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Making materiality determinations: A context-based approach

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Working Paper 2019-6

Making Materiality Determinations

A Context-Based Approach

Mark W. McElroy

prepared for the UNRISD project
Sustainable Development Performance Indicators

December 2019



The United Nations Research Institute for Social Development (UNRISD) is an autonomous research institute within the UN system that undertakes multidisciplinary research and policy analysis on the social dimensions of contemporary development issues. Through our work we aim to ensure that social equity, inclusion and justice are central to development thinking, policy and practice.

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This paper is part of a series of outputs from the UNRISD research project on Sustainable Development Performance Indicators.

The project seeks to contribute to assessing and improving methodologies and indicator systems that measure and evaluate the performance of a broad range of economic entities in relation to the vision and goals of the 2030 Agenda for Sustainable Development. It assesses the adequacy of existing methods and systems for gauging the contribution of enterprises to achieving the Sustainable Development Goals (SDGs); seeks to expand the scope of sustainability measurement, disclosure and reporting beyond for-profit enterprises to encompass enterprises and organizations that make up the social and solidarity economy (SSE); identifies data points and indicators related to SSE that may inform conventional approaches to sustainability measurement associated with for-profit enterprises; and proposes and tests a set of sustainable development impact indicators that can address key sustainable development challenges of the early 21st century.

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Making Materiality Determinations: A Context-Based Approach

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A Three-Tiered Typology of Sustainable Development Performance Indicators

From Incremental to Contextual to Transformational

Bill Baue, December 2019

Abstract

Arguably the most important step in the measurement and reporting of an organization's performance is completion of a materiality determination beforehand. At base, materiality determinations address the all-important question of what the scope and criteria for analysis must be in each case, recognizing that in principle no two organizations are alike. Materiality determinations therefore address the question of what the organization-specific standards of performance should be – whether social, economic or environmental – and what the corresponding metrics or indicators, too, should be in order to fully assess performance. Even in cases where purportedly universal indicators are being used, the very choice of which ones to in fact use presupposes their relevance. In this paper, we present and advocate for a specific approach for how best to make materiality determinations that are, in the parlance of sustainability management, context-based. As such, the method proposed is normative and triple bottom line in scope, in that it holds organizations accountable for their impacts on all vital capitals and with the well-being of all stakeholders in mind.

Keywords

Context-based sustainability; Impact valuation; Integrated reporting; Materiality; Performance accounting; Rightsholders; Stakeholders; Sustainability accounting; Triple bottom line; Vital capitals.

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Acronyms

AOI	Area of impact
BIA	B Corp Business Impact Assessment
CBS	Context-based sustainability
CI	Categorical imperative
D/Ds	Duty/duties
ECG	Economy for the Common Good
FFBB	Future-Fit Business Benchmark
GHG	Greenhouse gas
GRI	Global Reporting Initiative
IIRC	International Integrated Reporting Council
IR	Integrated Reporting
IV	Impact valuation
MCS	Multi-Capital Scorecard
O/Os	Obligation(s)
SA	Sustainability accounting
SASB	Sustainability Accounting Standards Board
SDG	Sustainable Development Goal
SEC	Securities and Exchange Commission (U.S.)
SN	Sustainability norm
TBL	Triple bottom line
U.S.	United States of America

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Making Materiality Determinations

A Context-Based Approach

One of the ways of classifying indicators of organizational sustainability is to differentiate between those that may be universal in scope and others that are more organization-specific. The issue of materiality necessarily comes into play here, because even in cases where indicators are believed to be universal, their presumed status as such is just another way of saying that they are material to all organizations.

Not only are materiality determinations therefore necessary for purposes of identifying organization-specific indicators, they are also necessary for testing and evaluating the legitimacy of allegedly universal indicators. Thus, how best to perform or carry out such determinations is of vital importance to both types of indicators and to sustainability accounting in general.

1 Sustainability Accounting

Determining the materiality of sustainability indicators, or of the areas of impact (AOIs) they relate to, requires that we also differentiate between indicators of sustainability performance per se and those that express impacts in merely incremental terms. The first type, sustainability accounting (SA), assesses performance relative to sustainability norms; the second type, what we and others call impact valuation (IV), does not, and instead simply quantifies or values the magnitude of an impact independent of its sustainability.¹

Impact valuation indicators are therefore merely incrementalist in the sense that they are used to assess the size and marginal change, if any, in the impacts from, say, one year to the next, often expressed in terms of their relationships with other variables – such as greenhouse gas emissions *per unit of revenue*, *per unit of production* or what have you. This is sometimes referred to as performance intensity.

Unlike IV indicators, SA indicators, by contrast, always express performance as impacts compared to a sustainability norm, which is what qualifies them as sustainability indicators. The most emblematic such indicators are *context-based metrics*, which express quantified comparisons between impacts and sustainability norms, usually in the form of a quotient.²

Typically, numerators in such quotients express the measured impacts of an organization in a particular AOI of interest, while the denominators express the corresponding sustainability norms (i.e., what the impacts would have to be in order to be sustainable, expressed in terms of organization-specific *thresholds and allocations*).³ The resulting values can either be 1.0, less than 1.0, or greater than 1.0. For

¹ See McElroy 2017.

² For more on context-based metrics, see McElroy et al. 2006, McElroy 2008, and McElroy and van Engelen, 2012; see also “Context-Based Sustainability” on Wikipedia at: https://en.wikipedia.org/wiki/Context-Based_Sustainability.

³ For an understanding of *thresholds and allocations* in this sense, see the related subsection on Wikipedia at: https://en.wikipedia.org/wiki/Context-Based_Sustainability

environmental AOIs, scores of ≤ 1.0 signify sustainable performance; for social or economic AOIs, the logic reverses and scores of ≥ 1.0 are sustainable.⁴

Because SA indicators express performance relative to sustainability norms, they are only used in cases where duties or obligations to perform in particular ways (i.e., norms) arguably exist. Organizations that emit greenhouse gases, for example, are ethically bound, most would say, to mitigate and ultimately eliminate their emissions in light of the negative effects they can have on the climate system and on human well-being as a result. Engaging in philanthropy, by contrast, would tend to be more discretionary and therefore less subject to sustainability norms.

