Statistics Netherlands

THE SUSTAINABILITY CONSORTIUM

Global Reporting Initiative™

Report

Reporting on sustainable development at national, company and product levels:

The potential for alignment of measurement systems in a post-2015 world

September 9th 2014

Rutger Hoekstra and Jan Pieter Smits
(Statistics Netherlands)

Koen Boone, Walter van Everdingen and Fungayi Mawire
(LEI-Wageningen UR and The Sustainability Consortium)

Bastian Buck, Anne Beutling and Katja Kriege
(Global Reporting Initiative)

Statistics Netherlands
Henri Faasdreef 312
2492 JP The Hague
The Netherlands
www.cbs.nl

Global Reporting Initiative
Barbara Strozzilaan 336
1083 HN Amsterdam
The Netherlands
www.globalreporting.org

The Sustainability Consortium
Alexanderveld 5
2585 DB The Hague
The Netherlands
www.sustainabilityconsortium.org

Date September 9th 2014

Corresponding author: Rutger Hoekstra (r.hoekstra@cbs.nl)
 We are grateful for comments and suggestions by Matthéüs van de Pol, Frans Vollenbroek, Robbert Thijssen, Henk Massink, Mark Overman, Omer van Renterghem, Stefan van der Esch and Nora Steurer. Statistics Netherlands and TSC gratefully acknowledge funding from the Dutch Ministry of the Environment and Infrastructure.

Contents

Executive summary

The concept of sustainable development (SD) is becoming more and more engrained in today's society. There is a growing feeling that companies and governments should not only report on their economic performance but also on the impacts on society and the environment. As a result, many developed countries and a large majority of the largest companies are striving towards transparency through sustainability reports. Because of the post2015 agenda, which strives towards the adoption of a global set of Sustainble Development Goals (SDGs), this trend is likely to gain momentum in the coming years.

Over the last 2-3 decades many different reporting systems have been created at the national, company and product levels. Unfortunately, these systems are based on different methdological and conceptual foundations. This leads to confusion a common language and understanding of SD is lacking. This report argues that greater alignment of the reporting systems is possible and needed.

This report compares three dominant systems at the national level (Conference of European Statisticians (CES) Recommendations on Measuring Sustainable Development), company level (Global Reporting Initiative (GRI)) and product level (The Sustainability Consortium (TSC)). These systems have played a role in the alignment of initiatives at their respective levels.

The many similarities, as well as the differences in the three systems are provided and illustrated, in some cases through thematic examples. Furthermore, the systems are compared to the current proposals for SDGs. Based on our findings suggestions are made to further develop the alignment and harmonization of sustainability reporting at the various levels. Inevitably this will be a long term proces, which will require a great deal of cooperation between the many stakeholders involved.

1. Setting the Stage

Sustainable development (SD) is now so engrained in society's vocabulary that it is hard to think that 30 years ago this concept was hardly known (WCED, 1987). Many citizens, companies and governments now subscribe to the idea that we should meet the needs of the current generation, but that this should not be at the expense of future generations. It is clear that, for some domains, especially in the environmental area, our society is not living up to the sustainability benchmark.

To steer our society towards a more sustainable future, it is important that developments are measured and reported on. In SD dicussions, it is often argued that "You cannot manage what you cannot measure". However, the measurement of SD has a long way to go, especially when compared to other fields, such as economic meaurement.

In many western countries, data on the national economy are published for each quarter, within 30-45 days after the quarter, and are used widely in society and for the purpose of modeling. Importantly, the data are comparable across countries because they are governed by an international handbook called the System of National Accounts (SNA). For SD, the situation is not that advanced. Our institutions, communication and policy models are simply not yet sufficiently geared towards a broader societal agenda that fully incorporates environmental and social issues as well as the economic dimension.

Measurement of SD is increasing significantly

Nevertheless, it is important to stress that, over the last decade, meaurement of SD has increased significantly. Figure 1 shows the number of measurement systems that have been adopted at the national level. The figure is taken from the e-Frame Convergence report (Smits et al, 2014) which is a stocktaking report that provides an overview of the measurement systems at the national level. The report also looks at the differences and similarities between the systems in order to assess the potential for convergence (i.e. alignment). The figure shows the 40 years history and also the increasing importance of SDI sets (which provide a suite of indicators rather than a single index) over the last decade.

Figure 2 provides a similar picture for the percentage of companies that have published reports on corporate responsibility (CR) since 1993. This figure is taken from a KPMG survey (KPMG, 2013) and shows that there has been a very large upsurge since the early 1990s. Corporate reporting has evolved from a minority undertaking to a mainstream activity.

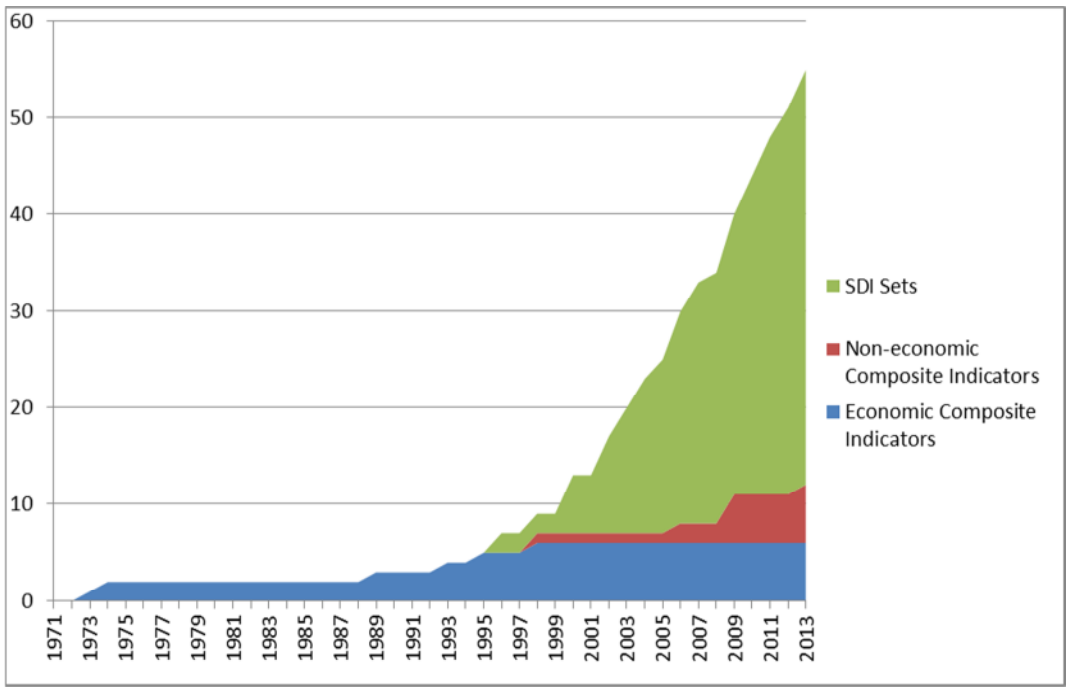

Figure 1. Number of measurement systems for SD at the national level

Economic Composite Indicators measure SD in a single index, by "correcting'' aggregates from the national accounts (examples: GPI, ISEW, SNI, MEW). *Non-economic Composite Indicators* are also single indices which are constructed by using mathematical weighting techniques (example: CIW, HDI).. The philosophy behind the *Sustainable Development Indicator (SDI) Sets* is that SD is considered to be a multidimensional phenomenon which therefore requires a suite of indicators rather than a single number (examples: Eurostat's SDI set and sets for Switzerland, France, Australia, Germany and the Netherlands).

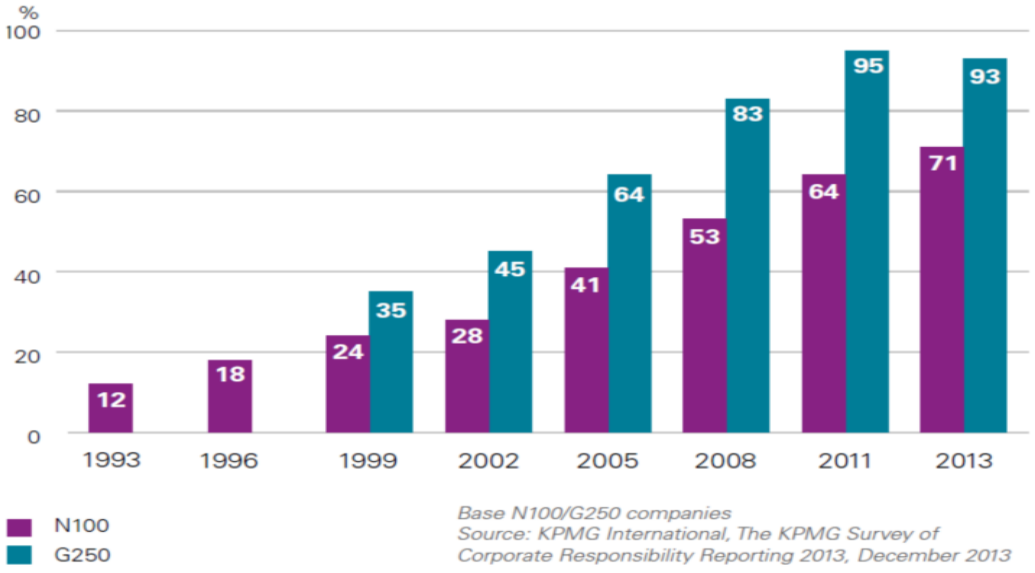

Figure 2. Growth in SD reporting at company level (percentage of companies with a CR report)

N100 stands for the largest 100 companies in a country. *The KPMG Survey of Corporate Responsibility Reporting 2013* covered the 100 largest companies in 41 countries and 15 industry sectors.

G250 stands for the largest 250 companies in the world based on the Fortune Global 500 ranking.

