

A Critical Review of Environmental Sustainability Reporting in the Consumer Goods Industry: Greenwashing or Good Business?

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Abstract

As U.S. firms have extended their global reach to embrace new sources of suppliers, they have also been faced with increased pressures to demonstrate that they are socially and environmentally responsible by adhering to sustainable supply chain management practices. Many firms have therefore embraced “sustainability reporting” as a means of ensuring all stakeholders that they are paying attention to their social and environmental impacts while also maintaining their economic viability.

Although guidelines for sustainability reporting have been developed by various international organizations, including the World Resources Institute, the World Business Council on Sustainable Development and the United Nations, sustainability reporting and the reporting framework are voluntary endeavors. As a result, the guidelines may not be followed, and incomplete reporting or inconsistent reports may be disseminated.

The objective of this research is to identify common reporting practices as well as discrepancies in environmental reporting of selected U.S.-based consumer goods companies. These global companies are also transporting and distributing products worldwide, giving rise to the second objective of this research which is to summarize environmental reporting practices with respect to transportation and distribution.

This research shows that the companies reviewed for this study under-reported carbon emissions and greenhouse gases, often omitting emissions resulting from transportation and distribution; changed performance metrics between reporting periods; and generally engaged in inconsistent reporting practices. The research also shows that upstream supply chain partners tend to provide more thorough reports regarding environmental impacts than downstream supply chain partners.

Keywords: sustainability, environmental impacts, supply chain, transportation

1. Introduction and Background

As U.S. firms have extended their global reach to embrace new sources of suppliers in order to improve economic performance, they have also been faced with increased pressures to demonstrate that they are socially and environmentally responsible by adhering to sustainable supply chain management practices. With the expansion of supply chains across the globe, interest in supply chain sustainability has been receiving more attention, particularly among industrialized nations. Pressure from public interest groups, non-governmental organizations, stakeholders, and customers has certainly contributed to this renewed interest in sustainability. Companies' reputations, along with their economic performance, have declined when their environmental or employment practices have resulted in damage to the environment or the well-being of their employees. Therefore, it behooves corporations to publicize their achievements not only in terms of their economic successes, but also with regard to positive impacts they make upon society and the environment. These successes are often reported in a company's Corporate Social Responsibility (CSR) report, alternatively identified as a “sustainability report”, “corporate citizenship report”, or “global responsibility report”. Regardless of the title of these reports, they have become more commonplace and frequently appear on company websites, addressing environmental, social, and economic performance.

Although a considerable amount of research has addressed various issues associated with social and environmental performance in supply chains, research regarding the environmental performance of the transportation of goods remains sparse. Transportation represents a key component of the supply chain, and

research increasingly recognizes the impact that transportation can have upon the overall supply chain (Sanchez, 2010). Nevertheless, Golobic, Boerstler and Ellram (2010) state that “Supply chain management has largely overlooked the greenhouse gas impact of transportation decisions.”

Reporting guidelines attempt to capture this oversight, but progress appears slow. The World Resources Institute (WRI) and the World Business Council on Sustainable Development (WBCSD) have created standards for businesses to assist them in the creation of their own greenhouse gas (GHG) inventories (WRI & WBCSD, 2011). This “Corporate Standard” includes a “Scope 3 Standard” that is intended to guide companies in their reporting of emissions associated with supply chain/value chain activities, including transportation and distribution of goods as well as business travel. This standard is also known as the Greenhouse Gas (GHG) Protocol.

Guidelines have also been developed by the Global Reporting Initiative (GRI), a non-profit organization that provides guidance for sustainable reporting through its global network of experts and strategic partners: the Organisation for Economic Cooperation and Development (OECD), the United Nations Environment Programme, the UN Global Compact, and the International Organization for Standardization (ISO). The framework developed by GRI includes guidelines for economic, environmental, and social responsibility reporting, defining categories or “aspects” that should be included in CSR reports. Within the environmental category, transportation is one of these aspects (Global Reporting Initiative. *Sustainability Reporting Guidelines*, 2000–2011).