What this means is that whereas SA indicators should always be used in cases where performance is being assessed relative to normative AOIs, IV indicators are under no such constraint. An IV indicator can be used for an AOI whether it corresponds to a duty or obligation or not. In no case, however, does an IV indicator actually express sustainability performance.

Materiality in the case of SA indicators, then, is contingent upon the determination of whether or not corresponding duties or obligations (Ds/Os) exist. In cases where impacts do in fact correspond to such Ds/Os, SA indicators must be used; in cases where they do not, IV indicators will do. Epistemology and value theory, in particular, therefore play a pivotal role in the making of materiality determinations for performance accounting in organizations and other human social systems. Performance, that is, relies on sustainability as its regulative ideal; and sustainability, in turn, is grounded in epistemology.⁵

2 Context-Based Materiality

With the above as background, the recommended materiality determination process set forth below is taken from a broader sustainability management methodology and doctrine known as Context-Based Sustainability (CBS).⁶ The central tenet of CBS is that the sustainability performance of an organization is a function of what its impacts on vital capitals are relative to norms for what they would have to be in order to ensure human well-being. Organizations, in turn, can thereby be held to normative standards of performance for what their impacts on vital capitals must be in order to be considered sustainable.

Six types of capital are of particular relevance to integrated accounting at this time: natural, human, social and relationship, manufactured (also known as constructed or built), financial (or economic), and intellectual.⁷ In some cases, intellectual capital is treated as an embedded element of human, social and relationship, and/or other capitals and is not separately listed independent of them.

⁴ See McElroy et al. 2006, McElroy 2008, and McElroy and van Engelen, 2012.

⁵ For more on the role of regulative ideals, see Emmet 1994.

⁶ See “Context-Based Sustainability” on Wikipedia at: https://en.wikipedia.org/wiki/Context-Based_Sustainability.

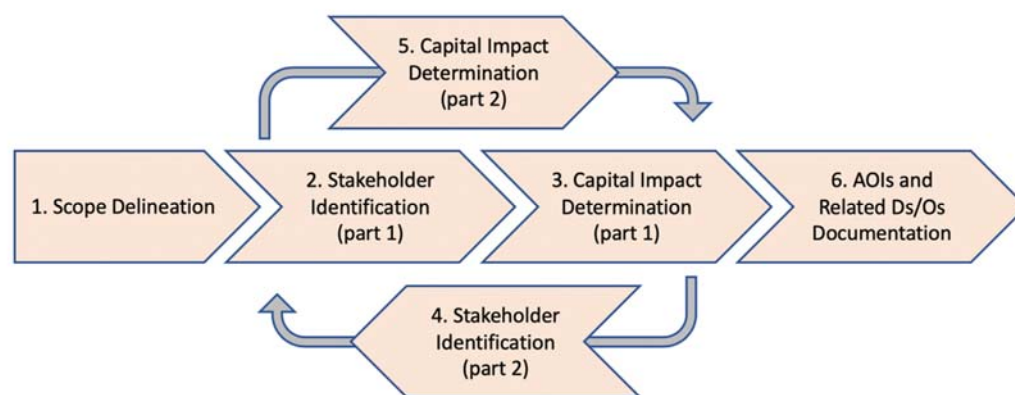
⁷ For more on the evolution and significance of capital theory in performance accounting, see Gleeson-White 2015, and also this bibliography of important works in the capital theory literature over the past 300-plus years: <https://www.sustainableorganizations.org/Capital-Theory-References.pdf>

The most advanced and fully elaborated form of CBS developed thus far is the MultiCapital Scorecard (MCS), a context-based triple bottom line (TBL) performance accounting method. In broad strokes, the use of the MCS follows three basic steps:⁸

- **Scoping and Materiality** – This step consists of defining the boundaries of a project and determining the entity-specific material financial and non-financial areas of impact (AOIs) that should be addressed in the development of a MultiCapital Scorecard – an integrated (TBL) performance accounting tool.
- **AOI Development** – This phase consists of defining sustainability norms and targets, interim goals, context-based metrics, weights and data collection protocols for each of the material AOIs identified in the first step.
- **Scorecard Implementation** – This step consists of all work required to fully operationalize a MultiCapital Scorecard in an organization and to measure, manage and report performance relative to its own material AOIs.

Since it is not within the scope of this paper to fully explain CBS or MCS further, only the materiality determination process referred to in the first step above will be discussed. Of particular interest is performance of the *Scoping and Materiality* step, which is one of the defining characteristics of CBS. As shown in **Figure 1**, the *Scoping and Materiality* step breaks down into six underlying sub-steps of its own. Each is explained below.

Figure 1: Context-Based Materiality Determination Process (and its two recursive loops)



Source: Author's own illustration.

Step 1: Scope Delineation

The first sub-step is to simply be clear about the functional domain or entity whose performance is to be assessed. In most cases, the scope or boundary of interest will be an organization's own operations; in other cases, its supply chain and/or its demand chain (i.e., its customers or consumers) will also be included.

This, of course, is important because depending on whose performance is to be assessed, the scope of material areas of impact (AOIs) will vary significantly. The inclusion of suppliers and customers, for example, essentially requires that those who

⁸ See McElroy and Thomas 2015, and Thomas and McElroy 2016.

may be making materiality determinations from within an organization assume the position of both, as if responsibility for the sustainability performance of suppliers and customers rests with the organization itself.

Step 2: Stakeholder Identification (Part 1)

Once the boundaries of a materiality determination effort have been defined in terms of who the party or parties are whose sustainability performance is to be assessed, the next step is to identify the separate parties to whom duties of performance are normatively owed (See **Box 1**).

This is important, if only so that we can distinguish between parties to whom affirmative Ds/Os are owed and others to whom benefits may be dispensed on a more discretionary basis. Here it may be useful to differentiate between morally, or even contractually, enforceable entitlements on the one hand and gifts on the other.