The importance of the corporate sector in this development cannot be overstated. Figure 2 shows that in 1993, only 12% of the N100 companies had a CR report, while in 2013, 71% published one. Amongst the G250, just about all companies (93%) have a CR report (KPMG, 2013). However, the measurement of the corporate aspects has expanded in other dimensions as well. For example, hundreds of initiatives have started to develop product-specific criteria to define sustainable products (organic, fair trade, ecolabel, roundtables). Ecolabel (www.ecolabelindex.com) identifies 455 individual labels.[1]

The post-2015 process

The momentum behind the SD agenda is set to increase with the "Post-2015 Development Agenda". This process, which was started at the Rio+20 conference in 2012, will lead to adoption of Sustainable Development Goals (SDGs) in 2015. The SDGs are still being discussed in ongoing multi-stakeholder groups, of which the two most important are the Open Working Group on SDGs[2] and the Sustainable Development Solutions Network (SDSN)[3]. The goals that are defined in 2015 will mark the first time that the SD aspirations have been translated into concrete targets that will apply globally.

Given the increase in SD measurement over past decade, and the current Post-2015 momentum, it is important to take stock of where we are now and to see what opportunities lie ahead. On the positive side, the developments shown in Figures 1 and 2 are indicative of the wider understanding and enthusiasm for measuring SD at all levels (national, company and products). On the other hand, there is still a lot of differences in the reporting and measurement systems, which leads to confusion about what SD *is* and what is the correct way of measuring it. It is only stretching the truth slightly to say that each actor, whether academia, government, statistical institute or company, has introduced its own interpretation of SD. As a result, SD means different things to different people, leading to a different prioritisation of SD components. This means that the SD community does not have a common language and measurement basis to tackle the problem. Without it, the various stakeholders will be far less effective than they should be.

[1] Products with a sustainability label are the fastest growing food category in the Netherlands (Dutch Ministry of Economic Affairs, 2014).

[2] The Open Working Group (OWG) was established on 22nd of January 2013 by decision 67/555 of the United Nations General Assembly and is tasked with preparing a proposal on the SDGs. It consists of 30 member states, whereby several member states share a seat.

[3] The SDSN is a network launched in August 2012 by the UN Secretary General with the objective to mobilize technical expertise from academia, civil society and the private sector to support sustainable development problem-solving at local, national, and global levels. The SDSN is led by Professor Jeffrey Sachs.

This paper argues that there is a need for greater alignment and harmonization of measurement systems. For the sake of this report we define these terms in the following way:

1. Alignment - organization of systems so that they match or fit well together (and ensure better coordination).
2. Harmonization - the adjustment of differences and inconsistencies among different systems (methods, procedures etc.) to make them uniform or mutually compatible

In this report, an exploration of the alignment and harmonization at national, company and product levels is provided. The institutes and authors of this paper have played a prominent role in the alignment at their own level:

- *National level*. Statistics Netherlands (CBS) has a leading position in the harmonization of the measurement of SD at this level. Rutger Hoekstra and Jan Pieter Smits shared the position of chair/editor of the joint UN-ECE/Eurostat/OECD Task Force on Measuring Sustainable Development (TFSD). The report, titled *Conference of European Statisticians (CES) Recommendations on Measuring Sustainable Development* (UN, 2014a), was endorsed by the CES in June 2013.
- *Company level*. The Global Reporting Inititive (GRI) provides the leading framework for the measurement of sustainability performance and impacts by companies. In 2013, 82% of the G250 companies and 78% of global N100 companies used the GRI guidelines for sustainability reporting.
- *Product level*. There are many initiatives to monitor the impacts of products. Some focus on a single environmental or social aspect while others provide a broader range of indicators. Of the global measurement systems that provide a broad range of impact categories and product categories, the Sustainability Consortium (TSC) is the leading framework. The TSC system has the support of multinationals that have a combined sales of EUR 2,000 billion (Unilever, Walmart, Coca-Cola, BASF), as well as leading NGOs (WWF) and universities (Wageningen UR).

The Ministry of Infrastructure and Environment of the Netherlands has asked these three instutes to prepare a short forward-looking document in which their three systems are compared. More importantly, this paper assesses the long-term prospects for alignment of these systems to measure SD at national, company and product levels.

In Chapter 2, the three systems are introduced and a broad-brush comparison of the measurement frameworks is provided. Chapter 3 discusses the linking strategies followed. Chapter 4 provides the outcomes of a comparison of the indicators and themes of the three measurement systems. In Chapter 5, the three systems are related to the current proposals for Sustainable Development Goals (SDGs). Finally, Chapters 6 and 7 discuss the conclusions and way forward respectively.

2. Reporting on Sustainable Development at National, Company and Product Level

There are literally hundreds of different systems to measure sustainable development. It is beyond the scope of this paper to provide an inventory of all different measurement systems, especially since a number of good overviews have been published over the last couple of years (Kulig et al, 2010; van der Kerk, 2010; United Nations, 2014; Smits *et al*., 2014 or projects like SustainAbility's "Rate the Raters").

Instead, we have chosen to link three measurement systems that play a prominent role in the alignment at their respective measurement levels (national, company and product). The following paragraphs provide a brief summary of history, measurement philosophy and the role in the harmonization process of these three systems.

2.1 National (CES Recommendations on Measuring Sustainable Development)

History
In 2005, the United Nations Economic Council for Europe (UN-ECE), the Statistical Institute of the European Union (Eurostat), and the OECD joined forces to create a process to harmonize the way in which SD is measured at the national level. In the period 2005-2009, the Working Group for Statistics for Sustainable Development (WGSSD) completed its report *Measuring Sustainable Development* (United Nations, 2009). The WGSSD provided a solid basis for the conceptual framework, but also uncovered a number of important points about which there was disagreement.

To resolve these issues a new group, the Task Force for Measuring Sustainable Development (TFSD), was created. Apart from the UN-ECE, Eurostat and OECD, the World Bank, European Commission and ten prominent countries also took part in the deliberations. The final report of the TFSD was endorsed by the Conference of European Statisticians (CES) in June 2013 and was therefore named the *CES Recommendations on Measuring Sustainable Development* (United Nations, 2014).

Measurement framework
The CES recommendations are based on the definition of the Brundtland report but are also consistent with the seminal Stiglitz report (Stiglitz et al, 2009)[4] and the latest academic literature.

[4] The Stiglitz report was heavily influenced by the WGSSD report. The chapter on sustainability in the Stiglitz report is draws heavily on the work of the WGSSD.

The conceptual framework of the CES recommendations splits SD into three dimensions: wellbeing of the current generations ("here and now"), wellbeing of future generations ("later") and the impact on other countries ("elsewhere"). These concepts are consistent to economic theory and measurement frameworks such as the System of National Accounts (SNA) and the Systems of Environmental and Economic Accounts (SEEA).

The CES recommendations also identify 20 SD themes[5] as starting point for a categorization of the SD indicators. Three different indicator sets are suggested, to cater for different purposes. The SDI sets have 90, 60 and 24 indicator sets respectively.

Role in the harmonization process
The recommendations were endorsed by CES in June 2013. The CES has representation from European countries, but as part of the UN regional systems, it also involves countries from outside Europe. The report was therefore endorsed by 50-60 countries.

Of course, implementing the system will take time. Currently, 8 countries are pilot testing it and the OECD has used it in their *How's Life?* publication (to analyze the sustainability dimension). In the Post-2015 process, the Group of Friends of the Chair on broader measures of progress (FOC) that is assisting the United Nations Statistical Division in the SDG process has also stressed the importance of this work.

2.2 Company (Global Reporting Initiative)

History
The Global Reporting Initiative (GRI) was founded in Boston in 1997. Its roots lie in the US non-profit organizations the Coalition for Environmentally Responsible Economies (CERES) and the Tellus Institute. The first version of GRI's Guidelines for Sustainability Reporting was launched in 2000. The following year, on the advice of the Steering Committee, CERES separated GRI as an independent institution.

In 2002, GRI was formally inaugurated as a collaborating organization of the UN Environmental Program (UNEP) in the presence of then UN Secretary General Kofi Annan, and relocated to Amsterdam as an independent non-profit organization. Following iterations of the Sustainability Reporting Guidelines in

[5] TH1: Subjective wellbeing. TH2: Consumption and income. TH3: Nutrition. TH4: Health. TH5: Labour. TH6: Education. TH7: Housing. TH8: Leisure. TH9: Physical safety. TH10: Land and ecosystems. TH11: Water. TH12: Air quality. TH13: Climate. TH14: Energy resources. TH15: Mineral resources (excluding coal and peat resources). TH16: Trust. TH17: Institutions. TH18: Physical capital. TH19: Knowledge capital. TH20: Financial capital

2002 and 2006, GRI released the fourth generation of its Guidelines – G4 – in May 2013.

The Guidelines are the core document in GRI's Reporting Framework which is provided as a free public good to make sustainability reporting standard practice (GRI's mission) and ultimately contribute to a sustainable global economy where organizations manage their economic, environmental, social and governance performance and impacts responsibly, and report transparently (GRI's vision).

Measurement framework

GRI produces a comprehensive Sustainability Reporting Framework that is widely used around the world, to enable greater organizational transparency. The Framework, including the Sustainability Reporting Guidelines (the Guidelines), sets out the Principles and Standard Disclosures organizations can use to report their economic, environmental, and social performance and impacts.

GRI is committed to continuously improving and increasing the use of the Guidelines. They assist in the preparation of sustainability reports by organizations, regardless of their size, sector or location. They offer an international reference for all those interested in the disclosure of governance approach and of the environmental, social and economic performance and impacts of organizations. The Guidelines are useful in the preparation of any type of document which requires such disclosure.

The Guidelines are developed through a global, multi-stakeholder process involving representatives from business, labor, civil society, and financial markets, as well as auditors and experts in various fields; and in close dialogue with regulators and governmental agencies in several countries.

