise, GRI has long recognised the relevance of the materiality concept within its sustainability reporting guidelines and frameworks. Whilst, starting from a financial accounting conception of materiality, the GRI guidelines have clearly distinguished materiality

for sustainability reporting. This is reflected in their empahasis upon the recognition of broader stakeholder impacts, non-financial impacts, and longer-term cumulative impacts. Recently this form of materiality has been referred to as impact materiality. It has been distinguished from financial materiality that has been preferred within alternative sustainability reporting framewords and it is to these that we now turn.

2.2 Integrated Reporting <IR>

The <IR> guidance of 2015 and framework of 2021 both clarify the IIRC's conception of materiality as referring to an organisation's ability to create value. Apparent throughout is that this value creation may be in the short, medium or long term and that the information is primarily for the providers of financial capital and should assist the efficient allocation of such capital. It is contended that improvements in users' decision-making will follow as an integrated report will be focused and concise. The <IR> guidance emphasises the symbiosis between materiality and conciseness. By focussing on only those matters that are material, i.e. "sufficiently important in terms of its known or potential effect on value creation", then an integrated report will avoid the inclusion of extraneous information and "avoid information overload and obfuscation of core issues" (IIRC, 2015, p. 8).

According to the 2015 guidance determining materiality requires consideration and evaluation of the 'trends, dependencies, risks and opportunities' that will impact upon value creation. Material matters will be specific to an organisation, but during the process those involved will need to be cognisant of indutry factors as well as conditions and perspectives both internal and external to the entity. This requires the consideration of risks and opportunities that may be outside of the organisation's control and financial reporting boundary, but still potentially impact upon value creation. In determining the materiality of an issue, both the magnitude of its effect on value creation and its likelihood of occurrence require evaluation. The 2021 Famework is clear that if an issue may have 'extreme consequences' then it would be material even if it has low probability and so is unlikely to occur.

More apparent within the 2021 <IR> Framework is the need for balance within an integrated report. For completeness it is articulated that both positive and negative matters should be included. Further, the possibilities for both positive or negative externalities to materially increase / create value or to decrease / erode value is explicitly regognised. It is also noted that the value here is "embodied in the capitals" and so the value is not purely financial, but also manufactured, intellectual, human, social and relationship, and natural.

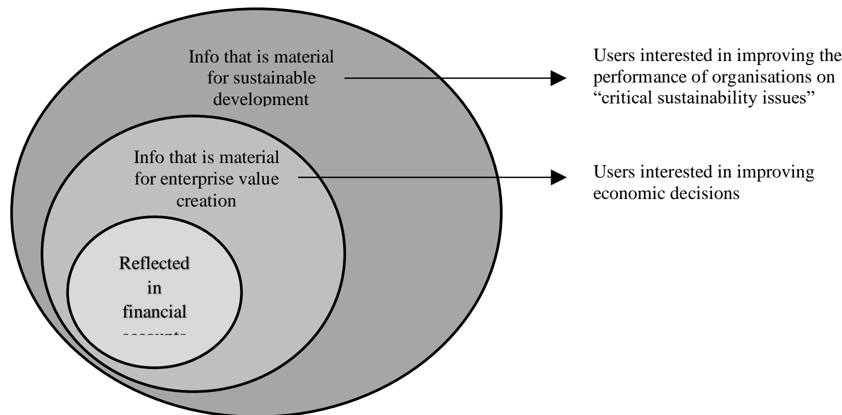
2.3 SASB

SASB published their conceptual framework for sustainability accounting standards in 2017. This makes clear that their mission is "to develop and disseminate sustainability accounting standards that help public corporations disclose material, decision-useful information to investors" (p. 1). Immediately, therefore, we see an emphasis upon investors and their requirement for decision-useful information. As such they argue that sustainability accounting information has the potential to complement financial accounting information so that it will inform investors on risks and opportunities and make visible material factors that will affect an organisation's ability to create long-term value.

They acknowledge that this approach will require the reporting organisation to focus upon a "subset of sustainability factors" (p. 8) and argue that this will result in more cost-effective reporting than existing reports that lack such focus. A key concern with the SASB's approach, therefore, is as to whether such a restricted view can be claimed to capture the complex, diverse and interconnected nature of the sustainability issues currently of concern. A material topic, according to SASB (2017) is one which is reasonably likely to impact upon the "financial condition or operating performance" of the organisation. In their 2020 exposure draft, the

SASB refer to how sustainability issues may "contribute to enterprise value creation" and that this, alongside impacts on financial performance, will be the focus for users seeking to improve their economic decisions (e.g. providers of financial capital). The partial nature of the interest in sustainability information is visualised in Figure 2, adapted from the original figure in the exposure draft. This provides fuel to our concerns that the SASB's conceptualisation of materiality will exclude 'critical sustainability issues' and so cannot claim to align with sustainable development as more broadly understood.