For purposes of making materiality determinations, we can define such parties to whom affirmative Ds/Os are owed to have impacts on vital capitals in ways that can affect their well-being as *stakeholders* (or better yet, as rightsholders as explained below⁹). Modern stakeholder theory, by contrast, defines the term as follows:¹⁰

“A stakeholder in an organization is (by definition) any group or individual who can affect or is affected by the achievement of the organization’s objectives.”

Our definition, then, takes a more normative position, by choosing to focus as it does on affirmative Ds/Os owed by one party to another as the basis for determining whether or not an area of impact (AOI) should be regarded as material for purposes of performance accounting.¹¹

And because of its emphasis on the morally or contractually enforceable rights of parties (stakeholders) to whom related Ds/Os may be owed, we agree with the occasional preference of others to refer to stakeholders in these terms as *rightsholders*.¹² Stakeholders, in other words, are rightsholders whose well-being is not just potentially affected by the actions of others, but whose well-being ought to be so affected in particular ways, by virtue of the entitlements they hold for moral, ethical, or contractual consideration. That, then, is the sense in which we are using the term *stakeholders*.

This step, then is to determine who an organization’s stakeholders actually are. In most cases, such parties will include shareholders or owners, employees, customers, trading partners and communities, some of whom whose interests may be represented by third-party regulators of one kind or another. The output of this step, therefore, is a preliminary (part 1) inventory of stakeholders to whom management in an organization believes Ds/Os are owed to manage its impacts in ways that can affect their well-being (e.g., to pay employees a living wage; to safeguard community well-being by eliminating greenhouse gas emissions; to ensure customer well-being by producing safe products; etc.).

⁹ Reporting 3.0 2016.

¹⁰ Freeman, E. 1984, p. 46.

¹¹ See McElroy 2008, and McElroy and van Engelen 2012 for more on the Ds/Os approach to materiality.

¹² Reporting 3.0 2016.

Here again, it is important to test and evaluate the alleged stakeholder status of all parties in such lists by questioning whether or not corresponding Ds/Os actually exist, as opposed to cases in which impacts on their well-being are merely possible, but not in any way morally or contractually enforceable (i.e., supererogatory acts). By this criterion, it may very often be the case that an organization's impacts on achievement of the UN's Sustainable Development Goals (SDGs) fail to qualify as material – and rightfully so, for they are not obligatory. Other forms of purely voluntary if not philanthropic acts of benevolence, too, may be deemed to be immaterial for the same reasons.

In addition to simply identifying stakeholders to whom Ds/Os are believed to be owed, this step should also include at least an initial attempt to specify what the scope of such duties and obligations actually happen to be. Of significant importance here is that all such Ds/Os should be expressed in terms of what the capitals are upon which an organization should be having impact, focusing in particular on direct impacts rather than indirect ones. All material impacts, that is, ultimately and indirectly affect stakeholder health and well-being, but it is the direct impacts upon capitals upon which they rely as means, not ends, that are of most interest to us here.

Box 1: The Epistemology of Materiality

One useful way of defining sustainability is to regard it as the study of human impacts on vital resources in the world (capitals), insofar as such impacts can affect their quality or sufficiency for human well-being. Thus, when we say that an impact is unsustainable, what we are really saying is that the effects of the impact puts either the sufficiency of the resources involved or the well-being of those who depend on them, or both, at risk.

Strictly speaking, such statements are purely descriptive and empirical in content. In other words, they provide a factual description of what the effects of impacts on resources and human well-being may be; but they do not in any way pass judgment on them.

With this in mind, we can also say that sustainability is not just the study of human impacts on vital capitals in the world, but also the management of them in ways that can affect their sufficiency with desired ends in mind. In this regard, sustainability is normative in form – it not only seeks to understand the empirical impacts of human activity on vital capitals, but also to manage them in ways that are valued.

This necessarily leads to a number of normative propositions that arguably underlie the discipline of sustainability management as it has come to be known and practiced in the world. In order for human activity to be sustainable, it must be managed in such a way as to not put the sufficiency of vital capitals or the well-being of humans who depend on them at risk. 'Must be', in this sense, is a normative statement not a descriptive one.

From a performance accounting perspective, then, measuring and determining the sustainability of a human collective (i.e., its sustainability performance) must first be undertaken with the identification of sustainability norms (SNs) against which an organization's actual impacts on vital capitals can be held to account. These will necessarily be different for all organizations, since no two can ever be exactly alike.

That said, it may also be possible that because of all organizations' common circumstances in the world (e.g., they all inhabit the Earth), certain specific SNs will be

universal to all of them. A norm to refrain from emitting greenhouse gas (GHG) emissions, for example, may be universal in this regard, since global emissions already exceed the carrying capacity of the Earth’s ability to assimilate them. On the other hand, some level of emissions by certain sectors, such as food production, may be acceptable given the vital need for nutrition by all humans and the fact that the carrying capacity of the climate system on Earth is not zero.

What this means is that we should scrupulously avoid making blanket assumptions about the universality of SNs and the areas of impact (AOIs) they correspond to, and defer instead to the results of organization-specific materiality studies. If an SN proves to be universal to all organizations, it will only be because it has been determined to be material to all organizations and not the reverse.

To say that an SN or AOI is material to an organization, then, is to say that it must be included in the portfolio of metrics or indicators used to assess its sustainability performance. Indeed, one could further say that only such demonstrably material metrics or indicators should be used for that purpose, because everything else of possible interest more appropriately falls into the category of discretionary impacts, not normative ones.

This is important, of course, because assuming we are talking about the production of blended or integrated scoring for sustainability performance (i.e., so-called integrated accounting¹³), the easiest way to offset a negative score in an obligatory AOI would be to combine it with a positive score in a discretionary one. The potential here for gaming an accounting system, or for simply producing scores that misrepresent actual performance, is not to be overlooked and should be avoided at all costs.