The G4 Guidelines launched in 2013 consist of two parts. The first part - *Reporting Principles and Standard Disclosures* - contains Reporting Principles, Standard Disclosures, and the criteria to be applied by an organization to prepare its sustainability report 'in accordance' with the Guidelines. Definitions of key terms are also included. The second part - *Implementation Manual* - contains explanations about how to apply the Reporting Principles, how to prepare the information to be disclosed, and how to interpret the various concepts in the Guidelines. References to other sources, a glossary and general reporting notes are also included.

About 5,000 organizations, including 205 of the largest 250 companies in the world use the GRI Guidelines, and analysts and investors increasingly base their decision-making on corporate information deriving from GRI-based sustainability reports. The financial software, data and media company Bloomberg, for example, has included GRI reporting and external assurance as one of the risk assessment criteria in providing information to investors.

Role in the harmonization process
GRI strives for harmonization in the field of sustainability reporting. The G4 Guidelines are linked to leading reporting frameworks and issue-specific initiatives, such as the Carbon Disclosure Project, the OECD Guidelines for Multinational Enterprises, the UN Global Compact 'Ten Principles', the GHG Protocol developed by the World Resource Institute and the World Business Council for Sustainable Development, the UN Guiding Principles for Business and Human Rights, and ISO 26000.

2.3 Product (The Sustainability Consortium)

History
The Sustainability Consortium (TSC) was founded in 2009 with the aim of developing a global, harmonized, science-based and overarching method to measure sustainability at product level. At that time, many initiatives existed to measure sustainability at product level. They all had limitations regarding categorization (most had just one product category), regional scope (only one country or continent), and the range of the issues (very few environmental or social issues). By comparison, TSC is a global initiative, develops methods for *all* consumer goods, and takes both environmental and social sustainability issues into account.

TSC's methods are developed in close cooperation with its members, who number over 100. They are drawn from companies (mainly multinationals with combined sales of more than EUR 2,000 billion), NGOs, governments and universities. All methods are developed scientifically at university level, but receive intensive input and feedback from other groups throughout their development. The most important application is the use by buyers of companies to assess the sustainability of the products they would like to buy, and using this as a basis for discussion about improvement plans along the whole supply chain. TSC has a software tool – available to members and non-members – which is capable of providing Indicator scores when assessing the products of their suppliers (which may run into the thousands).

Measurement framework
TSC has developed separate sets of Indicators (15-30) for each product category. It starts with an extensive analysis of all the scientific literature available for the particular product category. This results in a scientifically based list of hotspots (the most urgent social and environmental issues in the whole supply chain) and identifies improvement opportunities. The philosophy behind this is that to have real impact, decision-makers (like buyers) have to integrate sustainability in their day-to-day decision making. They will only do this if they have a limited number of Indicators addressing the most pressing issues. The selection of these issues is crucial and needs to be science-based. The main aim

is to differentiate between the products of the suppliers. To make a meaningful differentiation, the large majority (say 80%) of suppliers (large and small, developing countries and developed countries) should be able to answer the indicators.

Role in the harmonization process
TSC uses the feedback from the implementation in practice to further improve their system. The set of Indicators that have been referred to in this study were the ones that were available in March 2014. A revision of the Indicators will take place from May to October 2014. The main aim of this analysis is to make the Indicators more outcome-based and to better align with other product level initiatives, of which the most important is the Product Environmental Footprint (PEF) of the European Commission (EC). The EC is in the middle of a process to develop and pilot LCA (life-cycle assessment) methodologies for all product categories that can be used for communication about the sustainability performance of products to consumers. If this process is successful, the PEF will be the basis for all EC policy making.

2.4 Overall comparison

In this section, the main differences and similarities between the three systems are discussed, without going into great detail. For a detailed comparison, see Chapter 3.

Table 1 provides an overview of the main differences between the three measurement systems. A number of the differences are discussed in Sections 2.4.1-2.4.5. .

Table 1. Comparison of Measurement Systems

	CES	**GRI**	**TSC**
Scale Level	Country	Company	Product
Goal	Monitoring at national level. National policy goals	Company accountability towards the public with regard to activities that impact economy, environment and society.	Supporting supply chains to improve the sustainability of consumer products
Target group	Policy makers and general public	All stakeholders relevant to the company, e.g. customers, employees, investors	All actors in the supply chain
Target use	Monitoring, accountability and target setting	Enhance organizational management (internal) and better inform stakeholders in decision-making, e.g. investments, purchase, regulation (external)	Integrating sustainability into buying decision of retailers and in this way creating incentives to improve sustainability of supply chains
Current users	Endorsed by the UN-ECE, OECD, Eurostat, the Conference of European Statisticians, pilot testing	+/- 5,000 organizations, including 205 of the largest 250 companies in the world.	Retailers and their many thousands of suppliers

	underway in 8 countries		
Specific indicator for specific groups (Materiality)	Some indicators for developing countries are specified	The Materiality Principle allows a selection of indicators tailored to the organization specifics. Additional indicators for 10 specific sectors	Separate set of indicators for hundreds of product categories
Process/ Governance	Experts/Statisticians (Development process has been finalized, pilot testing now underway under the auspices of the UN-ECE)	Experts and stakeholders. Developments follow a strict due process including public comment periods	Experts, scientists and other stakeholders
Boundaries	National boundaries and indicators on impacts abroad.	Minimum: all entities within financial boundaries. Maximum: all entities within the complete life-cycle	Life-cycle of product (complete supply chain including recycling)
Theoretical foundation	"Here and now" vs. "later" vs. "elsewhere". Based on Brundtland and Stiglitz reports as well as other academic and statistical work.	Organizational accountability (including stakeholder engagement) and sustainable development	Life-Cycle Assessment (LCA). Decision-making can be traced back to relevant scientific papers.
Relevance of data availability in indicator selection	The set of 90 and 60 indicators are chosen on theoretically grounds. As a result there are "placeholders" which are not yet available. The set of 24 indicators is based on data availability.	Relevant but, if clearly marked, Guidelines allow for temporary omission of data related to material sustainability	Very relevant. System should differentiate for products of all companies. If a large number can't answer, these products can't be differentiated from each other.
Current data availability	There are a number of placeholders. For the other indicators the data are available for most EU/OECD countries.	Depends on the indicator. Some indicators are hardly reported by any company, while others are reported by many hundreds.	Indicators should be answerable for >80% of companies.
Type of indicators	Outcome-based as well as investment, productivity, intensity and other indicators. Also includes life-cycle indicators that quantify the impacts on other countries	Includes input, process, outcome and impact indicators.	Most input-/process-based of the three[6].
Use of subjective indicators	Life satisfaction	No	No
Status/ Experience	Pilot testing underway	>10 year	Partly used in practice
Public availability	Yes	Yes	For a fee (EUR 300)

[6] In the summer of 2014, TSC introduced a large number of outcome-based indicators. These have not been taken into account in the analysis in this report.

2.4.1 Goals

The goals of the measurement systems have very important consequences regarding the way the frameworks are set up, so it is important to understand the differences.

The CES recommendations provide an indicator system that is capable of informing policy makers and the general public about “how we are doing in terms of SD”. However, the system also includes indicators for policy levers which may be tracked in order to assess whether unsustainable developments may be improved.

GRI promotes the use of sustainability reporting as a way for organizations to become more sustainable and accountable to their stakeholders with a view to making a contribution to sustainable development. GRI’s mission is to make sustainability reporting standard practice. To enable all companies and organizations to report their economic, environmental, social and governance performance and impacts, GRI produces free Sustainability Reporting Guidelines.

The main goal of the TSC indicators is to support the conversation between buyers and suppliers on improvements in the sustainability hotspots of their supply chain. Scores of the suppliers on the key performance indicator (KPI) are benchmarked and best practices are identified which forms input for commonly agreed improvement plans.

2.4.2 Scientific literature, experts and stakeholder input

The conceptual basis of the CES recommendations is academic literature on economic theory, wellbeing, globalization, social capital etc. The distinction between the wellbeing in the “here and now” versus “later” is consistent with current (economic) literature on the measurement of SD (notably the Stiglitz report). Also, the CES framework includes 20 SD themes which are also derived from academic and other literature. Although the CES report went through two global consultations, stakeholder involvement is not as advanced as the GRI/TSC processes.

TSC uses scientific literature to identify the main environmental and social impacts of the products. Subsequently these indicators are also discussed with the relevant companies, NGOs, governments, experts and academia.

GRI uses experts in the process, as well as extensive stakeholder consultations which includes constituencies like business, civil society, labor, academia and public agencies. Through input from these stakeholders, the most relevant topics and aspects have emerged.

2.4.3 Qualitative versus quantitative measures

A difference between the CES system versus the GRI/TSC systems is that the former only has quantitative indicators. The GRI/TSC systems have a more general "reporting" goal. This includes quantitative indicators but, in some cases, qualitative items are also included ("does your company have a decarburization strategy") which require a "yes/no" response or a description. In the case of GRI there are also items that ask for methodological information about how certain quantitative values have been calculated.

There are several reasons for this difference that relate to the differences in goals of the three initiatives. For TSC for instance, the main purpose of the measurement is to have a starting point for discussion about improvement opportunities within the supply chain. Methodologies for calculating quantitative outcome-based indicators, like GHG emission per product, have not yet been standardized and data availability is very limited. Despite these problems, TSC decided in the summer of 2014 to include more outcome-based indicators in order to stimulate companies to start assembling these data. These changes, however, have not been taken into account in this report.

National-level methodologies can be standardized more easily and because the data is assembled by the statistical offices, data availability and consistency can be solved through the normal statistical coordination mechanism.

2.4.4 Materiality

What the three systems have in common is the notion of "materiality", i.e. the idea that all the information that is important for SD ("material") should be included in the measurement system. Indicators that are not very important need not be included. All three systems acknowledge the idea that some indicators are relevant and some are not at a certain level of measurement (country, company or product). However, the way each system arrives at the material aspects differs significantly.