Figure 2: SASB's Scope of Sustainability Disclosure



[Source: adapted from SASB, 2020, p. 24]

Also within their 2020 exposure draft, SASB looks to move beyond its earlier base of U.S. law and identifies itself as a global standard setter and, amongst other things, aims to clarify its definition of financial materiality. Their intention was for the revised definition to be aligned with definitions of other standard setters that give primacy to investors and other providers of capital explicitly refering to the International Accounting Standards Board (IASB) and the Interntational Integrated Reporting Council. The revised definition is:

> *For the purpose of SASB's standard-setting process, information is financially material if omitting, misstating, or obscuring it could reasonably be expected to influence investment or lending decisions that users make on the basis of their assessments of short-, medium-, and long-term financial performance and enterprise value.* (p. 7)

The primary 'users' are referred to as the providers of capital with the assumption being that they will be making decisions related to 'financial performance' and 'enterprise value'. Clearly, this reinforces concerns as to the the comprehensiveness of sustainability issues to be considered material on this basis. Under this conceptualisation only those issues that impact financially will be considered. This appears to protray providers of capital as to only being concerned with financial returns and excludes those that may make decisions on the ground of broader sustainability issues in their own right – for example investors wanting to change corporate behaviour through shareholder activism.

SASB also emphasise that medium- and long-term time frames are in scope for their conceptualisation of financial materiality. Interestingly they note their concern that their approach has been misinterpreted by 'external stakeholders' as short-term and they clarify that this was never their intention. Their opinion is that long-term horizons are relevant to and in scope for the assessments of "financial performance and enterprise value" made by the providers of capital as they make their investment decisions. They do note, however, that the relevant time horizon may differ and will depend upon, for example, business cycles, capital investment duration, and management's planning horizon. Given the well-established concern

that the incentives of both investors and management are closely tied to short-term financial performance and value it is perhaps not surprising that the SASB's approach has been interpreted to be short-term. Reaffirming the primacy of financial performance, as measured and reported annually or even quarterly, will not seem sufficient to challenge the established short-term focus.

The SASB's approach has been to consider "evidence" as to both the extent of investor interest in a topic and the possible financial impact. Their analysis of evidence is undertaken for each industry and leads to a 'materiality map'[3]. This materiality map identifies material topics on an industry basis as it is likely that organisations operating within an industry will have similar business models and resource requirements. They also suggest that this will be helpful to financial analysts, as they already present their analysis within an industry context and so will be able to place sustainability information alongside their pre-existing financial and performance analysis.

2.4 TCFD

The TCFD's final report and recommendations is clear that its remit was "to develop voluntary, consistent climate-related financial disclosures that would be useful to investors, lenders, and insurance underwriters in understanding material risks" (TCFD, 2017, p. iii). This remit, therefore, distinguishes these recommendations from the other frameworks considered above due to its focus upon 'climate-related financial disclosures' rather than sustainability reporting more broadly. The TCFD is more aligned with SASB and <IR> in that its emphasis is on the providers of financial capital, although also with explicit reference to insurance underwriters.

It is also apparent that these recommendations are seen as complementing existing legal requirements. They note that disclosure of financially material information is already a legal obligation in many jurisdications and so if climate-related information is financially material, then it should already be disclosed. In this light, they state that their recommendations are "intended to help organizations meet existing disclosure obligations more effectively" (p. 17). This obligation only exists if climate-related financial disclosures are deemed material. In this regard, it is noted that climate risk cannot be diversified and will impact upon 'nearly all industries'. The global and ubiquitous nature of climate change is acknowledged here. Also, the recommendations warn organisations against 'prematurely concluding' that the risks and opportunities from climate change are not material. There is a danger that such a conclusion may be reached given that many of the risks are deemed to be more signifcant in the long-term and so of less immediate relevance. These recommendations again, therefore, point to the materiality of long-term sustainability, in this case climate change, issues[4].

2.5 SDGD

Adams, Druckman and Picot (2020) developed recommendations for Sustainable Development Goals Disclosure. Practically, they suggest that an organisation will not contribute to or impact on all 17 SDGs and it would appear that this would be reflected in the information included within an organisation's report . The recommendations draw upon the <IR> Framework, GRI 101 and TCFD. This is reflected in their definition of materiality, which refers to making a difference to both stakeholders' conclusions on an organisation's impact on the SDGs and to the providers of finance concerns regarding long term value creation. Here, though, it is also

[3] https://materiality.sasb.org/

[4] Further discussion of climate change risk disclosures as material information can be found in the chapter by Herbohn, Clarkson and Wallis: "The State of Climate Change- Related Risk Disclosures and the Way Forward". Also, further discussion of climate-related disclosure guidance as based on a model of materiality can be found in the chapter by Jona and Soderstrom: "Evolution of Climate-Related Disclosure Guidance and Application of Climate Risk Measurement in Research".

worth noting the value creation (and prevention of value destruction) is referred to presenting risks and / or opportunities "for its providers of finance, stakeholders and society more broadly". Consistent with <IR> there is reference to the requirement to "address issues and impact in the organisation's value chain but outside its boundary".