The materiality of an AOI, therefore, must be determined by reference to the question of whether or not a corresponding SN exists. And if an SN does arguably exist, the next question is to whom the underlying duty or obligation is owed. In the epistemology being advocated here, the parties to who Ds/Os are owed are what we mean by stakeholders. Stakeholders, that is, are parties to whom duties or obligations are owed by organizations to manage their impacts on vital capitals in ways that can affect their – the stakeholders’ – well-being.

What, then, do we mean by duties and obligations?

John Rawls, in his landmark work, *A Theory of Justice* (1971), provides us with some ready answers as follows:

“... there are many duties, positive and negative ... The following are examples of natural duties: the duty of helping one another when he is need or jeopardy, provided that one can do so without excessive risk or loss to oneself; the duty not to harm or injure another; and the duty not to cause unnecessary suffering. The first of these duties, the duty of mutual aid, is a positive duty in that it is a duty to do something good for another; whereas the last two duties are negative in that they require us not to do something that is bad ... Now in contrast with obligations, it is characteristic of natural duties that they apply to us without regard to our voluntary acts [or commitments].” (p. 98)

“There are several characteristic features of obligations which distinguish them from other moral requirements [e.g., duties]. For one thing, they arise as a result of our

¹³ See, for example, the *Integrated Reporting <IR> Framework* at: <http://www.theiirc.org> or the MultiCapital Scorecard at: <https://www.multicapitalscorecard.com>

voluntary acts; these acts may be the giving of express or tacit undertakings, such as promises and agreements, but they need not be as in the case of accepting benefits. Further, the content of obligations is always defined by an institution or practice the rules of which specify what it is that one is required to do. And finally, obligations are normally owed to definite individuals, namely, those that are cooperating together to maintain the arrangement in question [e.g., trading partners, members of a body politic, etc.].” (p. 97)

But even in cases where a duty or obligation is claimed, there still remains the question of what the test is, or can be, to assess its legitimacy. This is where Kant’s Categorical Imperative (CI) has an important role to play.¹⁴ In short, Kant’s CI reads as follows (as commonly translated):

There is therefore but one categorical imperative, namely, this: Act only on that maxim whereby thou canst at the same time will that it should become a universal law.

In other words, the correct moral course of action is the one which, if everybody did it, would lead to a fair, just and equitable world – or to a sustainable world, in the case of our subject – and to the preservation of human well-being. A legitimate duty or obligation, then, is one which if universally put into practice by all those to whom it applies would lead to a world in which human well-being obtains.

By contrast – and this is important – it must also be the case that to be legitimate, the failure to abide by an alleged SN would be unsustainable (i.e., would constitute a breach or violation of a duty or obligation on the part of an actor), and not just a failure to perform an otherwise discretionary act.

This latter principle is important because it helps us to differentiate between alleged SNs that are tied to real or authentic Ds/Os versus other potential courses of action that are purely discretionary, such as philanthropy. For a company to engage in philanthropy, of course, is a good thing, but it would go too far to say that doing so is obligatory or that failing to do so would be unsustainable.

Indeed, person (or organization) cannot be held to account for the consequences of failing to do something that was discretionary from the start and which he/she/it was under no obligation to perform in the first instance. Accountability, that is, logically implies an antecedent and non-discretionary duty or obligation to act or not act in some way. Absent that, whether or not an action and its impacts have actually occurred is of no relevance – or materiality – to sustainability accounting.

Step 3: Capital Impact Determination (Part 1)

Because of the focus on capital impacts in this process and the effect they can have on the quality of human well-being, all of the capital impacts an organization has should be assessed for their potential materiality, whether they were previously identified in step 2 above or not.

Indeed, this is why this step is included, since while we certainly hope that the performance of step 1 will result in the identification of all material impacts on vital capitals, it will sometimes be the case that impacts are overlooked when viewed solely

¹⁴ Kant 1785.

through the perspective of a stakeholder lens. Regardless of which groups may have already been identified as stakeholders in step 2, organizations should also make an effort to identify impacts they may be having on vital capitals, and whether or not such impacts were either already identified or should be added if not.

Importantly, not all capital impacts that may have been missed in step 2 will necessarily be material when identified in step 3. To cite an example, organizations compensate their employees for the work they perform. Their employees, in turn, may have families or dependents who rely on them for their own well-being. Employees' dependents, that is, rely on the impacts all organizations have on their employees' economic capital (i.e., on their earnings).

But that is not to say that an employer has a duty or obligation to any of its employees' dependents. Rather, Ds/Os of that kind arguably rest with employees themselves, vis à vis their relationships with their own families and dependents (i.e., their own stakeholders). Employees, too, may have separate duties and obligations to their creditors; to their governments to whom taxes are owed; and to others. Employers per se are not accountable for any of that despite the fact that their impacts on the economic capital of employees is vital to its employees' families', dependents', and creditors' well-being.

It should be clear, we hope, that drawing the lines as we have between direct capital impacts and indirect impacts, and between parties to whom Ds/Os are affirmatively owed and others who may only be indirectly impacted, is critically important to the making of materiality determinations. Otherwise we find ourselves in a situation of infinite regress, whereby everyone's interests are allegedly material to an organization's impacts, in which case the term loses its meaning and performance accounting becomes untenable.

In addition to assessing all existing impacts on vital capitals for their potential materiality, it is also important to consider impacts on capitals that may not yet be occurring, but which should be occurring by dint of the relationships organizations have with their stakeholders. This can either take the form of capital impacts that are not occurring at all, or of impacts that while they may be occurring, have not also been flagged as corresponding to Ds/Os of some kind.

Common cases of the former (missing impacts) might include impacts on the downstream environmental effects of product use or disposal. Long regarded as externalities in economic theory, the externalized costs of organizations' products or services are now increasingly being viewed as material to an organization's own performance – within the scope of its own materiality.

Common cases of the latter (misconstrued existing impacts) might include employee compensation increasingly subject to livable wage expectations, income inequality norms, gender parity, and other ethical considerations. The choice and performance of suppliers, too, is now frequently showing up on the radar screens of manufacturers as being material to their performance in addition to whatever may be happening within their own operations.