1) The CES recommendations were written by a task force which comprised of developed countries and institutes. As a result, the indicator set is biased towards indicators that are relevant for developed countries. Nevertheless, the report does argue that, for some of these countries, there might be indicators that are relevant and some that are not. For example, a country that does not have any natural resources (oil, gas or minerals) need not measure them. The CES recommendations also writes (UN 2014a, Chapter 9) about the difference between indicators in the developed and developing world. For example, indicators for malnutrition are more relevant to developing countries while obesity is mostly relevant in developed countries.
2) In the GRI framework, it is clear that not all indicators are relevant for all companies. Animal welfare for example is only relevant for industries that work with animals. Some indicators that are material for the beverage industry, may not be material for companies in the financial

service sector. The GRI Guidelines specify that the firm itself identifies the indicators that are material to it. GRI gives instructions how a company should identify its material aspects and should choose its most relevant indicators. For some sectors, GRI has sector supplements with additional indicators.

3) Materiality is very important in the TSC system. Since products may have a wide variety of SD impacts, it is crucial to identify the most important ones. They are identified using analysis of the available scientific literature. The resulting list of indicators per product is then also discussed with stakeholders to make sure that there are no omissions. However, for each addition, a scientific basis is required.

It should be noted that there is a tradeoff between materiality and comparability –,the more differentiation there is in the measurement system, the less comparable things become. At the national level, comparability is very important, while at the product and company level, the differentiation is crucial.

The way the three systems implement this, however, is quite different. GRI gives instructions about how a company should identify its material aspects and should choose its most relevant indicators. For some sectors, GRI has sector supplements with additional indicators. CES assumes that nearly all indicators are relevant for all countries, but does propose a number of alternatives for developing countries. TSC identifies for every product category a short list of relevant indicators.

2.4.5 Measurement boundaries

The measurement boundaries of the various systems are clearly different given their focus: national, company or product. There are, however, further complications when we look at the relationship between the various systems.

It is tempting to think that, for some indicators, the relationship between the CES and GRI systems is fairly straightforward. For example, the sum of emissions of all companies within a country is equal to the national total (disregarding household emissions for the moment). This would be true if all companies only operated within one country. However, the GRI system is used by many multinationals for which the country boundary is not an important feature. The indicators are reported for the entire company (all entities included in the organization's consolidated financial statements or equivalent documents) dependent on where the activities take place and where the impacts occur. Impacts in the value chain outside of the organization can also be captured.

A further complication has to do with supply chain impacts. Some sustainability impacts can occur outside of the reporting organization. If the impact occurs at the direct supplier, the GRI Guidelines sometimes ask companies to also report

such information. The further away from the reporting entity the impact takes place and the less influence the reporting organization has on this organization, the less is asked to be reported. TSC takes the full supply chain into account because all parts of the supply chains are equally relevant for the assessment of the sustainability of a product, even if it is far upstream and the reporting organization has limited influence on these tier 3, 4 or 5 suppliers. The indicators may be less advanced, however, for impacts that are far upstream and for industries where traceability of products is very hard. Sometimes, industry averages have to be included instead of real data. Most of the CES indicators do not use a life-cycle or supply chain perspective, but a couple of indicators do. These are the footprint indicators (for carbon, water etc.). Methodologically, they might be calculated differently to the product footprint because, by using input-output analysis, they include all emissions in the supply chain. However, footprint analysis usually occurs at a higher product level than LCA.

3. Linking Strategies

3.1 Previous work

Alignment between national and company measurement systems has only very recently been explored as an area with greater knowledge gaps. A few earlier studies have only provided partial analyses. First, the statistical offices of the Netherlands and of Italy (CBS and ISTAT) are looking into the issues of Corporate Social Responsibility (CSR), with a focus on the GRI framework[7]. Second, the "Measure What Matters" project is analyzing alignment of measurement systems at corporate, national and international levels in greater detail for specific sustainable development themes to exemplify gaps and overlaps. Their most recent work regards the aspect of "water" (MWM, 2104). Third, The PBL Netherlands Environmental Assessment Agency has recently finalized a report on "Comparing developments in public and private sustainability monitoring and reporting" (Van der Esch en Steurer, 2014) which also pays attention to rating agencies. Finally, the Ministry of Economic Affairs of the Netherlands brought together GRI, TSC and Statistics Netherlands during 2 workshops to start the comparison of their respective measurement systems. These discussions helped greatly in laying the groundwork for this report.

Nevertheless, the methodology to compare indicators from various indicator systems is still experimental and various strategies exist. In this project, we have approached the linking exercise using two distinct strategies which will be discussed below.

3.2 Strategy 1: Central list of SD indicators

This strategy was based on earlier work done by Statistics Netherlands, in which 43 measurement systems[8] (Smits et al, 2014). This database was expanded to accommodate the GRI and TSC systems. The linking methodology is depicted in Figure 1 above. The indicators of the three systems are linked to a central list of SD indicators. Each TSC and GRI indicator is either linked to an existing indicator in the SD list, or a new indicator is added to the list. Since all systems are linked to the central list, the connections between CES, GRI and TSC are created automatically.

The other potential advantage is that the approach allows the three measurement systems to be connected to other indicator sets, such as the 43 measurement systems. For example, the similarities between the GRI Guidelines and the framework in Australia could be compared. As Figure 3

[7] Istat/CMN Italia (2013) (in Italian). The CBS report will be published towards the end of 2014 (Rensman, 2014).

[8] It includes indicator systems from 40 countries (with Australia having two different systems) and the measurement systems of Eurostat and the United Nations.

shows, the central list is also linked to the SDG proposal that is currently being discussed. Chapter 4 will describe the results of this exercise in more detail.

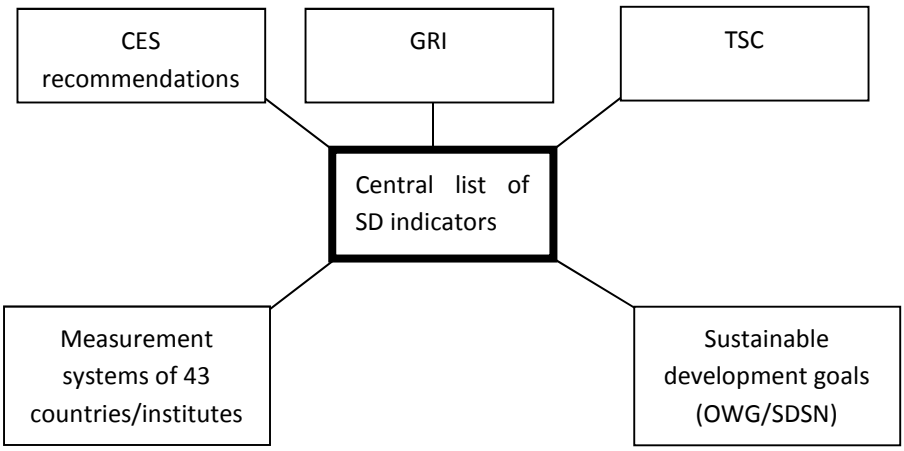

Figure 3. Linking strategy 1

The potential benefits of this approach are huge. The central list allows the 48 indicator systems (CES/GRI/TSC, 43 country/institutes+2 SDG) to be linked and all bilateral relationships to be shown. Nevertheless, there are quite a few practical problems that have emerged in this linking. These are described in Section 3.4 and following.

3.3 Strategy 2: Direct link between GRI and TSC

Because of some of the practical problems with Strategy 1, a more direct comparison of two systems was also attempted. A direct link between the TSC and GRI indicators was intended to make a more direct comparison of these systems, given that they both involve company info.

The indicators were prepared (see section 3.4) and each TSC item was linked to the main GRI aspect. Using this link to the main aspect, it was easier to find detailed GRI codes that might match the TSC codes. Using this information, TSC items were linked to GRI items. In some cases, a TSC item could correspond to two or more detailed GRI items. In these cases, the two most relevant links were used.

Next to the general set of indicators, GRI has sector supplements with additional indicators for a particular sector. We considered the food processing sector supplement of GRI, as food is by far the most important sector of TSC.

3.4 Preparation of indicators

For the CES framework, we used the largest set of 90 indicators. Since these are all quantitative indicators, no additional work was needed to link it to the central list in Strategy 1.

The GRI Guidelines include narrative disclosure items, qualitative and quantitative performance measurement indicators, and Disclosures on Management Approach (DMA). DMA should be answered for all material sustainability issues and asks for "a description why an issue is material for the organization, how the organization manages this issue and how the approach is evaluated".[9] Some GRI disclosure items have several sub-items. To make sure that a unique link can be established (in both strategies), these items were split.

For TSC, we used the list of the indicators for all TSC product categories in March 2014. There is a lot of overlap of indicators between product categories in TSC. The full list of more than 800 indicators was decreased to about 650 by skipping indicators that are completely identical. In the list of 650, a lot of indicators are still very similar. Sometimes the only difference in the wording of the indicator is the reference to a product category.

For GRI and TSC, all items were also labeled as quantitative or qualitative items. Given that CES has only quantitative indicators, only GRI and TSC quantitative indicators could possibly be matched with CES. For Strategy 1, therefore, only the quantitative indicators were linked to the central list.

3.5 Example of linking problems: recycling and re-use

To illustrate the difficulties encountered during the linking exercise, an example is used. Annex I shows all the indicators that are related to recycling and re-use. Only indicators that ask for the recycled amounts are included. TSC for example also has a lot of indicators on communication to consumers about recycling opportunities, indicators about the use of materials that are better recyclable or recycled material that has been used in the production process etc.

The CES framework only has one indicator about the overall recycling rate in an economy (Share of recycled waste in total waste generated)[10]. GRI has standard Disclosures on Management Approach (DMA) and three indicators that are related to recycling and re-use, which ask for details on recycling rates for materials, packaging, products and services, and effluents and waste. The TSC system on the other hand has 18 different questions related to recycling, but some are only asked of a single product category.