2.6 Other recent developments in the materiality principle

After a review of the materiality principle in the most developed and used sustainability reporting frameworks, we now consider some recent developments in the field, that we expect will significantly impact the materiality principle in practice in the upcoming years. The first development is associated with the entrance of the IFRS Foundation – an organisation responsible for developing a single set of financial accounting standards. In 2020, the IFRS Foundation released its own consultation paper on sustainability reporting. Within this they note the multiplicity of frameworks and how this may fragment and confuse sustainability reporting practice. To address this, they consult on a role for the IFRS to create a Sustainability Standards Board with the hope to provide harmonisation and consistency to a 'stream-lined' sustainability reporting. The consultation period concluded on 31st December 2020 and on 30th April 2021 the IFRS Foundation published both a feedback statement on the consultation and an exposure draft proposing constitutional amendments to incorporate an International Sustainability Standards Board to set sustainability standards.

The IFRS Foundation are clearly aligned to the exsting IFRS Standards, which have already articulated the position that it is the concept of financial materiality that forms the basis for their considerations. They conclude that their Sustainability Standards Board should take a "gradualist approach" and so would "initially focus its efforts on the sustainability information most relevant to investors and other market participants". The consultation paper suggests that this approach, which is very much more aligned to the approach of the SASB rather than the multi-stakeholder approach of the GRI, would avoid increasing the complexity of their task. The IFRS consultation also proposes that their approach would be to prioritise climate-related disclosures as these are the most 'pressing' concern. They acknowledge that broader sustainability issues may be considered at a later point in time. Their approach effectively recognises the materiality of climate change, but appears to at least imply that other sustainability issues are less material as they are less 'urgent'.

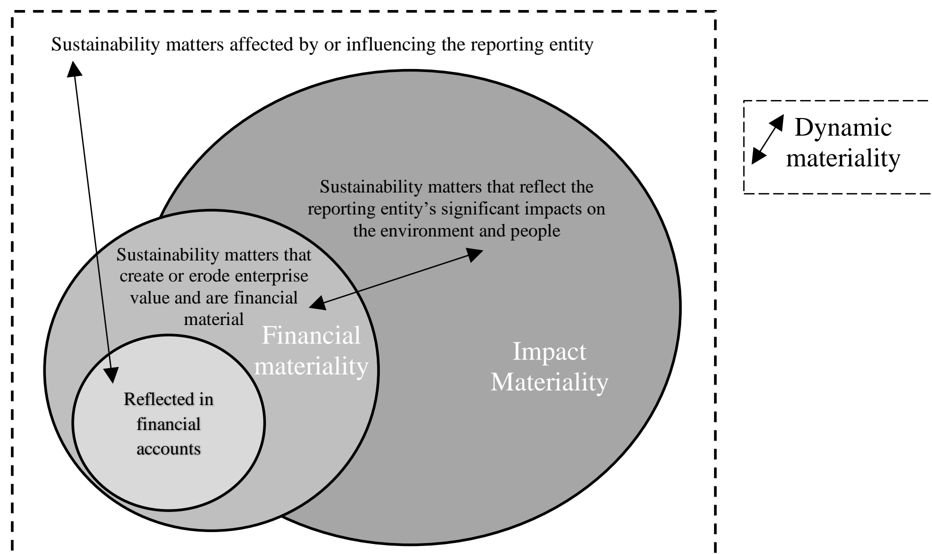
Another key development in the field, is represented by the issuance of the updated EU Guidelines on non-financial reporting, which were released in 2017 and explicitly addressed the materiality principle. The updated guidelines state that organisations should disclose material information. Here material information is that which influences users' decisions, but also refers to the introduction of the need to consider information '*to the extent necessary for an understanding of the [...] impact of (the company's) activity*' (Section 3.1). They acknowledge that impacts may be positive or negative and that the information should reflect the needs of 'relevant stakeholders'. Here, again, it is recognised that material information will be context specific and affected by both internal and external factors, but is likely to be similar within an industry. The guidelines also suggest that as a minimum material information would include disclosure of (i) environmental, social and employee matters; (ii) respect of human rights; and (iii) anti-corruption and bribery matters. More detailed suggestions of what may constitute material information within these categories is provided, but these are suggestions rather than requirements.

This section has provided an overview of the different conceptions of materiality as articulated within the different frameworks. There are a number of similarities, but also variation within the different conceptualisations of materiality. The first key question remains as to who is the target information for sustainability reporting? A number of initiatives (<IR>, SASB, TCFD and IFRS) appear to have placed stronger emphasis upon the needs of the

providers of financial capital and the corollary of this is an emphasis upon financial materiality as reflected in value creation. Most of these guidelines recognise a concern that this should not be restricted to short-term considerations, but, nevertheless, there appears an acceptance, certainly by SASB, that this results in a more narrow perspective on sustainability.

In contrast the GRI, SDGD and the EU Guidelines appear to adopt a broader conception of users and this adds a degree of complexity in understanding what information will be material. These frameworks also acknowledge that considering the economic, environmental and social *impacts* of an organisation is also relevant to materiality considerations. In February 2021 EFRAG published their final report on "Proposals for a relevant and dynamic EU sustainability reporting standard-setting". In this document, they propose that sustainability reporting standard-setting should establish a double materiality approach – both 'financial materiality' and 'impact materiality'. Impact materiality relates to the severity, scale, scope, likelihood and urgency of an organisation's and its value chain's impact on a sustainability issue. Financial materiality relates to the affect on an organisation's value. A visualisation of the double materiality concept is provided in Figure 3.