Step 4: Stakeholder Identification (Part 2)

The fact that separate consideration of capital impacts will have occurred in step 3 of the materiality determination process, independent of stakeholder identification in step 2, means that new or other stakeholders not previously identified in that step may have emerged. In this fourth step, then, we make an effort to account for that by recursively revisiting the question of whether or not the list of stakeholders identified in step 2 is complete.

The ethical treatment and/or well-being of employees in a supply chain, for example, might be flagged as something an organization ought to consider in light of the social, economic and environmental consequences of, say, the products it makes and from whom it chooses to source its raw materials. And while the impacts it may have in such cases might be indirect (i.e., its suppliers may be having the impacts of interest here, not the organization itself), the effects of raw materials procured can be no less directly attributable to the organization itself given the role they (the materials) play in its own primary business. To outsource the production of raw materials is not to be absolved of the impacts involved.

In this example, the employees of suppliers, and not just its own, might take on the status of stakeholders with standing, to whom Ds/Os are owed by a procuring organization to manage its impacts on economic capital of importance to them (i.e., to the employees of organizations from which procurements are made). Out of that might come Ds/Os by an organization to apply standards of performance to its suppliers in terms of how they treat their employees and mitigate or manage their impacts on the environment.

The output of this step, then, should be updates, if any, to the lists of stakeholders, capitals and their corresponding Ds/Os otherwise already identified as a consequence of steps 2 and 3 above.

Step 5: Capital Impact Determination (Part 2)

And just as the identification of capital impacts can potentially lead to the identification of additional stakeholders, so can the further identification of additional stakeholders lead to the identification of additional capital impacts. With this in mind, we include one more recursive step in the materiality determination process to be sure that no material stone has been left unturned.

An example might include steps an organization can take to help smallholder farmers in a food-related supply chain develop a farmers' co-op by which they can collectively negotiate better terms and conditions with local buyers or distributors from who a company directly purchases its supplies. In that case, it would not be the suppliers' businesses per se that a company's impacts and corresponding Ds/Os would pertain to; rather, it would be on the development of other forms of social or economic capital one step removed from them (i.e., of the smallholders who supply them). (See **Box 2** for more on the special case of how otherwise discretionary AOIs can become normative, especially where the principle of promissory estoppel comes into play.)

Box 2: When the Discretionary Becomes Obligatory

The combination of steps 3 and 4 in the process put forth in this paper – both consisting of an effort to recursively revisit the lists of material stakeholders, impacts on capitals and their corresponding Ds/Os – are not only intended to help ensure completeness in the materiality determination process, but also to raise another important consideration in the identification of material areas of impact (AOIs): purpose-driven materiality.¹⁵

While most of what we have said so far relies on Ds/Os that are essentially non-voluntary and which arise from the moral and contractual relationships organizations have with others of many sorts (i.e., owners, employees, customers, etc.), there is also the special case of parties to whom Ds/Os of an organization's own choosing may exist because of voluntary commitments it has made to have impacts of one kind or another that are discretionary – usually as a consequence of having committed itself to a purpose of some kind.

This type of purpose-driven materiality will commonly come into play in the case of, for example, Public Benefit Corporations¹⁶ or Certified B Corps¹⁷ or any other organization that has voluntarily committed itself to having a public benefit of some kind. The intellectual or normative principle in such cases is known as the doctrine of *promissory estoppel*.¹⁸

At Ben & Jerry's, for example, the well-known ice cream maker and subsidiary of Unilever, engaging in social activism at defined levels has been identified as a material AOI with a corresponding duty or obligation owed to shareholders, employees, customers and communities. Engaging in social activism is, of course, rarely a requirement for most for-profit companies, unless, that is, they make a public commitment to it – which is what Ben & Jerry's did many years ago. Once a public commitment is made to what is otherwise a purely discretionary type of impact, the doctrine of promissory estoppel comes rushing into play and the behaviors and impacts involved are no longer discretionary.

Indeed, once a public commitment is made to perform in a particular way, it can have the effect of creating expectations and setting standards of performance that others, stakeholders, will then rely on in order to make reciprocal commitments of their own. Prospective investors, employees, and customers with social motivations, for example, may be drawn to a company that has made public commitments to social activism, in which case a company will have literally traded, in a sense, on the proclamations it has made to behave in particular ways. Others who have relied on such commitments by investing in a company, working for it, or buying its products arguably have a moral right to expect a degree of good faith performance in return. In such cases, the AOIs and the corresponding Ds/Os involved may rightly be considered material insofar as performance accounting is concerned.

¹⁵ See McElroy 2018 for more on purpose accounting: <https://sustainablebrands.com/read/finance-investment/move-over-sustainability-accounting-here-comes-purpose-accounting>

¹⁶ See https://en.wikipedia.org/wiki/Public-benefit_corporation for more information about Public Benefit Corporations.

¹⁷ See <https://bcorporation.net> for more information about Certified B Corps.

¹⁸ See https://en.wikipedia.org/wiki/Estoppel#Promissory_estoppel for more information on the doctrine of promissory estoppel.

Step 6: AOIs and Related Ds/Os Documentation

Once materiality determinations have been made as described above in steps 1 through 5, the results should be documented. Of key importance in the documentation are the following elements:

- **Boundary Specification** – What is the entity or actor whose sustainability performance is at issue and what are its boundaries of operation?
- **Identification of the AOIs** – What are the discrete areas of impact (AOIs) that have been determined to be material (e.g., wages paid to employees, water use, greenhouse gas emissions, etc.)
- **Associated Stakeholders and Ds/Os** – What are the corresponding duties and obligations for each material AOI and to whom are they owed? Who, that is, are the stakeholders in the case of each AOI?
- **Legitimacy of Ds/Os** – Each assertion made to the effect that Ds/Os are owed to specific stakeholder groups for specific AOIs requires explanation as to its validity or legitimacy. This will generally be by appeal to the argument that an organization's impacts on vital capitals are material because of the effect they can have on human (stakeholder) well-being and the need, therefore, to regulate them; and/or the effects organizations are duty-bound to have on capitals for the same reason, given the relationship that exists between them (e.g., between an organization and a stakeholder group). Legitimacy arising from the kinds of purpose-driven proclamations discussed in **Box 2**, and the sort of self-imposed materiality that follows, will also be important to explain here.
- **Norms, Targets and Metrics** – In anticipation of the next step in the broader CBS methodology summarized above, *AOI Development*, the initial *Scoping and Materiality* step should conclude by not only identifying and describing AOIs determined to be material, but also by indicating a set of possible norms, targets and metrics to be applied in each case. These need not be final in content, but should at least be sufficient for purposes of getting started in the next step – preliminary or suggestive in form.