Companies may choose to adopt the GHG reporting standard, the GRI reporting framework, or another framework that they deem more appropriate for their organization. Corporate Register.com, a global directory of CSR reports, reported that forty percent of the more than 5000 reports filed as of 2011 adopted the Global Reporting Initiative (GRI) framework (*CR Reporting Awards*, 2012). Corporate Register notes that:

A pattern we have also previously identified is that many of the world’s leading reporting countries (the UK, Japan and Germany are three of the four leading CR reporting countries) are precisely those where reporters are most reluctant to adopt the framework. This is such a striking phenomenon that it appears worthy of research.

Clearly, there is a lack of standardization among reporting organizations, in spite of the existence of guidelines. This lack of standardization leads to the question posed by this research: To what extent are CSR reports consistently reporting the impact of value chain activities, specifically those associated with the transportation and distribution of goods throughout the value chain?

1.1 Research Objective

The objective of this research is twofold. The first objective is to identify common practices as well as discrepancies in environmental reporting of selected U.S.-based companies. The second objective is to summarize environmental reporting practices with respect to transportation and distribution. This paper will address commonalities and differences between reporting companies, and also identify “gaps” where environmental impacts are not reported.

In order to achieve this objective, CSR reports were reviewed for selected companies in the consumer goods industry. The methodology for selecting the companies is presented in the next section along with the criteria used to assess company reports.

2. Methodology

2.1 Company Selection

Two sources were used to identify U.S.-based companies that had filed corporate sustainability reports that were also reasonable candidates to critique on the basis of the GRI reporting framework and the Greenhouse Gas Protocol. One source was CorporateRegister.com and the other, import data adapted from the Journal of Commerce (Rodrigue, et al., 2013).

Both sources support the selection of the consumer goods industry not only because they were the second largest group filing corporate sustainability reports in 2011 with Corporate Register, but also because they constitute the top U.S. importers.

The process of selecting the consumer goods industry began by first categorizing the companies that filed reports with Corporate Register in 2011 by SIC and NAICS codes. Beginning with the approximately 562 companies that filed reports with the Corporate Register, the list was reduced to include only companies with readily

available NAICS and SIC codes, resulting in 491 organizations. These included government and educations as well as insurance companies and banks.

Table 1. Type of companies filing CSR reports with corporate register, 2011

Category	Number	Category	Number
Aircraft Manufacturing	6	Industrial	1
Associations	3	Instrument	5
Automobile Manufacturing and Retail	6	Insurance	19
Banking	28	Medical	16
Beverage Production	4	Metal processing	9
Boat Manufacturing	1	Mining	5
Brewery	3	Miscellaneous	1
Chemical Processing	14	Motorcycle Production	1
Cigarette Production	1	Paper	15
Coffee and Tea	2	Pharmaceutical	11
Communication	12	Professional services	26
Computer Manufacturing and Retail	22	Property management	8
Construction	11	Publishing	12
Consumer goods	44	Rubber Manufacturing	3
Education	9	Sewage	1
Electronics Manufacturing and Retail	11	Transportation	18
Energy	80	Travel	3
Entertainment	4	TV/cable	4
Equipment/Machinery Production	14	Vending	2
Food Production and Retail	33	Water Treatment	2
Furniture Production	8	Water and Sewage	1
Glass Production	1	Winery	1
Government	5	Wood	2
Hazardous waste	2		

As shown in Table 1, the organizations were categorized somewhat broader with the aid of SIC codes and categorization by the author, resulting in 33 categories.

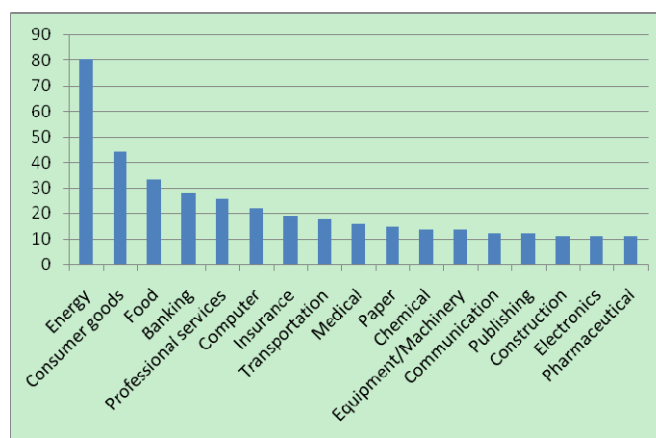


Figure 1. Reports filed by industry

Figure 1 shows the number of reports filed with Corporate Register.com by the top 17 industries listed in Table 1.