Figure 3: EFRAG's double materiality concept



[Source: adapted from EFRAG (2021), p. 74]

This graphic again demonstrates the broader, more inclusive nature of 'impact materiality'. EFRAG note that many of the impacts identified may be considered as 'pre-financial', but that this may change over time creating 'dynamic materiality'. This is to say that such impacts may become financially material in the future as they can affect the organisation's business model and lead to the creation or erosion of value through a 'rebound' or 'boomerang' effect.

3. Materiality: for whom and for what?

As we have seen above, when it comes to sustainability reporting there is a plethora of standards and frameworks, and these are constantly changing and being revised and updated.
It is important to note that across the world while some countries have regulations that require companies to provide sustainability information, we are not aware that any country has yet mandatorily adopted a specific standard or framework for sustainability reporting (except for IR in South Africa). This implies that even in those countries where sustainability reporting is

mandatory, firms still have quite a lot of discretion in terms of how they prepare these reports, including choosing to adopt one standard or another. Given the work of EFRAG on sustainability reporting, we envisage that this may soon not be the case for European countries, but only time will tell.

This is important to note because most of the evidence that we have as of today on corporate sustainability reporting refers to practice, rather than the standards. The literature largely agrees that while companies may be reporting according to one of these frameworks, in practice standards are not mandated and enforced therefore compliance and substantial application of the guidance is relatively poor, not necessarily leading to improved quality of sustainability reporting (Boiral, 2013; Michelon et al. 2015; Moneva et al., 2006).

In light of the plethora of organisations operating in the sustainability reporting space, it is important to now discuss the implications that different conceptualisations of materiality have for sustainability reporting practices. We will discuss these implications by focusing on two related aspects:

1. Purpose of reporting and key users: The various definitions of materiality as previously examined are not independent from what is the purpose of sustainability reporting as conceived by the various standard setters. The purpose attributed to sustainability reporting drives the focus on which users the information is for; and
2. Focus of reporting: As different users have different needs, what is being accounted for (or unaccounted for) (e.g., what is material) may vary as well.

3.1 Purpose of reporting and key users

Broadly speaking the academic literature has identified three purposes for corporate reporting in general, which one could argue also apply to sustainability reporting (Michelon et al., 2020): **valuation, stewardship** and **accountability** (Beyer et al., 2010; Jonas and Blanchet, 2000). Sustainability reporting can play a **valuation role,** in that it allows investors and capital providers to assess the future value of the investment. Second, with respect to the **stewardship** role, sustainability reporting would allow the same capital providers to *monitor* the use of the capital, once it has been committed. Both the valuation and stewardship role assume that the primary addressees of corporate reports are *financial stakeholders*, i.e. shareholders (and potential investors) and creditors. While such roles have been traditionally assigned to financial reporting and information, in recent years, due to the planetary emergency and raised awareness of climate change, these roles are now being ascribed also to sustainability reporting. These purposes now ascribed to sustainability reporting have relevant implications for the conceptualisation of materiality, in particular because they conceive financial stakeholders (i.e., investors) as the main users of sustainability reporting. Given that investors are interested in understanding the financial impact of sustainability issues, the scope and nature of sustainability information are defined by its relevance for impacting the financial performance of corporations rather than for broader sustainable development.

While Zeff (2013) notes that the stewardship role can also be related to a wider set of stakeholders than just investors, it is the **accountability** role of reporting that takes a normative stand about to whom the firm should be held accountable (Freeman et al., 2004; Harrison and van der Laan Smith, 2015) and explicitly refers to a broader range of users, i.e. the stakeholders, as the primary addressees of sustainability reporting. Key to the concept of stakeholders is the idea that different stakeholders have different, even conflicting needs (Freeman, 1984), which inevitably affects the scope of reporting (i.e. what type of information is material or relevant may vary across stakeholder groups). According to this perspective, information plays an accountability role, where accountability is defined as the duty to provide an account for the actions for which an organization is held responsible in the eyes of *all stakeholders* (Gray et al., 1997). An important implication of adopting an accountability perspective is that the scope

of reporting by definition entails also non-financial information, such as for example, disclosures on the social and environmental impacts of corporate activities, as stakeholder interests are not necessarily only financial. This is not to say that the valuation and stewardship perspectives do not involve non-financial reporting, but traditionally research undertaking these perspectives has been on a narrow conceptualisation of "reporting", focused on financial reporting, and investors as users of such reporting. This translates into a conceptualisation of materiality that is focused/emphasizes the *financial* impacts of sustainability issues rather than an account of the social and environmental impacts that corporate actions have on stakeholders and society.