The example shows the difficulty of linking at the indicator level. CES and GRI ask somewhat more general indicators at a high level of detail, while TSC asks very detailed questions of the supply chain of individual products.

[9] The G4 Guidelines uses the term 'Indicator' in a narrowly defined way. For the purpose of this document, all mentioned G4 standard disclosures are referred to as 'indicators' in this publication.

[10] Recycling is the processing of used or unused, sorted or unsorted, waste and scrap into secondary raw materials, which can then be used by other sectors as an intermediate good.

Although, this example illustrate the difficulties involved in linking indicators, it does show that the systems are aligned when it comes to the inclusion of recycling as a theme. It also seems as if the indicators at the various levels are related and, if a process of harmonization took place, could be defined in a common measurement system that is applicable at various levels.

3.6 Evaluation of the linking strategies

The example discussed in section 3.5 makes clear that it is quite easy to link at the thematic level (i.e. recycling) but that a comparison of indicators is more difficult. Extrapolating it beyond this example, there seem to be three main linking problems:

1. When is an indicator an indicator? As was noted above, the GRI and TSC systems are more complex than a list of quantitative indicators. There are quantitative as well as qualitative items and sometimes an item can have several sub-items that each point to a separate phenomenon. Furthermore, TSC has question and answer systems, whereby the response options may be both quantitative and qualitative in nature.
2. An item in one system may correspond to several items in another system. In the second linking strategy, the links between the GRI and TSC items were not one-to-one links. We coupled a maximum of two GRI indicators to a TSC indicator. On the other hand, the GRI indicators could, in a lot of cases, also be coupled with several TSC indicators. The reason is, again, that the TSC systems have several response options which each might be linkable to various GRI items.
3. When are two indicators the same? Indicators may be very similar, but when are they exactly the same? As the example (section 3.5) has shown, it is very difficult to gauge when systems use the same indicators. The CES has national indicators, GRI has slightly more detailed company level info, while TSC has a very detailed life-cycle perspective for specific supply chains and products. More research is needed to understand how these various levels 'add up' from the product and company level to the national level. The issue of defining the measurement boundaries very precisely then becomes very important.

Overall, our linking work has taught us that because of the different nature of the CES/GRI/TSC indicators, it is a complex and subjective process to link items. The two linking strategies have shown that it is relatively easy to analyze the commonalities with respect to the themes covered by each system, but that the in-depth linking of indicators is a labor-intensive process. More work is needed to look into the best linking strategies.

4. Comparison of Themes and Indicators

4.1 Overall comparison of CES/GRI/TSC

Based on the linking strategy 1, we can conclude there is a great amount of overlap between the three systems in environmental themes (climate change, air quality, biodiversity, energy use, waste, water use, water quality, material use, land use, recycling, and renewable energy). However, there are also a number of social indicator domains (health, education/training, fair-income/inequality, gender equality, discrimination) that are used on all three systems.

There are also many themes that are only used by two out of the three systems. The CES and GRI systems both include a number of economic categories (income, debt, investments, pensions, labor quantity).

The GRI and TSC systems have in common that they have more indicators on product certification/labeling or CSR reporting, and more detailed labor-related indicators than the CES (labor equality, labor conditions, labor organizations, forced labor, child labor). GRI/TSC both have indicators on human rights and community impacts.

Finally, there are also a number of themes that are unique to each system. The CES framework uses a broader definition of SD which is why it includes categories such as housing, crime, leisure, R&D, official development assistance, and subjective wellbeing. It surprising, however, that CES also has a number of economic categories which could also be measured at company level (R&D, capital stock, productivity, hours worked). GRI has a number unique indicators related to the number of infringements and fines that are imposed on companies. The TSC system has many indicators that are unique to a certain product.

4.2 Detailed comparison of GRI and TSC

As described in section 3.4, the different sub-items of each GRI disclosure formed the basis for comparison. For this research about 600 sub-items were considered. About one fifth are general sub-items that apply to all companies, and about four-fifths are theme-specific sub-items that have to be answered if the particular theme is material for the particular company. Companies engage with stakeholders to decide which subjects are the material ones for them.

TSC has a strict maximum limit of 15 product-specific indicators that address hotspots that have been scientifically proven to be nearly always material in a particular product category. Given that the main purpose of the TSC indicators is the use by non CSR professionals like buyers and sellers that also have to deal with a lot of non-sustainability indicators, the number of sustainability indicators should be as low as possible. Prioritization is needed for both the

number of sustainability themes that have to be taken into account as well as the part of the supply chain that should be addressed. This prioritization has to be done in a scientifically valid way, so as to prevent companies from just 'cherry picking'. Apart from this, it should be done in a harmonized way, so that the product and the companies from the same industry can be compared. For GRI, limiting the number of indicators is of course also important, but given that sustainability reports are used by a broad number of stakeholder groups with potentially different demands, offering a good coverage of all stakeholder perspectives on an issue is equally relevant. The number of Indicators that are really reported on by companies is in most cases much lower than the total list of indicators provided by GRI, because companies can explain why some of these are not relevant for them.

Consequently, there is a difference in the level of specificity of the questions. Although the number of issues that are taken into account by GRI is very broad, and for a particular product category much broader than TSC, issues that are only relevant for a particular product category are not included[11]. So TSC asks for instance for soda for the "impacts associated with using mercury-grade caustic soda during processing". In other cases TSC uses a more specific formulation, but the same issue is covered in a more general indicator by GRI. GRI asks for information about the total water use, whereas TSC asks in addition for information about irrigation during farming practices. The use of the general indicators by GRI has the advantage that these indicators can be used for comparisons between sectors, which is in general less relevant for TSC.

If one compares the different topics covered by GRI and TSC, the following can be found: there is a very limited overlap in TSC with the general GRI sub-items that address general strategy, organizational profile (sales, number of employees etc.), stakeholder engagement, reporting profile, governance and ethics (codes of conduct etc.). As described above, TSC does not include economic indicators like GRI does.

The overlap in both environmental and social issues is very large. Nevertheless, the exact (specificity of) wording is sometimes a bit different. TSC uses several product efficiency indicators that are related to a large number of sustainability issues, like feed used per kg of meat produced or kg grain produced per ha. In most cases these have to be defined in a product category specific way and therefore GRI includes less of these types of indicators. TSC includes more indicators about the end phase of the products lifecycle, like recycling and involving consumers in the responsible use and disposal of the products. TSC also includes indicators on sector specific subjects like animal welfare, food waste, conflict minerals, Volatile Organic Compounds in detergents, and chemicals of concerns in beauty products. GRI offers reporting guidance on

[11] For some sectors GRI has sector supplements. For these sectors, sector and sometimes product specific indicators are included.

sector specific subjects in its Sector Disclosures that are currently available for 10 Sectors.

GRI also offers specific indicators on issues like environmental costs and fines, customer privacy, anti-competitive behavior, corruption and responsible marketing practices. Although most of these issues are part of the impact classification system of TSC, they are hardly part of the top list of priorities. TSC also goes into less detail about employment practices on training/education, retirement, parental leave etc.

As described in 3.3, we tried to link every TSC indicator with a similar indicator of GRI to identify the overlap in indicators between the two sectors. Given the differences in structure of the indicators and other problems described above, this is not a straightforward and sometimes arbitrary process. Depending on how strict the linking of indicators is applied, the number of indicators that can be linked, differs a lot. Therefore, we worked through two different options: one in which the link was only made if the indicators were exactly the same, and one link which was less strict. To give an indication of the sensitivity of the exercise: the number of TSC indicators that could be linked to GRI decreased from around 40% of all TSC indicators to less than 10%, depending on the strictness[12].

4.3 Example: Climate change

As an illustration of potential alignment, we have decided to examine climate change indicators in greater detail, as they are very important at national, company and product levels. They also illustrate very well the potential alignment work that can be achieved moving forward.

Annex II shows the quantitative indicators on climate change from the CES, GRI and TSC systems. Qualitative indicators of GRI and TSC are not taken into account in this comparison.

CES has 5 indicators, including the CO_2-equivalent concentration in the atmosphere, which is of course the ultimate outcome indicator that all other indicators are trying to influence. Also, there is an indicator for the historical emissions to quantify how much each country has contributed to the change in CO_2 concentration.

The table shows that in the area of the GHG emissions the CES framework only has one indicator, while the GRI indicator also breaks down the emissions into

[12] The TSC system of indicators is still under development. In the revision process of summer 2014 it was decided to add more quantitative output based indicators. For example, all indicators on GHG, energy and water will ask for the quantitative amount. This will significantly increase the number of indicators that can be linked with GRI.

Scope 1, 2 and 3 emissions.[13] TSC goes into more detail on particular types of emissions, like methane emissions from beef production or flooding of rice fields.

Both CES and GRI have GHG intensity indicators. There is an indicator unique to GRI which quantifies what effects certain actions have had on the reduction of emissions. Both GRI and TSC cover GHG emissions in the supply chain.

[13] Scopes 1, 2, and 3 of the GHG Protocol align with ISO 14064 definitions.

- Direct (Scope 1) emissions from operations that are owned or controlled by the organization
- Energy Indirect (Scope 2) emissions result from the generation of purchased or acquired electricity, heating, cooling, and steam consumed within the organization

Other Indirect (Scope 3) emissions are all indirect emissions (not included in Scope 2) that occur outside of the organization, including both upstream and downstream emissions

5. Post-2015: Sustainable Development Goals

5.1 Current situation

The Sustainable Development Goals (SDG) are set to start in January 2016. At the Rio+20 conference in 2012, the "post-2015 process" was launched to establish which goals, targets and indicators should be included in the SDGs. The UN Secretary General will publish a report in September 2014, which should lead to the final negotiations. The SDG process is thus ongoing but a number of important initiatives can be identified.

The two most important initiatives that will provide important input to the post-2015 process: the Open Working Group (OWG) on Sustainable Development Goals and the Sustainable Development Solutions Network (SDSN).

