

# Specific Guidelines for Specifying Thresholds and Allocations in Sustainability Measurement and Reporting

## Principles of Context-Based Accounting

(With definitions provided for all underlined words)

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Sustainability analysts shall rely on a context-based theory of performance in their sustainability measurement and reporting practices, according to which performance is measured in terms of what an organization's impacts on the availability or sufficiency of vital capitals are, relative to organization-specific sustainability norms and targets.

MAXIM 1: Sustainability analysts first complete materiality determinations by which they identify material areas of capital impact (i.e., areas of impact, or AOIs) for which performance measurements must be taken and reported by the organization.

MAXIM 2: Sustainability analysts then use context-based metrics for measuring the organization's performance, and specify at least one such context-based metric for each AOI (see Figure 1).

### ***Sustainability Quotient (A/N)***

**A General Specification for Context-Based Metrics\***

$$\text{Sustainability Performance (S)} = \frac{\text{A measure of actual impact on the carrying capacity of a capital (A)}}{\text{A norm, standard, or threshold for what the entity-specific impact on the same capital would have to be in order to be sustainable (N)}}$$

Where:

- For impacts on *natural* capitals, quotient scores of  $\leq 1.0$  = sustainable,  $> 1.0$  = unsustainable
- For impacts on *human, social, constructed* or *economic* capitals, quotient scores of  $\geq 1.0$  = sustainable,  $< 1.0$  = unsustainable

Sustainability metrics ultimately reduce to quotients of *Actual over Normative* impacts on vital capitals:  $S=A/N^*$   
Denominators express entity-specific sustainability norms!

\*Source: McElroy, 2008

**Figure 1 – The Sustainability Quotient**

MAXIM 3: Each context-based metric identified for use by sustainability analysts takes the general form of A/N, where A = an actual impact on the carrying capacity of a capital, and N = a normative impact (or sustainability norm, target or standard of performance) on the carrying capacity of the same capital.

MAXIM 4: The units of measurement used by sustainability analysts to express numerators and denominators in context-based metrics are specific to the AOIs and capital types involved and are always the same for individual metrics (i.e., for their respective numerators and denominators), but may vary from one AOI (and metric) to another.

*FOR EXAMPLE: Whereas impacts on economic capital are typically expressed in monetary units, impacts on water supplies are typically expressed in gallons or cubic meters.*

MAXIM 5: The organization-specific norms or standards of performance expressed in the denominators of context-based metrics, per the duties and obligations an organization has to specific stakeholder groups, are determined by sustainability analysts by identifying:

- thresholds in the carrying capacities of the capitals required to ensure stakeholder well-being;
- the responsible populations for maintaining such thresholds (i.e., is the responsibility shared with others or exclusive to the organization?);
- the organization's fair, just and proportionate share or allocation of the responsibility to maintain them (i.e., the threshold levels), whether shared or exclusive.

MAXIM 6: In determining the carrying capacities of capitals required to ensure stakeholder well-being as an initial step in the development of denominators in context-based metrics (i.e., *thresholds* in the carrying capacities of capitals as addressed in MAXIM 5), the extent of such capacities are determined, or postulated, by sustainability analysts by reference to specific theories, general or scientific knowledge, and/or prevailing ethical norms that correlate the availability of such capitals to required or minimally sufficient levels of human well-being.

*FOR EXAMPLE: 1) levels of greenhouses gases in the atmosphere that should not be exceeded in order to preserve the climate system; 2) the minimum daily number of calories and other nutrients required for human health; 3) gender equality norms; or 4) minimum returns on investment for owners' equity.*

MAXIM 7: Once threshold levels are specified for individual vital capitals, sustainability analysts determine organization-specific allocations of the responsibilities (shared or exclusive) to maintain them, the results of which are expressed in the denominators of context-based metrics.