We are currently witnessing, therefore, the 'contested nature' (Reimsbach et al., 2019) of the materiality concept within sustainability reporting. In this context it is argued that materiality is an 'ambiguous' (Puriola and Mäkelä, 2019) and 'malleable' concept that "lends itself to reinvention" (Edgley et al., 2015, p. 13). Key to this contestation is the question as to who are the key users of a sustainability report? Edgley et al. (2015) argue that, within sustainability assurance providers, the introduction of a 'stakeholder logic' changed the way in which materiality was understood and the role it played in sustainability assurance practice. Similarly, the question as to the identity of key users remains contested within the frameworks discussed in this chapter. Adopting a broader stakeholder logic requires acceptance of differing and potentially conflicting views regarding what information is material. Such a broader stakeholder accountability necessarily increases the potential material topics required to be disclosed and so may extend the report's content and so is problematic if another key principle is for conciseness. The interrelationships between conciseness, completeness and materiality are challenging, but adopting a financial stakeholder view of users will result in a narrow simplification of sustainability that fails to capture its interconnectedness and complexity.

3.2 Dependencies and externalities

The second key issue when it comes to different conceptualisations of materiality is the underlying assumptions about what should be accounted for. According to the accountability perspective, sustainability reporting relates to the accounting for externalities, impacts arising from the company's activities that are borne by others (at least short term). Externalities, by definition, do not have financial implications for the company, so they are outside of the remit of financial reporting and are often ignored, or else, allegedly discussed and reported on in sustainability reports addressing a wide range of stakeholders who are affected by these impacts.

Externalities may bear financial implications if and only if they trigger some reaction in the stakeholder groups affected by them, in other words if they are a source of risk for companies. For example, consumers may start a boycott campaign (reputation risk), shareholders may sue companies (recent case with Shell) (litigation risk) or regulators may become aware of a social/environmental cost and therefore increase in an effort to limit the externality (regulatory risk). It is these implications that EFRAG refer to as impact materiality. They suggest that these impacts may be pre-financial, but that this may change over time as impacts and the associated responses vary. One could argue that externalities in the long term are all risks, however as long as the likelihood of these risks is low, it is unlikely that externalities will have financial implications for the company and therefore be of little interest for a valuation perspective (focused on short term returns).

The other side of the coin (not unrelated to externalities) are dependencies – in other words exposure to social or material environmental issues that have a direct impact on corporate operations and therefore financial performance (Unerman et al., 2018). O'Dwyer and Unerman (2020) identify the TCFD as a framework that recognises an organisation's dependence upon climate. They argue that irrespective of an organisation's impact, for instance through

greenhouse gas emissions in the case of climate change, "material sustainability dependencies risks need to be reported in a consistent manner" (O'Dwyer and Unerman, 2020, p.3). As these dependencies are risks to business operations they would be tackled by the risk management system of the firm, but when these dependencies are strong, they may even affect the financial reporting (think of stranded assets, for example). Dependencies and the associated risks and opportunities, therefore, are another consideration when organisations contemplate what they should account for and disclose. Interestingly O'Dwyer and Unerman (2020) suggest that further research is required into the theme of materiality and articulate research questions around how different organisational actors, such as companies, industry sectors and investment institutions, and different (financial and sustainability) accountants determine materiality in this context.

Box 5 provides an overview of the various materiality definitions discussed in the chapter and their mapping against the purpose and key users of sustainability reporting, as well as the main focus of sustainability information.

[insert Box 5 about here]

Conclusions

Over the last twenty years or so sustainability reporting standards and frameworks have developed and proliferated. In this chapter we provide an overview of a range of the more influential frameworks before focussing upon how they each conceptualise materiality. We do so as we believe that materiality is core to the practice of sustainability reporting. We conclude that materiality remains ambiguous (Puriola and Mäkelä, 2019) and contested (Reimsbach et al., 2020). This is exemplified by the proliferation of terminology surrounding materiality, as it can be preceded by financial, pre-financial, impact, double, dynamic and, perhaps, dependencies. As these ideas are further discussed and debated, we see the potential for confusion and a danger that organisations may look to simplify their materiality determinations.

We conclude that the sustainability context is complex and it is, therefore, problematic to seek simple solutions to the questions as to who are the key users and what is the material content for sustainability reporting. This is especially apparent given the interconnected and long-term nature of the sustainability issues that we face. If we use the UN's Sustainable Development Goals as a helpful frame, then we can see that changes in one aspect in one location, say for example protecting life on land (and their habitat) in the Amazon rainforest, may impact potentially positively or negatively upon numerous other goals, for instance no poverty, zero hunger, climate action etc, both within that location and beyond. Our globalised infrastructures and economies are such that many impacts (both financial and non-financial) and dependencies are felt at a distance. It is also the case that sustainability impacts and dependencies are strongest and most apparent in the longer-term. In our view identifying, accounting for and reporting, potentially but not necessarily distant and interconnected, sustainability issues require materiality determination processes that do not seek to reduce materiality to the usefulness of disclosures to financial stakeholders with their focus upon short-term valuation.

We argue that it is the (stakeholder) accountability purpose, rather than the valuation and stewardship roles, that should be paramount in materiality determination processes. We agree with Adams et al. (2021) suggestion that anything less than rigorous materiality determination processes will result in "incomplete and misleading portrayals of sustainability performance" (p. 4). Such a rigorous materiality determination process that is inclusive of broader stakeholder interests and cognisant of both impacts and dependencies in the short, medium and long-term creates the possibility for dialogue and disclosure that is essential for stakeholder accountability (Cooper and Owen, 2007). Moreover, such accountability has the potential to educate internal

and external stakeholders and society more generally increasing sustainability literacy at a time when this is essential to address the 'wicked' issues we face.