Figure 2: Excerpt from Context-Based Materiality Determination Performed at Cabot Creamery Cooperative in 2008

STAKEHOLDER GROUP	AOIs and their corresponding DUTIES & OBLIGATIONS (Ds/Os)	VITAL CAPITALS	BOTTOM LINE	#	POTENTIAL METRICS
Consumers	AOI: FOOD				
	This Duty & Obligation (D/O) is predicated on the view that human well-being is, in part, a function of having access to safe food. Consumers must therefore be able to trust and rely upon producers as having sufficient quality control procedures in place to safeguard their products against contamination or other risks to human health. To fulfill this D/O, Cabot must invest in the development and use of human and social capital consisting of the knowledge and skills required to produce safe products, and constructed capital consisting of ingredients, technology, equipment, and facilities needed to produce and maintain safe products.	Human, Social and Constructed	Social	1	Existence of a protocol to ensure the production and distribution of safe food.
				2	Proportion of safe ingredients used compared to a standard of 100% safe ingredients.
				3	Proportion of safe finished product compared to a standard of 100% safe finished product.
Global Community	AOI: CLIMATE SYSTEM				
	This D/O is predicated on the view that human well-being is, in part, a function of being able to live in a safe and properly functioning climate system on Earth. Since Cabot's operations have impact on related natural capital (i.e., the effects of greenhouse gas emissions on the climate system), it has a D/O to manage its emissions accordingly. To fulfill this D/O, Cabot should restrict its emissions, such that they do not exceed its proportionate share of the assimilative capacity of the atmosphere to absorb them, and are consistent with science-based interim reduction targets. Long-term, Cabot's goal is to strive toward carbon neutrality.	Natural	Environmental	1	Existence of a protocol to ensure that greenhouse gas emissions are properly measured and managed.
				2	Actual emissions compared to a sustainability norm of zero emissions (carbon neutrality).
				3	Actual emissions compared to year-over-year science- and context-based interim reduction targets.

Source: Cabot Creamery Cooperative in collaboration with the author (2008). Reproduced with permission.

Included here for illustrative purposes is a brief excerpt of materiality documentation taken from a project performed at Cabot Creamery Cooperative, a large dairy food producer (and co-op) in New England, in 2008 (see **Figure 2**). The boundaries of the project at Cabot included its corporate headquarters in Vermont and its four manufacturing facilities throughout the region. Only two of the fourteen AOIs ultimately determined to be material to Cabot's sustainability performance are shown here.

3 Alternative Methods and Standards

For added perspective, it may be useful to compare the materiality determination process set forth above with other approaches featured in international methods and standards otherwise used for measuring and reporting performance throughout the world. To do so, however, we must remember the all-important distinction we made at the start our paper, the one that distinguished between indicators of sustainability accounting (SA) and impact valuation (IV).

Since the materiality process described in this paper pertains specifically to sustainability performance and not just impacts in incremental terms, we are only concerned with the treatment of materiality by other SA approaches and nothing else. What, then, are they?

To help answer this question we have included a table (**Figure 3**) in which we compare and contrast what are arguably the seven leading methods and standards for performing sustainability-related – or as colloquially seen as such – performance accounting assessments today.

Figure 3: Comparative Analysis of Sustainability-Related Performance Accounting Methods and Standards

	Type of Method			Materiality				Key Attributes		
	TBL in Scope	Impact Valuation	Sustainability Accounting	Orientation		Source of Indicators		Context-Based	Purpose-Based	Multi-Capital-Based
				Shareholder-Centric	Stakeholder-Centric	Predetermined	User-Determined			
B Corp BIA	✓	✓			✓	✓			✓	
Common Good Balance Sheet	✓	✓			✓	✓				
Future Fit Business Benchmark			Incomplete ²		✓	✓		Incomplete ²		
GRI	✓	Effectively ¹	See Note ¹		✓	✓		Incomplete ¹		
IIRC <IR>	✓	✓		✓			✓			✓
MultiCapital Scorecard	✓		✓		✓		✓	✓	✓	✓
SASB	✓	✓		✓			✓			✓

Notes:

1. GRI omits guidance for its *Sustainability Context principle*; no GRI report, therefore, has ever actually disclosed sustainability performance in full TBL terms.
2. Future Fit fails to fully address thresholds and allocations in some of the areas of impact (AOIs) it covers and therefore makes sustainability reporting per se impossible; it also does not address economic sustainability performance at all and falls short of full TBL accounting in that regard.

Source: Author's own illustration.

Our reasoning behind how and why we characterized the seven methods and standards shown in **Figure 3** in the ways we did is provided below:

- **B Corp Business Impact Assessment (BIA)**¹⁹ – The *BIA* is a tool used by its maker, B Lab, to assess the qualifications of organizations to be designated as Certified B Corps. As such, it was not designed to be a sustainability accounting method at all, and is perhaps best described as an impact valuation or assessment tool for determining the strength of B Corp credentials at self-proclaimed purpose-driven companies.
- **Common Good Balance Sheet**²⁰ – The Economy for the Common Good (ECG) method, the *Common Good Balance Sheet*, assesses organizational contributions to social, economic and environmental conditions in twenty

¹⁹ <https://bimpactassessment.net>

²⁰ <https://www.ecogood.org/en/our-work/common-good-balance-sheet/>

thematic areas of interest. As such, it does not comprise an SA method per se, since it does not assess impacts relative to sustainability norms or standards of performance. The ECG's *Common Good Balance Sheet*, too, is predetermined in content, thereby obviating the need for making materiality determinations in favor of applying a one-size-fits-all set of indicators to all organizations.