*NOTE: When determining organization-specific sustainability norms for use in the denominators of context-based metrics, references are made to corresponding science, ethics, legal or regulatory sources, guidance, and authorities whenever possible. In cases where no such supportive guidance exists, sustainability analysts can and should specify sustainability standards of performance of their own making, taking into consideration the input received from stakeholders and applying the results of their own investigations and conclusions.*

**MAXIM 8:** Organization-specific allocations of the responsibilities to maintain the carrying capacities (thresholds) of vital capitals are further determined as follows:

- In cases where the duty or obligation to maintain the carrying capacity of a vital capital is exclusive to an organization, the fair, just and proportionate allocation is similarly specified (i.e., the organization is solely responsible for preserving, producing and/or maintaining the full carrying capacity of the capital at the threshold level and not just a part of it);

*FOR EXAMPLE: An organization is solely responsible to pay its employees a living wage; maintain a safe workplace; produce safe products; achieve shareholder returns; etc.*

- In cases where the duty or obligation to maintain the carrying capacity of a vital capital is shared by an organization with others, the fair, just and proportionate allocation is determined by reference to a scaling factor, such as 1) the organization's proportionate contribution to GDP, 2) its proportionate size in headcount relative to a background population, 3) its proportionate output of products or services relative to its sector, or 4) some other proxy for which related data is similarly available at both the organizational (micro) and societal (macro) levels. Such scaling factors are applied to the corresponding thresholds in order to determine the organization's fair, just and proportionate allocation.

*FOR EXAMPLE: For water use, an organization might rely on a scaling factor according to which its fair share of available renewable supplies does not exceed the level, or percentage, of its proportionate contribution to GDP in the same watershed.*

**MAXIM 9:** For purposes of measurement, reporting and analysis, sustainability analysts can at their discretion correlate all impacts on capitals with, and grouped under, their respective triple bottom line (TBL) categories (social, economic and environmental), such that:

- All impacts on natural capitals are grouped under the environmental bottom line;
- all impacts on economic capitals are grouped under the economic bottom line;
- all impacts on human, social & relationship, and constructed capitals are grouped under the social bottom line;

- all impacts on intellectual capitals, in turn, are grouped in accordance with the other capitals in which they are found (i.e., in which they are embedded).

MAXIM 10: Impacts quantified in the numerators of context-based metrics are expressed in terms of the organization's consumptive or productive effects on the carrying capacities of vital capitals, expressed in the same units of measurement used in denominators.

MAXIM 11: In cases where data sources for context-based metrics do not yet exist, specific actions to create and/or obtain such data on a regular basis are taken by sustainability analysts as needed.

*FOR EXAMPLE: Companies interested in taking responsibility for the performance of their suppliers will need to coordinate with them in order to generate, collect, and report data for the impacts involved. So, too, will companies need to develop data collection protocols within their own operations in cases where the data of interest is currently not being collected (e.g., by implementing the Greenhouse Gas Protocol in order to collect data pertaining to a company's own greenhouse gas emissions in a standardized way).*

MAXIM 12: Once numerators and denominators have been populated with actual and normative data, respectively, in context-based metrics, quotient scores are computed and interpreted in accordance with the scoring conventions shown in Figure 1.

# Glossary

## Allocations

Fair, just and proportionate shares of the responsibilities (duties and obligations) to constrain consumption of natural capitals to organization-specific *not-to-exceed* levels and/or sustain production of all other vital capitals to organization-specific *not-to-be-less-than* levels. From a triple bottom line (TBL) performance perspective, allocations ultimately take the form of sustainability norms expressed in the denominators of context-based metrics.

## Areas of Impact (AOIs)

Resources (i.e., capitals) people rely on for their well-being. In sustainability accounting, AOIs are organization-specific, material cases in which vital capitals are being, or should be, used or impacted in ways that can affect stakeholder well-being, and for which specific context-based metrics may therefore be needed in order to fully assess the triple bottom line performance of an organization. The identification of material AOIs (i.e., those that are qualified as such through materiality determinations) is a precursor to the specification of context-based metrics.

Social AOIs often include product or service safety, workplace safety, child labor practices, gender equality, and other direct impacts on human, social & relationship, and constructed capitals.

Economic AOIs will typically include livable wages, shareholder returns on equity, debt service, and other direct impacts on internal and external economic capitals.

Environmental AOIs usually include the climate system, water quantity, water quality, air quality, biodiversity, land use and habitats, solid wastes, and other direct impacts on natural capitals.