We finish this chapter by acknowledging that there remains much that we do not know about materiality determination processes and outcomes in the context of sustainability reporting. Given this, and similar to one theme of the suggestions of O'Dwyer and Unerman (2020), we call for further research into the materiality concept and its use in practice. Such research needs to acknowledge the contested and ambiguous nature of materiality within this setting, but would be particularly timely given recent developments from the IFRS Foundation and the EU alongside the continued discussions from more established sustainability reporting standard setters. In particular the concepts of 'double' and 'dynamic' materiality seem to be gaining some level of support from interested bodies, for instance the Value Reporting Foundation, but to date, limited research has been able to explore these developments.

Box 1. GRI Reporting Principles

Reporting Principles for defining report content

Stakeholder inclusiveness	The reporting organization shall identify its stakeholders, and explain how it has responded to their reasonable expectations and interests.
Sustainability context	The report shall present the reporting organization's performance in the wider context of sustainability.
Materiality	The report shall cover topics that reflect the reporting organization's significant economic, environmental, and social impacts; substantively influence the assessments and decisions of stakeholders
Completeness	The report shall include coverage of material topics and their Boundaries, sufficient to reflect significant economic, environmental, and social impacts, and to enable stakeholders to assess the reporting organization's performance in the reporting period.

Reporting Principles for defining report quality

Accuracy	The reported information shall be sufficiently accurate and detailed for stakeholders to assess the organization's performance.
Balance	The report shall reflect positive and negative aspects of the organization's performance to enable a reasoned assessment of overall performance.
Clarity	The organization shall make information available in a manner that is understandable and accessible to stakeholders using the report.
Comparability	The organization shall select, compile and report information consistently. The reported information shall be presented in a manner that enables stakeholders to analyze changes in the organization's performance over time, and that could support analysis relative to other organizations.
Reliability	The organization shall gather, record, compile, analyze and disclose information and processes used in the preparation of a report in a way that they can be subject to examination and that establishes the quality and materiality of the information.
Timeliness	The organization shall report on a regular schedule so that information is available in time for stakeholders to make informed decisions.

Box 2. The <IR> guiding Principles

Strategic focus and future orientation	An integrated report should provide insight into the organization's strategy, and how it relates to the organization's ability to create value in the short, medium and long term and to its use of and effects on the capitals
Connectivity of information	An integrated report should show a holistic picture of the combination, interrelatedness and dependencies between the factors that affect the organization's ability to create value over time
Stakeholder relationships	An integrated report should provide insight into the nature and quality of the organization's relationships with its key stakeholders, including how and to what extent the organization understands, takes into account and responds to their legitimate needs and interests
Materiality	An integrated report should disclose information about matters that substantively affect the organizations' ability to create value over the short, medium and long term
Conciseness	An integrated report should be concise
Reliability and completeness	An integrated report should include all material matters, both positive and negative, in a balanced way and without material error
Consistency and comparability	The information in an integrated report should be presented on a basis that is consistent over time and in a way that enables comparison with other organizations to the extent it is material to the organization's own ability to create value over time

Box 3. TCFD Recommended disclosures

Governance	
a)	Describe the board's oversight of climate-related risks and opportunities
b)	Describe the management's role in assessing and managing climate-related risks and opportunities
Strategy	
a)	Describe climate-related risks and opportunities the organisation has identified over the short, medium and long term
b)	Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning
c)	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario
Risk management	
a)	Describe the organization's processes for identifying and assessing climate-related risks
b)	Describe the organization's processes for managing climate-related risks
c)	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management
Metrics and targets	
a)	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process
b)	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks
c)	Describe the targets used by the organization to manage climaterelated risks and opportunities and performance against targets.

Box 4. The SDSG fundamental concepts

Long term value creation for the organisation and society	Organisations create (or destroy) value for their providers of finance through the value they create (or destroy) for the organisation and society. Through the process of creating (or destroying) value, organisations have an impact (positive or negative) on the achievement of the SDGs. The achievement of the SDGs is critical to creating long term value for providers of finance.
Sustainable development context and relevance	SDG Disclosures should reflect the sustainable development context of the organisation and its industry/sector and be relevant to that context. Information on targets should be placed in the context of the targets underpinning the SDGs. An organisation's presentation of sustainable development issues should include, but go beyond, their relationship to both positive and negative performance to consider their implications for what business is done – and how business is done.
Materiality	Material sustainable development information is any information that is reasonably capable of making a difference to the conclusions drawn by: • stakeholders concerning the positive and negative impacts of the organisation on global achievement of the SDGs, and; • providers of finance concerning the ability of the organisation to create long term value for the organisation and society.