The OWG published their latest list of targets and goals on July 19 2014. The OWG identifies 17 goals and 169 targets (UN, 2014b). The OWG does not yet however have a list of indicators.

The SDSN published a proposal for Sustainable Development Goals on May 22 2014 (SDSN, 2014).[14] The system includes 100 core indicators which are the main targets, but also has an additional 109 "tier 2" indicators.

In the following section, a quick scan of these two systems is compared to the CES/GRI/TSC system.

5.2 Overall comparison

If we look at the themes of the OWG and SDSN proposals, there is a large overlap. However, there may be quite substantial differences at indicator level. This has to do with the way the SDGs are developing. It is now clear that they will include many of the Millennium Development Goals (MDG) which were designed to set targets for problems that developing countries face. The SDG process is a political process (rather than conceptually driven) and has identified poverty eradication as the number one issue in SD. The proposals therefore include many indicators such as poverty, sanitation, nutrition and other problems that are widespread in the poorer regions of our globe. These are not the focal areas of the CES/GRI/TSC systems, although the CES framework does include suggestions on these types of indicators in a special chapter at the end of the report (Chapter 9).

Doubts have also been raised about the measurability of many of the indicators included in the SDSN report. Many are given a "to be developed" categorization. For this reason, the UN Statistical Division in New York has

[14] An earlier SDG proposal was published by the SDSN in 2013.

organized various meetings where the OWG and SDSN delegates have met with statisticians to discuss the proposed indicators. However, the OWG has only identified goals and targets so the specific indicators are not yet clear. Also a Friends of the Chair group has been created to assist in the SDG process (from 2013 to 2015).

It should be noted that the SDSN has included an indicator to measure the proliferation of CSR reporting ("Share of companies valued at more than [$1 billion] that publish integrated reporting") although it is rated as an "indicator to be developed". There is also a suggested indicator to measure the proliferation of the SEEA framework ("Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts").

6. Conclusions

6.1 Alignment and harmonization are needed

Why should different measurement systems be aligned? Is it not sufficient that each system caters to its own audience? Although there may also be efficiency gains, the most important reasons for alignment is improved coordination.

The UN member states agreed at the Rio+20 Conference that it is the responsibility of all stakeholders, not just governments, to contribute to a more sustainable world. If these stakeholders are all expected to go in the same direction, a common understanding of the challenges is needed. If the world is to have a sustainable future, companies will have to be important contributors. Enhancing the understanding between the national and company/product level is therefore of vital importance.

6.2 It is a long-term process that needs institutional sponsors

Alignment is not something that happens overnight. There are many stakeholders and interests invested in the various initiatives. These type of processes take a lot time, but a lot might be achieved by taking small steps which each contribute to the long-term goal.

An example of a small but necessary step has to do with the various revisions that the systems undergo. GRI, for example, released the G4 guidelines last year. It would be useful that when the guidelines for all three systems are up for review, they include input from the other levels. Where possible, insights from other levels should be taken on board and measurement should be harmonized. TSC is still under development and a revision is pending. New product categories still have to be started but, currently (summer 2014), all finished product categories are being updated. This may provide the first opportunity to incorporate the insights from this project into the new list.

Alignment would be helped if an institute at the global level had a mandate to bring together (and to fund) further work.

6.3 Alignment does not mean identical systems

Alignment is sometimes misunderstood as meaning that there should be exactly the same concepts, themes and indicators at each level. Where possible indicators should be the same at the various levels (harmonization), but there might be perfectly legitimate reasons why some indicators are relevant (material) at one level and not at the other. There should therefore be an understanding that materiality is not only a criteria *within* a given measurement level, but also *between* measurement levels.

Where indicators are aligned, a process of harmonizing the measurement methods would be of great benefit. The measurement at the various levels may be very different, despite the indictor being aligned.

6.4 The current policy momentum should be used

As the UN Sustainable Development Goals (SDGs) negotiations advance from determining macro goal topics to focusing on their associated targets and indicators, it will be necessary, from 2016 onwards, for all actors, alongside governments, to regularly measure and monitor the respective contribution they make to these goals – be it positive or negative. No matter how the final outcome of the processes leading to a new development agenda will look in detail, it is expected that the SDGs will embrace the concept of sustainability and apply to both developed and developing countries. Although they will not be legally binding, the SDGs may also include targets that directly address businesses (job creation, sustainability reporting etc.) and other stakeholder groups. The new agenda will guide national and international jurisdictions, shape investment policies, revise national and international data collection, and drive actions on a range of sustainability issues over the next decade. The SDG process consequently provides enormous policy momentum to discuss and ensure the measurement of SD will in future happen in a more aligned form on the public (governmental) and private (business) side.

Apart from this global agenda, there are also other policy initiatives that may prove to be important. For example, the EU has started a process of setting guidelines for Product Environmental Footprints (PEF) and Organization Environmental Footprint (OEF). These are useful initiatives that might help the long-term alignment of systems.

6.5 The full network needs to be utilized

Figure 4 shows that behind each of the initiatives lies a large network of partners. Alignment will only come about if these networks work together. For example, the Measure What Matters (MWM) project is a global initiative of which GRI is part and will ensure linkage to the present project with CBS and TSC. Since summer 2013, MWM has aimed to link local problems with global solutions through raising awareness of the need for greater alignment between corporate, national and global sustainability data frameworks. To this end, MWM is convening expert group meetings, stakeholder dialogues, and online consolation via its website (www.measurewhatmatters.info). While MWM is also using the SDG process to energize the national beyond-GDP agendas, and an emerging framework for business sustainability performance, the project consortium is positioning for the longer term as 'facilitators of alignment' between different communities (international, national and corporate).

6.6 Use existing measurement standards

Many measurement guidelines have already been developed. This means that, for certain measurement domains, there is already agreement on its measurement. The CES/GRI and TSC systems also make use of these harmonized systems where possible. For example, the System of Environmental and Economic Accounts (SEEA) is the standard in the field of measuring the environment. It is very important that alignment take on board these type of handbooks, and perhaps also see how these guidelines translate to company level and product level implications. GRI has also linked to a variety of guidelines for companies published by the OECD, UN Global Compact, World Resource Institute and the World Business Council for Sustainable Development.

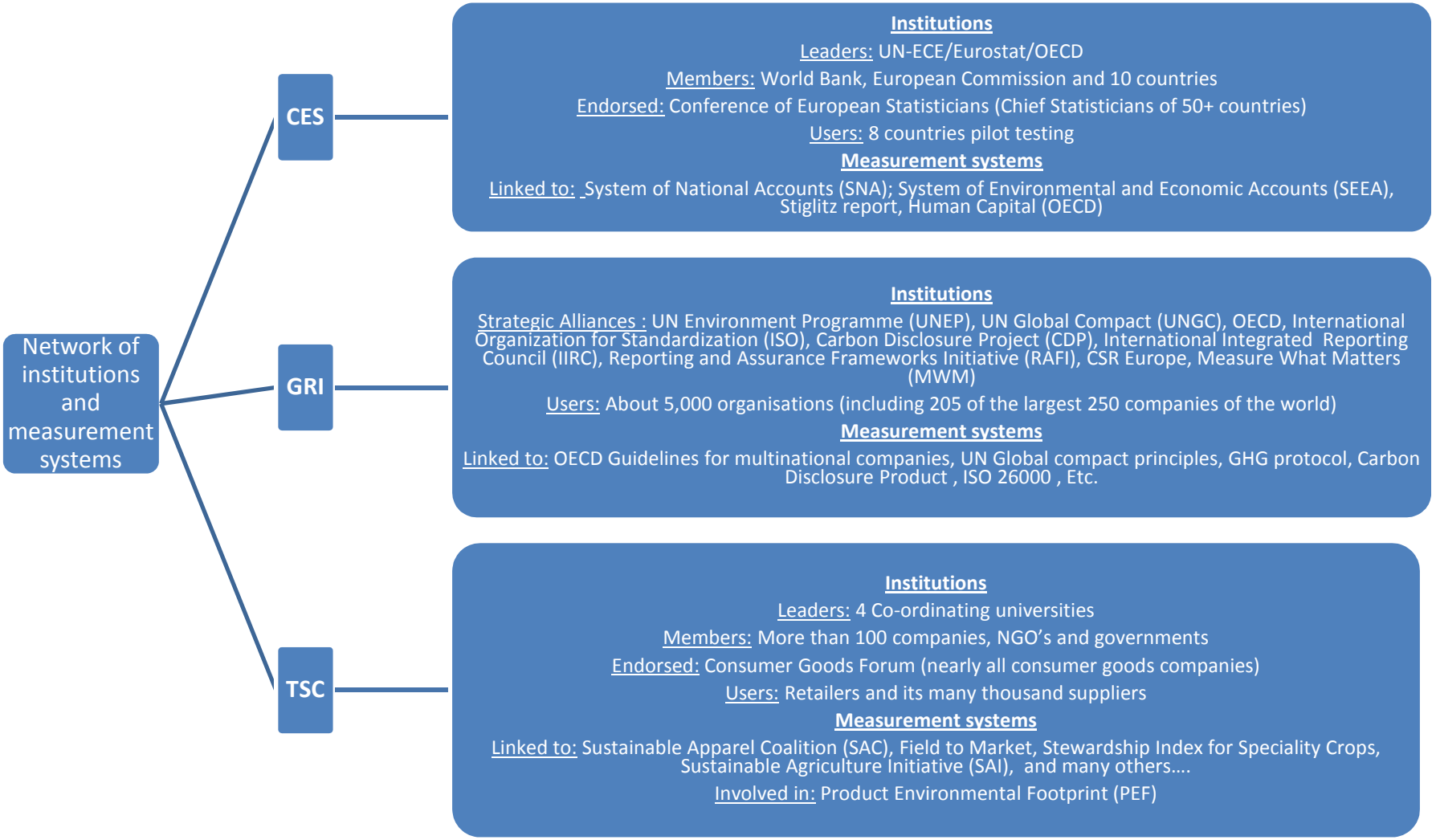

Figure 4. The CES/GRI/TSC network of institutions and measurement frameworks

7. Future Steps Towards Alignment

Alignment can be seen as an evolutionary process in which many small steps may result in big changes. The greatest opportunities occur during periods of revisions of the systems. This project has led to number of insights which may be of use in future revisions:

1. *Make alignment a part of the revision process.* In future updates of the systems, insights that are obtained from this and other projects on alignment of themes and harmonization of indicators should be taken on board during the revision process. However, the dynamic nature of the debate at the various levels might mean that this consideration is not given the highest priority.
2. *Engage in the policy processes.* The importance of the alignment needs to be argued in the various policy processes taking place, particularly the post-2015 process. This enhances the chance that this topic will be adopted by global institution, thereby gaining the momentum that is required. The efforts should, however, not only be restricted to UN processes, but also picked up by other actors, such as the European Commission and the OECD.
3. *Define indicators very precisely at every level.* For the GRI and TSC systems, it might be useful to be very precise about whether the items are quantitative, qualitative or administrative. It would also be good to split quantitative items that measure a variety of phenomena. Work should also continue on defining very precisely how the indicators should be measured. For successors of the CES system, it would be useful to see whether the qualitative reporting items also have a role to play at the national level. For example, a national sustainability report might include information about whether international environmental and social agreement have been ratified by governments and how they aim to achieve them.
4. *Work on detailed alignment and harmonization of environmental and economic themes.* The overlap in the environmental themes is greatest and would therefore be a good starting point for deeper alignment and harmonization of indicators. The advantage is that a lot of work has been done to create harmonized measurement frameworks. An example would be to how the System of Environmental and Economic Accounts (SEEA) may be further aligned with the Product Environmental Footprint (PEF) and the Organisational Environmental Footprint (OEF). It seems as if the themes of climate change, energy and water would be good starting points for in-depth analyses. Although there was less overlap on the economic indicators, this area is also well covered by measurement guidelines which make it a useful area for alignment.
5. *Intensify work on the social and governance themes.* The overlap in social indicators is not as large, partly because the measurement is most difficult here. Nevertheless, these are areas that are of vital importance for sustainable development, and work should be

intensified to measure and align these indicators as much as possible. There are also international measurement frameworks, especially in the field of labor (ILO) which may prove to be helpful.

6. *Linking of all indicators.* In this report we have pursued two linking strategies in which we had to create links between hundreds of items from the three systems. This was a labor-intensive process, yet the link can only be considered experimental at this stage. To do this in a robust way, more work is necessary that builds on the experiences in this project. The question is also whether it is not more useful to go into great detail with a couple of specific themes or whether a linking of the entire systems is more fruitful. For the moment, the former seems promising.
7. *Investigate ways of cooperating in terms of data.* To generate the reporting at various levels, data needs to be collected. In some cases, the data collected at one level might already be collected at another level. For example, in industry surveys, the data collection may be compulsory already. A specific example is the compulsory collection of SD data for farms in the EU. It would be very useful to investigate ways in which data collection at the various levels might be linked. However, confidentiality restrictions of the national statistical offices will limit what is possible in this respect. Also the problems of measurement boundaries of multinationals and the footprint methodologies (see Section 2.4.5) would need to be tackled.

This project has shown that the alignment and harmonization of reporting systems at the national, company and product levels is valuable because it will improve coordinated action between governments and the corporate sector need when it comes to SD. However, these are long-term processes that can only be achieved by taking many small steps towards a long-term goal.

The CES/GRI and TSC measurement frameworks have been linked and compared, and show that there is a large commonality in themes (especially environmental). However, at the indicator level a lot of future work is required for further alignment. Comparison of measurement methodologies in the fields of climate change, energy and water seem like the most fruitful places to start.

References

Dutch Ministry of Economic Affairs, 2014. *Monitor Duurzaam Voedsel*. http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2014/06/04/monitor-duurzaam-voedsel-2013.html

Van der Esch, S. and N. Steurer, 2014. *Comparing developments in public and private sustainability monitoring and reporting*. Scoping paper at the request of the Netherlands Ministry of Foreign Affairs, PBL report.

Istat/CMN Italia, 2013. *Oltre il dato finanziario: imprese e benessere collettivo. L'importanza dell'armonizzazione tra bilanci sociali delle grandi imprese e statistiche ufficiali*. Roma: Istat.
http://www.istat.it/it/files/2013/03/completo.pdf

Kerk, G. van der 2010. *Short survey of relevant indexes and sets of indicators concerning development towards sustainability*, Survey for AMSDE (Annual Meeting of Sustainable Development Experts) of the OECD, on behalf of ANPED, 5 February 2010.

Kulig, A., H. Kolfoort and R. Hoekstra, 2010. *The case for the hybrid capital approach for the measurement of the welfare and sustainability*. Ecological Indicators 10 (2010), pp. 118–128.

Measure What Matters, 2014. Discussion Paper *Water: Accounting for shared priorities.*

Rensman, M. 2014. CSR report by Statistics Netherlands. Forthcoming (September 2014).

SDSN, 2014. *Indicators for Sustainable Development Goals.* A report by the Leadership Council of the Sustainable Development Solutions Network, Working draft, 22 May 2014.

Smits, J.P.H., R. Hoekstra and N. Schoenaker, 2014. *The e-Frame Convergence Report: Taking Stock of the Measurement Systems for Sustainable Development and the Opportunities for Harmonisation*.

United Nations, 2014a. *Conference of European Statisticians Recommendations on Measuring Sustainable Development*.

United Nations, 2014b. Outcome Document – *Open Working Group on Sustainable Development Goals*.
http://sustainabledevelopment.un.org/focussdgs.html

www.ecolabelindex.com

Annex I: Example of Linking Problems: Recycling and Re-use

CES	
Theme	**Indicator**
TH15. Mineral resources	69. Recycling rate
GRI	
Aspect	**Indicator/Disclosures on Management Approach**
Materials	G4-EN2: Report the **percentage of recycled input materials** used to manufacture the organization's primary products and services
	DMA: a. Report **why** the Aspect "Materials" is material. Report the **impacts** that make this Aspect material. b. Report **how the organization manages** the Aspect "Materials" or its impacts. c. Report the evaluation of the management **approach**
Products and services	G4-EN27: a. Report the **percentage of reclaimed products and their packaging materials** for each product category. b. Report **how the data** for this Indicator has been **collected**.
	DMA: As above, under "Materials".
Effluents and Waste	G4-EN23: a. Report the **total weight of hazardous and non-hazardous waste**, by the following disposal methods: • Re-use • Recycling • Composting • Recovery, including energy recovery • Incineration (mass burn) • Deep well injection • Landfill • On-site storage

	• Other (to be specified by the organization) b. Report how the **waste disposal method** has been determined: • Disposed of directly by the organization or otherwise directly confirmed • Information provided by the waste disposal contractor • Organizational defaults of the waste disposal contractor	
	DMA: As above, under “Materials”.	
TSC		
Question	**Answer**	**Related Products**
What **percentage of recycled material** by mass is contained in the plastic packaging of your aerosol air fresheners?	A. ___%.	Aerosol Air Fresheners;#79
What percentage of your plastic packaging by mass is recyclable?	A. ___%.	Aerosol Air Fresheners;#79; #Leave-On Skin Products;#10; #Non-Aerosol Air Fresheners;#78
What percentage of the plastic used in your products in this category is post-consumer recycled (PCR) plastic?	A. ___%.	All Plastic Issues;#138; #Waste and End of Life Issues of Plastics;#130; #Plastic Automotive Accessories;#201; #Plastic Baby Products;#197; #Plastic Cookware and Tableware;#210; #Plastic Furniture;#211; #Plastic Lawn and Garden Accessories;#203; #Plastic Luggage

What percentage of your wood-based products supply (e.g., wood, paper, chipboard, cardboard) comes from recycled materials?	A. Not applicable. Our products do not include wood-based materials. B. The following percentage of the wood-based supply in our products come from recycled materials: B1. ___%.	Board Games;#83
What percentage of your fiber supply can be considered the following types of recycled material?	A. We are unable to report at this time or do not use recycled fiber. B. We can report the percentage of fiber supply that can be considered the following types of recycled material: B1. ___% pre-consumer recycled material B2. ___% post-consumer recycle	Fibrous Wood Panels;#120; Stationery Paper;#219; Books and Magazines;#242
What percentage of your paper and wood-fiber packaging is post-consumer recycled content or is sourced in accordance with a certification program?	A. We are not able to determine the percentage of post-consumer recycled or third-party certified paper and wood-fiber packaging at this time. B. The percentage of paper and wood-fiber packaging that is post-consumer recycled content or is sourced in accordance with a certification program is as follows: B1. __% FSC B2. __% PEFC (or PEFC-endorsed certification programs) B3. __% SFI B4. __% is post-consumer recycled content	Fluorescent Lamps;#238; Incandescent Lamps;#237
What percentage of the glass used in your products is post-consumer recycled (PCR) glass?	A. ___%.	Glass Cookware and Tableware;#296; Glass Décor;#295; Glass Products;#252
What percentage of recycled material by mass is contained in the plastic packaging of your leave-on skin care products?	A. ___%.	Leave-On Skin Products;#10
What percentage, by mass, of your plastic packaging for makeup products is recycled material?	A. ___%.	Makeup;#126