Material areas of impact will also include those associated with purpose-driven strategies or commitments an organization may have made pursuant to its status as a [Certified B Corporation](#), [benefit corporation](#), or simply because of public declarations and promises it has made to have specific social, economic or environmental impacts of some kind (e.g., as is often the case with self-proclaimed “purpose-driven” companies).

## Capitals

Stocks of anything that produce valuable flows of goods or services (resources) that people rely on for their well-being. Can be either internal or external to an organization.

- **Constructed Capital** – Material objects, products, services, systems or ecosystem services created and/or cultivated by humans, including the functions they perform. It is the world of human artifacts and the functions or services they provide, in which other capitals are usually embedded, including intellectual capital. It is the world of human design.
- **Economic Capital** – The pool of funds available to an organization, including debt and equity finance (financial capital), and also net assets not recognized in internal financial capital (e.g., brand value, other intangibles, and non-financial business resources of other kinds). Also includes economic capitals not held by an organization at all, and which instead may belong to its stakeholders, be they internal or external.
- **Human Capital** – The knowledge, skills, capabilities, physical properties, health, experience, values, attitudes, motivation and ethical entitlements or rights of individuals. Includes intellectual capital held at the level of an individual.
- **Intellectual Capital** – Information, knowledge and intellectual property held by individuals and groups, and which is often embedded in other forms of capital.
- **Natural Capital** – Natural resources and ecosystem services that humans and non-humans alike rely on for their well-being.
- **Social & Relationship Capital** – Teams, networks and hierarchies of individuals working together to achieve common goals (e.g., organizations) and their shared knowledge, skills, capabilities, physical properties, health, experience, values, attitudes, motivation, rights, and ethical entitlements. Includes the shared intellectual capital of the group. Groups may be wholly internal to an organization, external to an organization, or inter-organizational, and may or may not be controlled by the organization of interest. They may be physical groups, virtual groups or combinations of both.

### **Carrying Capacity(ies)**

A measure of the degree to which the stocks and flows of a vital capital can satisfy the basic needs of those who rely on them for their well-being; often expressed in terms of the size of the population or level of demand it can support. Limits in the carrying capacities of capitals, be they normative or otherwise, are also referred to as thresholds.

### **Constructed Capital**

See Capitals.

### **Context-Based**

A descriptor that applies to a particular approach to performance accounting (Context-Based Sustainability) and the metrics characteristically used therein to measure,

manage and report the performance of organizations relative to sustainability norms and standards, by which the unique circumstances of individual organizations and the vital capitals upon which they may, or should, be having impact are taken explicitly into account. An approach used to assess and manage the performance of organizations that relies on sustainability as its underlying theory of performance, and which stands in contrast to incrementalist measurement in that regard.

### **Context-Based Metrics**

A class or type of metrics used for measuring the sustainability performance of a human collective or organization that expresses impacts relative to specific thresholds and allocations for human impacts on vital capitals, conformance to which must be maintained in order for human activity to be sustainable.

### **Duties and Obligations**

Societal or cultural norms under which organizations, groups or individuals are ethically bound, required, or expected to behave in certain ways, and which if not adhered to may put the well-being of others at risk. Usually pertains to impacts on vital capitals, not including supererogatory impacts (i.e., impacts that are purely discretionary, such as philanthropy, charitable giving, or other voluntary and benevolent acts, and which go above and beyond the call of duty). Duties and obligations equate to sustainability norms: to act in accordance with sustainability norms is sustainable; to violate them is not. Parties to whom such duties and obligations are owed by an organization are its stakeholders.

### **Economic Bottom Line**

A measure of the economic sustainability performance of an organization.

### **Economic Capital**

See Capitals.

### **Environmental Bottom Line**

A measure of the environmental sustainability performance of an organization.

### **Human Capital**

See Capitals.

## **Impact**

A direct effect an organization, its suppliers, or its products have on the quality or sufficiency of a capital, and on the well-being, therefore, of stakeholders who depend on them. An impact can be actual (i.e., already occurring in the past or present), obligatory (i.e., a normative impact, independent of whether it has already occurred or not), or both.

## **Incrementalist Measurement**

A performance measurement and reporting approach that assesses impacts on vital capitals in purely incremental or marginal terms, usually from one period of time to another (e.g., on a year-over-year basis) – the antithesis of [Context-Based Sustainability](#), not sustainability measurement or accounting at all.