Box 5. Conceptualisations of materiality across different reporting organisations

Guidelines	Materiality definition	Purpose of reporting	Key users	Focus
GRI standards	The report shall cover topics that reflect the reporting organization's significant economic, environmental, and social impacts; substantively influence the assessments and decisions of stakeholders	Accountability	Stakeholders	Dependencies and externalities
IR framework	An integrated report should disclose information about matters that substantively affect the organizations' ability to create value over the short, medium and long term	Valuation Stewardship	Investors	Dependencies and externalities
SASB standards	A material topic is one which is reasonably likely to impact upon the "financial condition or operating performance" of the organisation	Valuation Stewardship	Investors	Dependencies
TCFD recommendations	Consistent with how organization determine the materiality of other information included in their financial filings, but with caution against prematurely concluding that climate related risks and opportunities are not material based on perceptions of the longer-term nature of some risks.	Valuation Stewardship	Investors	Dependencies
SDGD recommendations	Material sustainable development information is any information that is reasonably capable of making a difference to the conclusions drawn by: stakeholders concerning the positive and negative impacts of the organisation on global achievement of the SDGs, and providers of finance concerning the ability of the organisation to create long term value for the organisation and society.	Accountability Valuation Stewardship	Stakeholders and investors	Dependencies and externalities
IFRS consultation document	As in IFRS Conceptual Framework	Valuation Stewardship	Investors	Dependencies
EU Guidelines on non-financial reporting	Material information is that which influences users' decisions, and information '*to the extent necessary for an understanding of the […] impact of (the company's) activity*'	Accountability Valuation Stewardship	Stakeholders and investors	Dependencies and externalities

References

Adams, C.A., Alhamood, A., He, X., Tian, J., Wang, L. and Wang, Y. (2021), "The Double-Materiality Concept: Application and Issues", published by the Global Reporting Initiative, available at: https://www.globalreporting.org/media/jrbntbyv/griwhitepaper-publications.pdf (accessed 26 September 2021).

Adams, C. A., Druckman, P. B. and Picot, R. C, (2020), "Sustainable Development Goals Disclosure (SDGD) recommendations", ACCA, Chartered Accountants ANZ, ICAS, IFAC, IIRC and WBA, available at https://integratedreporting.org/wp-content/uploads/2020/01/Adams_Druckman_Picot_2020_Final_SDGD_Recommendations.pdf (accessed 10 May 2021).

Bebbington, J., Österblom, H., Crona, B., Jouffray, J.-B., Larrinaga, C., Russell, S. and Scholtens, B. (2019), "Accounting and accountability in the Anthropocene", *Accounting, Auditing & Accountability Journal*, Vol. 33 No. 1, pp. 152-177.

Beske, F., Haustein, E. and Lorson, P. C., (2020), "Materiality analysis in sustainability and integrated reports", *Sustainability Accounting, Management and Policy Journal*, Vol. 11 No. 1, pp. 162-186.

Beyer, A., Cohen, D. A., Lys, T. Z., and Walther, B. R. (2010), "The financial reporting environment: Review of the recent literature", *Journal of Accounting and Economics*, Vol. 50 No. 2, pp. 296–343.

Boiral, O. (2013), "Sustainability reports as simulacra? A counter-account of A and A+ GRI reports", *Accounting Auditing and Accountability Journal*, Vol. 26, No. 7, pp.1036-1071.

Cooper, S. M. and Owen, D. L (2007), "Corporate social reporting and stakeholder accountability: The missing link", *Accounting, Organizations and Society*, Vol. 32, pp. 649-667.

de Villiers, C., Rinaldi, L., and Unerman, J. (2014), "Integrated Reporting: insights, gaps and an agenda for future research", *Accounting, Auditing and Accountability Journal*, Vo. 27 No. 7, pp. 1042-1067

Deegan, B., & Rankin, M., (1996), "Do Australian companies report environmental news objectively? An analysis of environmental disclosures by firms prosecuted successfully by the Environmental Protection Authority." *Accounting, Auditing and Accountability Journal*, Vol. 9 No. 2, pp. 50–67.

Edgley, C., Jones, M. J. and Atkins, J. (2015), "The adoption of the materiality concept in social and environmental reporting assurance: A field study approach", *British Accounting Review*, Vo. 47, pp. 1-18.

European Financial Reporting Advisory Group (EFRAG), (2021), "Final report: Proposal for a relevant and dynamic EU sustainability reporting standard-setting", Available at https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/210308-report-efrag-sustainability-reporting-standard-setting_en.pdf (accessed 9 April 2021).

Farooq, M. B., Zaman, R., Saraj, D. and Khalid, F. (2021), "Examining the extent of and drivers for materiality assessment disclosures in sustainability reports", *Sustainability Accounting, Management and Policy Journal*, Vo. 12 No.5, pp. 965-1002.

Freeman, R. E. (1984), *Strategic management: A stakeholder approach*. Pitman, Boston, MA.

Freeman, R. E., A. C. Wicks, and Parmar, B. (2004), "Stakeholder theory and "The corporate objective revisited", *Organization Science*, Vol. 15 No. 3, pp. 364–369.

Global Reporting Initiative (GRI). (2020), "GRI Standards", available at https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/ (accessed 5 May 2021).