- **Future-Fit Business Benchmark (FFBB)**²¹ – The Future-Fit Foundation's *Future-Fit Business Benchmark* ostensibly qualifies as a sustainability accounting system despite the fact that its makers do not describe or promote it as such. It qualifies in any case because of its grounding in principles of social and ecological limits and thresholds, or norms, thanks mainly to its roots in the *Natural Step* method.²² That said, in cases where allocations, not just thresholds, are required in order to define organization-specific standards of performance, the *FFBB* refrains from taking that step. It is in that regard incomplete in scope. Like the *Common Good Balance Sheet*, the *FFBB* also suffers from the fact that it predetermines indicators, thereby rendering materiality determinations irrelevant to its approach. Any other indicators that might qualify as organization-specific but which have not already been included in the *Benchmark* are simply excluded from use.
- **Global Reporting Initiative (GRI)**²³ – GRI's *Sustainability Reporting Guidelines*, of course, have been the world's leading international model for sustainability reporting for many years. Since 2002, when the second-generation of the *Guidelines* was released – referred to as *G2* – the reporting principles contained therein included one known then and now as the *Sustainability Context* principle.²⁴ That principle essentially called for users of the *Guidelines* to report their performance relative to what we and others now regularly refer to as contextually relevant thresholds and allocations.²⁵ Nonetheless, GRI failed to provide instructions for how to apply its principle, resulting in a gap in both guidance and reporting that has been in place ever since. It is because of that gap that no GRI-compliant report has ever actually adhered to the principle, much less reported sustainability performance as intended by GRI.
- **Integrated Reporting <IR> Framework**²⁶ – The International Integrated Reporting Council's (IIRC's) *<IR> Framework* is arguably the most emblematic form of IV reporting. Its intended audience is, in fact, providers of financial capital (i.e., investors and lenders) for whom its purpose is to describe how organizations create value. Its materiality determinations are oriented accordingly. Measuring and reporting sustainability performance, then, is not at all what the *<IR> Framework* was designed to do.
- **The MultiCapital Scorecard**²⁷ – The *MultiCapital Scorecard (MCS)* is a context-based, open-source, triple bottom line performance accounting method

²¹ <https://futurefitbusiness.org>

²² <https://thenaturalstep.org>

²³ <https://www.globalreporting.org/Pages/default.aspx>

²⁴ For more on sustainability context, see <http://www.sustainableorganizations.org/SustyContext-WhatIsIt.pdf>

²⁵ Again, see: https://en.wikipedia.org/wiki/Context-Based_Sustainability#Thresholds_and_Allocations.

²⁶ <http://integratedreporting.org>

²⁷ <https://www.multicapitalscorecard.com>

developed by Martin P. Thomas, formerly of Unilever, and Mark W. McElroy, Executive Director of the Center for Sustainable Organizations (and author of this paper). The *MCS* qualifies as a sustainability accounting (SA) method in all respects and heavily relies on the materiality determination process set forth above.

- **Sustainability Accounting Standards Board (SASB)**²⁸ – SASB is a U.S.-only set of sector-based reporting standards that, like the IIRC, calls upon organizations – publicly traded ones – to take account of their impacts on resources required to create and maintain shareholder value; and also of external factors that could put shareholder value at risk. SASB further defines materiality from the perspective of investors only, embracing as it does the interpretation of the term put forward by the Securities and Exchange Commission (SEC) in the United States. As such, SASB is an IV standard, not an SA standard, since it only considers the interests of investors, and not at all in context-based terms.

As **Figure 3** shows, only one method, the *MultiCapital Scorecard*, qualifies as a full triple bottom line (TBL) sustainability accounting method, with two of the others, GRI and the *Future Fit Business Benchmark*, constituting alternative SA methods/standards that are in some way compromised. In order to qualify as a full or authentic TBL accounting method, the scope of such a method would have to in fact cover social, economic and environmental performance and in a context-based way (see Notes included at the bottom of **Figure 3**).

It is perhaps also worth pointing out that, strictly speaking, three of the seven methods and standards listed above are not accounting methods at all (of either the IV or SA type) and instead are reporting tools (i.e., GRI, the <IR> Framework, and SASB). By that criterion alone, only two of the remaining methods, the *Future-Fit Business Benchmark* and the *MultiCapital Scorecard*, qualify as SA methods, either in full or in part.

Box 3: Context-Based Materiality and Comparability

One of the hallmarks of context-based sustainability (CBS) as an approach to performance accounting in business is that it features the use of organization- or company-specific metrics. Indeed, a basic tenet of CBS is that no two organizations are exactly alike and it makes sense, therefore, for them to use different metrics to assess their performance, all in accordance with their own materiality determinations.

Critics of this approach sometimes allege that a shortcoming of CBS is that it cannot allow for inter-organizational comparisons of performance, since the metrics used to measure and report performance are liable to be different across organizations. Instead, they call for the use of one-size-fits-all alternatives where the same metrics are being used in all cases.

First- vs. Second-Order Metrics

The premise behind this particular criticism of CBS, of course, is that comparability is contingent upon consistency in the use of what we might call first-order metrics. First-order metrics are indicators used to measure an organization's impacts on vital capitals,

²⁸ <https://www.sasb.org>

such as its impacts on water resources, the climate system, product safety, or wages paid to its employees. In CBS, metrics are chosen on the basis of organization-specific materiality determinations and will almost always vary by company, albeit with some overlap. How to compare different companies' performances when different things are being measured is the issue here.

This leads to what we might call second-order metrics. A second-order metric is a meta-metric in the sense that it provides a uniform way of reporting performance that is otherwise expressed using different (if not incommensurable) first-order metrics. Take water as an example. A first-order metric for water in CBS will typically compare usage to a not-to-exceed target for consumption (in gallons). If consumption is at or below the target, we can say it's sustainable; if it's above the target (too high), we can say it's not.