## **Intellectual Capital**

See [Capitals](#).

## **Materiality Determinations**

Processes by which the relevance, accountability and standards of performance are ascertained for impacts organizations may (or should) be having on vital capitals, which such capitals are of importance to the well-being of specific stakeholder groups; the results of which then determine the proper scope of the target setting, measurement, assessment, reporting, and analytical/decision support activities of a sustainability or TBL accounting function.

## **Natural Capital**

See [Capitals](#).

## **Normative Impacts**

Direct effects of organizations on vital capitals that should, must or shall be occurring, whether they are actually occurring or not. As such, normative impacts are obligatory standards of performance – mainly moral or ethical – for impacts on vital capitals that must be adhered to, and against which actual impacts can be compared, in order to assess the TBL performance of an organization. Normative impacts are prescriptive and are in that sense equivalent to sustainability norms. As such, they are determined by duties and obligations owed to stakeholders.

## **Social & Relationship Capital**

See Capitals.

## **Social Bottom Line**

A measure of the social sustainability performance of an organization.

## **Stakeholder**

Anyone to whom a duty or obligation is owed to manage one's impacts on vital capitals in ways that can, or should, affect their well-being (e.g., while it is true that the well-being of both employees and their dependents are affected by the wages paid by an employer, only employees, and not their dependents, are stakeholders of an organization, insofar as its provision of employee compensation is concerned – a type of external economic capital).

## **Sustainability (and Sustainable)**

*Sustainability* (a noun): The subject of a social science or branch of management that seeks to understand and/or manage the impacts of human activities on the quality and sufficiency of vital capitals in the world, especially as required by stakeholders in the case of organizations. *Sustainable* (an adjective): An attribute of human activities which have the effect of maintaining the quality and sufficiency of vital capitals at levels required to ensure human or non-human well-being, particularly stakeholders in the case of organizations.

## **Sustainability Norm(s)**

A standard of performance for what an organization's social, economic, or environmental impacts on vital capital(s) should, or would have to, be in order to be sustainable, whether it is actually occurring or not. Sustainability norms are prescriptive and are in that sense equivalent to normative impacts.

## **Sustainability Performance**

A measure of the degree to which a human collective's (e.g., an organization's) impacts on vital capitals conform to entity-specific (e.g., organization-specific) duties and obligations for what such impacts must, or would have to, be in order to be sustainable.

## **TBL Performance**

A measure or expression of the sustainability performance of an organization expressed in terms of its social, economic and environmental sustainability, including in a blended or integrated form.

## **Theory of Performance**

A principle or construct in accounting by which the performance of an organization is interpreted (e.g., profitability in financial accounting; efficiency in operations management), and which can also be used as a basis for integrating what may otherwise appear to be incommensurable measures or scores obtained from the use of ostensibly different metrics for different areas of impact (e.g., different metrics used for assessing the social, economic and environmental impacts of organizations and their correspondingly different units of measurement). Sustainability is the core theory of performance in TBL accounting, according to which the impacts of an organization on any form of capital, including economic capital for the benefit of shareholders, is held to a *sufficient-for-the-sake-of-stakeholder-well-being* standard of performance. Scores for impacts on all capitals, no matter what they are, can thereby be plotted, tallied, integrated, and reported on a common scale – a TBL performance scale grounded in a sustainability theory of performance.

## **Thresholds**

Actual or normative measures of vital capitals that humans and/or non-humans rely on for their well-being – corresponds to the carrying capacities of stocks and/or flows of vital capitals, as appropriate, whether they already exist or not.

## **Triple Bottom Line (TBL)**

An organizing principle (and term) coined by John Elkington in 1994, which refers to the measurement, management and reporting of an organization's sustainability performance in terms of a social bottom line, an economic bottom line, and an environmental bottom line. According to TBL theory, the performance of an organization is best assessed in terms of all three bottom lines together and not just one of them (i.e., the economic one).

## **Vital Capitals**

Capitals that are essential to the achievement and maintenance of stakeholder well-being, the identification of which is an outcome of performing materiality determinations.

See Capitals for specific types.