What percentage of the plastic used in your products in this category is post-consumer recycled (PCR) plastic?	A. Not applicable. Our products do not contain plastics. B. The following percentage of the plastics used in our products is post-consumer recycled plastic. B1. ___%.	Metal and Plastic Products;#199; Metal and Plastic Arts and Crafts Supplies;#200; Metal and Plastic Camping Equipment;#202; Metal and Plastic Furniture;#205; Metal and Plastic Sporting Goods;#206; Metal and Plastic Storage and Disposal Products;#207
What percentage of recycled material by mass is contained in the plastic packaging of your non-aerosol air fresheners?	A. ___%.	Non-Aerosol Air Fresheners;#78
What percentage of the nylon used in your products is post-consumer recycled (PCR) content?	A. We are unable to determine at this time. B. PCR%: B1. ___%	Nylon Textiles;#224
Are you able to report the percentage of post-consumer recycled (PCR) content in your plastic packaging?	A. We are unable to determine at this time. B. Yes, and the following percentage of post-consumer recycled content of the material used for this product category's packaging is: B1. ___%.	Packaging;#196
Are you able to report the percentage of post-consumer recycled (PCR) content in your wood fiber-based packaging?	A. We are unable to determine at this time. B. Yes, and the following is the percentage of post-consumer recycled content used for this product category's packaging: B1. ___%.	Packaging;#196

Are you able to report the percentage of renewable content in your product category's packaging?	A. We are unable to determine at this time. B. Yes, and the following is the percentage of renewable content used for this product category's packaging is: B1. ___%.	Packaging;#196
What percentage of your plastic packaging contains post-consumer recycled content?	A. ___%.	Plastic Toys;#67
What percentage of your paper and wood-fiber packaging contains post-consumer recycled content or is sourced in accordance with a certification program?	A. We are not able to determine the percentage of wood-based products supplied from certified sources at this time. B. The percentage of paper and wood-fiber packaging that contains post-consumer recycled content or is sourced in accordance with a certification program is as follows: B1. __% of virgin paper and wood fiber that is sourced from FSC. B2. __% of virgin paper and wood fiber that is sourced from PEFC or other PEFC-endorsed certification system. B3. __% of virgin paper and wood fiber that is sourced from CERFLOR. B4. __% of paper and wood fiber that is post-consumer recycled content.	Plastic Toys;#67; Wooden Toys;#216
What percentage of the polyester used in your products is post-consumer recycled (PCR) content?	A. We are unable to determine at this time. B. %PCR: B1. ___%	Polyester Textiles;#222

Annex II: Comparison of the Indicators for Climate Change

CES	
Theme	**Indicator**
TH13. Climate	52. Global CO_2 concentration
TH13. Climate	53. Historical CO_2 emissions
TH13. Climate	54. GHG emissions
TH13. Climate	55. GHG emission intensity
TH13. Climate	56. Carbon footprint (foreign part)
GRI	
Aspect	**Description**
Emissions	**G4-EN15** **DIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 1)** a. Report gross direct (Scope 1) GHG emissions in metric tons of CO_2 equivalent, independent of any GHG trades, such as purchases, sales, or transfers of offsets or allowances. b. Report gases included in the calculation (whether CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3, or all). c. Report biogenic CO_2 emissions in metric tons of CO_2 equivalent separately from the gross direct (Scope 1) GHG emissions. g. Report the chosen consolidation approach for emissions (equity share, financial control, operational control).
	G4-EN16 **ENERGY INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 2)** a. Report gross energy indirect (Scope 2) GHG emissions in metric tons of CO_2 equivalent, independent of any GHG trades, such as purchases, sales, or transfers of offsets or allowances. b. Report gases included in the calculation, if available. f. Report the chosen consolidation approach for emissions (equity share, financial control, operational control).
	G4-EN17 **OTHER INDIRECT GREENHOUSE GAS (GHG) EMISSIONS (SCOPE 3)**

	a. Report gross other indirect (Scope 3) GHG emissions in metric tons of CO_2 equivalent, excluding indirect emissions from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by the organization (these indirect emissions are reported in Indicator G4-EN16). Exclude any GHG trades, such as purchases, sales, or transfers of offsets or allowances. b. Report gases included in the calculation, if available. c. Report biogenic CO_2 emissions in metric tons of CO_2 equivalent separately from the gross other indirect (Scope 3) GHG emissions. d. Report other indirect (Scope 3) emissions categories and activities included in the calculation.
	For G4-15 to G4-17, respectively: ▪ Report the chosen base year, the rationale for choosing the base year, emissions in the base year, and the context for any significant changes in emissions that triggered recalculations of base year emissions. ▪ Report standards, methodologies, and assumptions used. ▪ Report the source of the emission factors used and the global warming potential (GWP) rates used or a reference to the GWP source, if available.
	G4-EN18 **GREENHOUSE GAS (GHG) EMISSIONS INTENSITY** a. Report the GHG emissions intensity ratio. b. Report the organization-specific metric (the ratio denominator) chosen to calculate the ratio. c. Report the types of GHG emissions included in the intensity ratio: direct (Scope 1), energy indirect (Scope 2), other indirect (Scope 3). d. Report gases included in the calculation.
	G4-EN19 **REDUCTION OF GREENHOUSE GAS (GHG) EMISSIONS** a. Report the amount of GHG emissions reductions achieved as a direct result of initiatives to reduce emissions, in metric tons of CO_2 equivalent. b. Report gases included in the calculation (whether CO_2, CH_4, N_2O, HFCs,

	PFCs, SF_6, NF_3, or all). c. Report the chosen base year or baseline and the rationale for choosing it. d. Report standards, methodologies, and assumptions used. e. Report whether the reductions in GHG emissions occurred in direct (Scope 1), energy indirect (Scope 2), other indirect (Scope 3) emissions.	
	G4-EN20 EMISSIONS OF OZONE-DEPLETING SUBSTANCES (ODS) a. Report production, imports, and exports of ODS in metric tons of CFC-11 equivalent. b. Report substances included in the calculation. c. Report standards, methodologies, and assumption	
	DMA: a. Report why the Aspect “Emissions” is material. Report the impacts that make this Aspect material. b. Report how the organization manages the Aspect “Emissions” or its impacts. c. Report the evaluation of the management approach	
TSC		
Question	**Answers**	**Related Product Categories**
What is your organization's approach to addressing enteric methane emissions?	A. Unable to determine at this time. B. Actively participate in an initiative that is addressing this issue. C. Have strategies in place to address this issue through collaboration with our supply chain. D. The following percent of this product’s supply has a program in place to benchmark and demonstrate progress on this issue: D1. ___%.	Beef;#48
What is your organization's approach to addressing enteric methane emissions?	A. Unable to determine at this time. B. Actively participate in an initiative that is addressing this issue. C. Have documented strategies in place to address this issue through collaboration with our supply chain. D. In addition to (C), the following percentage of this product's supply has a program in place that has been third-party reviewed and can demonstrate improvements on this issue: D1. ___%.	Butter;#50; Cheese;#51; Dairy;#135; Livestock;#151; Milk;#52; Yogurt;#53

What percentage of the paper you produce or purchase comes from facilities that track and publicly report greenhouse gas emissions?	A. We are unable to determine at this time. B. The following percentage of pulp comes from facilities that track, publicly report on, and set public goals for this issue: B1. ___%.	Copy Paper;#56; Facial Tissue;#70; Paper Manufacturing;#156; Paper Towels;#71; Toilet Tissue;#57
For integrated facilities, what percentage of the pulp you produce comes from facilities that track and publicly report greenhouse gas emissions?	A. Not applicable. B. The following percentage of pulp produced comes from facilities that track and publicly report GHG emissions: B1. ___%.	Copy Paper;#56; Facial Tissue;#70; Paper Towels;#71; Pulp Manufacturing;#155; Toilet Tissue;#57
For non-integrated facilities, what percentage of the pulp used in this product comes from facilities that track and publicly report greenhouse gas emissions?	A. Not applicable. B. The following percentage of pulp used in our product comes from suppliers that track and publicly report on this issue: B1. ___%.	Copy Paper;#56; Facial Tissue;#70; Paper Towels;#71; Pulp Manufacturing;#155; Toilet Tissue;#57
What percent of the fish you produce or purchase comes from facilities that track and publicly report greenhouse gas (GHG) emissions?	A. ___%.	Farmed Fish;#43
What is your organization's approach to addressing microbial methane emissions from flooding of rice fields?	A. Not applicable B. Unable to determine at this time. C. Actively participate in an external, multi-stakeholder initiative that is addressing this issue. D. Have documented strategies in place to address this issue through collaboration with our supply chain. E. In addition to (D), the following percentage of this product's supply has a program in place that has been third-party reviewed and can demonstrate improvement on this issue: E1. ___%.	On-farm;#153; Packaged Cereals;#42; Grains;#269

What percentage of the pulp used in this product comes from facilities that track, publicly report on, and set public goals for greenhouse gas emissions during pulp production?	A. We are unable to determine at this time. B. We can report the percentage of pulp supply that comes from facilities that track, publicly report on, and set public goals for this issue: B1. ___% of pulp supply that comes from facilities that track this issue. B2. ___% of pulp supply that comes from facilities that track and publicly report on this	Stationery Paper;#219; Books and Magazines;#242; Greeting Cards;#69
What percentage of the paper used in this product comes from facilities that track, publicly report on, and set public goals for greenhouse gas emissions during paper production?	A. We are unable to determine at this time. B. The following percentage of pulp comes from facilities that track, publicly report on, and set public goals for this issue: B1. ___%.	Stationery Paper;#219; Greeting Cards;#69; Books and Magazines;#242
Describe your Scope 3 carbon dioxide (CO_2) emissions related to contracted transportation services for the reporting year.	[value]	Transportation;#137
Describe your Scope 1 carbon dioxide (CO_2) emissions related to transportation for the reporting year.	[value]	Transportation;#137
Describe the change in your Scope 1 carbon dioxide (CO_2) emissions related to transportation.	A. We don't have emissions data, or this is our first year of estimation, or emissions increased. B. Decreased by B1. ___%	Transportation;#137
Describe the change in your Scope 3 carbon dioxide (CO_2) emissions related to contracted transportation services.	A. We don't have emissions data, or this is our first year of estimation, or emissions increased. B. Decreased by B1. ___%	Transportation;#137