A measure of water use can therefore be expressed in terms of whether or not a particular target is being met, and not just in volumetric terms. Whereas the first-order metric might be expressed in terms of gallons of water consumed, the second-order metric for the same area of impact (water use) is expressed in terms of whether or not it (the impact) is sustainable. Water consumption in gallons (a first-order metric) falls on an analog scale; the sustainability of water use, however (a second-order metric), falls on a binary scale: an impact is either sustainable or not.

Mapping Performance to a Meta-Scale

All other first-order metrics can be mapped to the same second-order or meta-scale, and that's what makes meaningful integrated reporting – and comparability between organizations – possible. Indeed, despite the differences in how different organizations measure their own sustainability performance – each according to the results of its own materiality analysis and with its own set of context-based metrics – cross-comparisons of organizational performance can still be made using second-order metrics – sustainability metrics in this case. All organizations, that is, can be held to the same standard of performance (sustainability), despite the fact that the impacts they're assessing and the metrics they're using may be completely different.

Thus, what starts out as the use of different metrics by different organizations (first-order metrics) is later translated into a common language (second-order metrics) rendering performance by all of them comparable. In CBS, then, we get the best of both worlds: organization-specific metrics *and* comparability. As long as everyone's metrics, notwithstanding their first-order differences, are measuring performance in accordance with the same general principles, our otherwise different measures of performance can be compared. In CBS, those general principles are (1) context-based materiality,²⁹ and (2) the use of context-based metrics.³⁰

²⁹ For more on context-based materiality and integrated reporting, see <https://sustainablebrands.com/read/new-metrics/materiality-and-integrated-reporting-a-context-based-perspective-part>

³⁰ https://en.wikipedia.org/wiki/Context-Based_Sustainability#Context-Based_Metrics

4 Concluding Remarks

Of most importance in this paper are the following key points:

- Whether or not there can be universal indicators of sustainability performance in organizations ultimately depends upon the results of materiality determinations in all cases. If an indicator is universal, it can only be because it is demonstrably material for all organizations. It is incumbent upon those who claim that an indicator is universal, therefore, to defend their position by providing evidence to the effect that it is in fact material in all cases – or at least theoretically so. Even universal indicators, to the extent they may exist, receive their legitimacy from the results of materiality determinations. Anything short of that only begs the question.
- For an indicator to be material – be it universal or organization-specific – it must be the case that a corresponding duty or obligation (D/O) exists for an organization to manage its impacts on vital capitals in ways that can affect the well-being of a stakeholder. A stakeholder is anyone, or group, to whom such a D/O is owed.
- Here we adopt an interpretation of materiality that is grounded in Context-Based Sustainability (CBS), which in turn is capital- and stakeholder-centric; and also, ultimately, in the principle of human well-being. According to CBS, an organization's behavior is sustainable if it meets or exceeds its Ds/Os to have impacts on vital capitals in ways that can affect its stakeholders' well-being; its behavior is unsustainable if it does not.
- This necessarily means that the choice of indicators for sustainability performance must be predicated on materiality determinations that set out to (a) identify an organization's stakeholders, and (b) specify the duties and obligations owed to each of them to have impacts on vital capitals in particular and normative ways. Any indicators that fail to meet these criteria do not qualify for use as measures of sustainability performance.
- This also means that indicators or metrics used for assessing sustainability performance must themselves be context-based in form and substance, in the sense that they do not simply measure or express impacts in absolute or incremental terms, but instead express them relative to sustainability norms or standards of performance. Such norms or standards must in turn be determined by reference to *thresholds* in the carrying capacities of vital capitals, and organization-specific *allocations* of the responsibility to create, preserve and/or maintain them with stakeholder well-being in mind.³¹
- We also took steps to differentiate between sustainability accounting (SA) and impact valuation (IV). Indicators for one are generally not suitable for use by the other. IV indicators, for example, are typically not chosen on the basis of Ds/Os owed to stakeholders, nor inclusive of sustainability norms grounded in capital-based thresholds and allocations. IV tools, methods and metrics, that is, do not assess sustainability performance at all.

³¹ For more on how the concept of the carrying capacities of vital applies to materiality and to the specification of context-based metrics, see <https://www.greenbiz.com/blog/2013/06/18/carrying-capacities-capitals>.

- Having made the SA versus IV distinction – and in light of our own interest in addressing materiality determinations for SA only – we then applied that idea to a range of existing, sustainability-related methods and standards in current use. In so doing, we found that only three of the seven methods we identified come anywhere close to fulfilling the definition of SA, with two of them (GRI and *Future-Fit Business Benchmark*) being compromised or incomplete in some way.
- And last, in **Box 3**, we acknowledged and countered the argument that because context-based materiality almost always leads to the use of different metrics by different organizations, comparisons of performance between them are not possible. By making a distinction between what we call first- and second-order metrics, we explained that scores achieved through use of the former can easily be integrated and compared through use of the latter, which makes it possible to map all otherwise incommensurable scores to a common scale – a sustainability performance scale. In effect, we can *score the scores* using a common meta-metric; comparability in performance then follows accordingly.

In the final analysis, managers should never set out to assess sustainability performance using metrics or indicators that do not correspond to duties or obligations or that may be incomplete in that regard. Indeed, it should never be possible for an organization to turn in a positive report or appear to be doing *well* in cases where authentic SA indicators are being used, while operating at the same time in ways that put the sufficiency of vital capitals or the well-being of stakeholders who depend on them at risk. In that event, the indicators in use fail on their face and should be rightly rejected.

To ensure meaningful outcomes in the making of materiality determinations for SA, the six-step process set forth above should be followed. Anything less runs the risk of applying one or more metrics that are predetermined with prejudice and not material at all, or else that fail to assess performance relative to contextually relevant duties and obligations and the sustainability norms they entail. Making credible and legitimate materiality determinations, therefore, must always be done through use of a procedure that is itself context-based.

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