Gray, R., Adams, C., and Owen, D. (2014), *Accountability, Social Responsibility and Sustainability: Accounting for society and the environment*, Chapters 1 & 3, Pearson, UK.

Gray, R., Dey, C., Evans, R., and Zadek, S. (1997), "Struggling with the praxis of social accounting". *Accounting, Auditing and Accountability Journal*, Vol. 10 No. 3, pp. 325–364

Harrison, J. S., and van der Laan Smith, J. (2015), "Responsible Accounting for Stakeholders", *Journal of Management Studies*, Vo. 52 No. 7, pp. 935–960

International Integrated Reporting Council (IIRC), (2021), "The International <IR> Framework", available at: https://integratedreporting.org/wp-content/uploads/2021/01/InternationalIntegratedReportingFramework.pdf (accessed 20 May 2021)

International Integrated Reporting Council (IIRC), (2013), "The International <IR> Framework", available at: www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONALIR-FRAMEWORK-2-1.pdf (accessed 20 May 2021).

International Integrated Reporting Council (IIRC), 2015, "Materiality in <IR>: Guidance for the preparation of integrated reports", available at: 1315_MaterialityinIR_Doc_4a_Interactive.pdf (integratedreporting.org) (accessed 9 April 2021)

Jonas, G. J., and Blanchet, J. (2000), "Assessing quality of financial reporting", *Accounting Horizons*, Vol. 14 No. 3, pp. 353–363.

KPMG (2020), "The time has come: The KPMG survey of sustainability reporting", KPMG International, available at https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/11/the-time-has-come.pdf (accessed 26 September 2021).

Levy, D.L., Szejnwald Brown, H., and de Jong, M. (2010), "The Contested Politics of Corporate Governance: The Case of the Global Reporting Initiative", *Business & Society*, Vol. 49 No. 1, pp. 88-115.

Michelon, G., Sealy, R., and Trojanowski, G., (2020). "Understanding Research Findings and Evidence on Corporate Reporting: An Independent Literature Review", Financial Reporting Council, London, UK, available from: https://www.frc.org.uk/getattachment/ba1c51d0-e933-4235-9c67-0bd2aa592edb/Literature-Review-Final.pdf.

Michelon, G., Pilonato S., and Ricceri, F. (2015) "CSR reporting practices and the quality of disclosure: An empirical analysis", *Critical Perspectives on Accounting*, Vol. 33, pp 59-78,

Moneva,J. Archel, P., and Correa, C. (2006). "GRI and the camouflaging of corporate unsustainability", *Accounting Forum*, Vol. 30 No. 2, pp.121-137.

Neu, D., H. Warsame, and Pedwell, K. (1998), “Managing public impressions: Environmental disclosures in annual reports” *Accounting, Organizations and Society*, Vol. 23 No. 3, pp. 265-282.

O’Dwyer, B., and Unerman, J. (2020), “Shifting the focus of sustainability accounting from impacts to risks and dependencies: researching the transformative potential of TCFD reporting” *Accounting, Auditing and Accountability Journal*, Vol. 33 No. 5, pp. 1113-1141.

Puriola, J. and Mäkelä, H. (2019), “Matter of opinion: Exploring the socio-political nature of materiality disclosures in sustainability reporting” *Accounting, Auditing and Accountability Journal*, Vol. 32 No. 4, pp. 1043-1072.

Reimsbach, D., Schiemann, F., Hahn, R. and Schmeidchen, E. (2020), “In the eyes of the beholder: Experimental evidence on the contested nature of materiality in sustainability reporting” *Organization & Environment*, Vol. 33 No. 4, pp. 624-651.

Sustainable Accounting Standards Board (SASB), (2017), “SASB Conceptual Framework”, available at https://www.sasb.org/wp-content/uploads/2020/02/SASB_Conceptual-Framework_WATERMARK.pdf (accessed 8 April 2021).

Sustainable Accounting Standards Board (SASB), (2018), “SASB Materiality Map”, available at https://materiality.sasb.org (accessed 8 April 2021).

Sustainable Accounting Standards Board (SASB), (2020). “Proposed changes to the SASB conceptual framework & rules of procedure: Bases for conclusions & invitation to comment on exposure drafts”, available at https://www.sasb.org/wp-content/uploads/2020/08/Invitation-to-Comment-SASB-CF-RoP.pdf (accessed 8 April 2021).

Task Force on Climate-related Financial Disclosures (TCFD), (2017), “Recommendations of the Task Force on Climate-related Financial Disclosures”, available at https://www.fsb-tcfd.org/publications/#tcfd-recommendations (accessed 20 May 2021)

Task Force on Climate-related Financial Disclosures (TCFD), (2020), “Status Report”, available at https://www.fsb-tcfd.org/publications/#status-report-2020 (accessed 20 May 2021)

Unerman, J., Bebbington, J., and O’Dwyer, B. (2018), “Corporate reporting and accounting for externalities” *Accounting and Business Research*, Vol. 48 No. 5, pp. 497–522.

Zeff, S. A. (2013), “The objectives of financial reporting: A historical survey and analysis”, *Accounting and Business Research*, Vol. 43 No. 4, pp. 262–327.