After energy, the companies most frequently represented in the Corporate Register were consumer goods. In 2010, the top 5 largest importers into the U.S. in terms of truckload equivalent units (TEUs) as identified by Rodrigue (2013) were consumer goods retailers:

1. Wal-Mart: 696,000 TEUs

2. Target: 455,500 TEUs
3. Home Depot: 296,700 TEUs
4. Lowe's: 221,600 TEUs
5. Sears Holding: 212,800 TEUs

Given the prevalence of the consumer goods industry, both in terms of number of reports filed with Corporate Register, and the volume of U.S. imports, this category was selected for review. It is also worth noting that of the 5 top importers into the U.S., Wal-Mart, Target and Lowe's filed sustainability reports with Corporate Register in 2011.

Table 2. Consumer goods companies filing reports with the corporate register, August 2011

Company Name	Supply Chain Role	NAICS code	SIC code
Hanesbrands Inc	Manufacturing	313312	2389
Mohawk Industries Inc	Manufacturing	314110	2273
Phillips-Van Heusen Corporation	Manufacturing	315223	2321
Nike Inc	Manufacturing	316211	3021
Church & Dwight Co Inc	Manufacturing	325611	2841
Procter & Gamble Inc	Manufacturing	325611	2841
SC Johnson & Son Inc	Manufacturing	325611	2841
Diversey Inc	Manufacturing	325612	2842
Ecolab Inc	Manufacturing	325612	2842
The Clorox Company	Manufacturing	325612	2842
Alberto-Culver Company	Manufacturing	325620	2844
Aveda Corporation	Manufacturing	325620	2844
The Estée Lauder Companies Inc	Manufacturing	325620	2844
Armstrong World Industries Inc	Manufacturing	326199	3089
Cascade Engineering	Manufacturing	326199	3089
Tupperware Brands Corporation	Manufacturing	326199	3089
Conwed Plastics LLC	Manufacturing	326199	3089
Newell Rubbermaid Inc	Manufacturing	326299	3089
Corning Inc	Manufacturing	327213	3357
Whirlpool Corporation	Manufacturing	335228	3639
Hasbro Inc	Manufacturing	339932	3944
OfficeMax Incorporated	Wholesale	424120	5112
Seventh Generation Inc	Wholesale	424130	5113
Cardinal Health Inc	Wholesale	424210	5122
Frontier Natural Products Co-op	Wholesale	424210	5122
McKesson Corporation	Wholesale	424210	5122
Anvil Knitwear Inc	Wholesale	424330	5137
Best Buy Co Inc	Retail	443112	5731
Lowe's Companies Inc	Retail	444110	5211
CVS Caremark Corporation	Retail	446110	5912
Chico's FAS Inc	Retail	448120	5621
Nordstrom Inc	Retail	448140	5651
Tiffany & Co	Retail	448310	5944
Recreational Equipment Inc	Retail	451110	5941
JC Penney Company Inc	Retail	452111	5311
Kohl's Corporation	Retail	452111	5311
Macy's Inc	Retail	452111	5311
Wal-Mart Stores Inc	Retail	452111	5311
Target Corporation	Retail	452990	5331
Staples Inc	Retail	453210	5943
Bed Bath & Beyond Inc	Retail	453220	5947
Office Depot	Retail	453998	5999

The complete list of U.S.-based consumer goods companies that filed reports with Corporate Register are shown in Table 2. Table 2 also includes the role in the supply chain, designated as manufacturing, wholesale, or retail.

Table 3. List of reports reviewed

Company Name	Supply Chain Role	SIC code	Reason for inclusion
Hanesbrands Inc	Manufacturing	2389	Sole SIC code
Mohawk Industries Inc	Manufacturing	2273	Sole SIC code
Phillips-Van Heusen	Manufacturing	2321	Sole SIC code
Nike Inc	Manufacturing	3021	Sole SIC code
Proctor & Gamble Inc	Manufacturing	2841	SIC code “representative” and Wal-Mart supplier
SC Johnson & Son Inc	Manufacturing	2841	Wal-Mart supplier & “model” for Scope 3 emissions
The Clorox Company	Manufacturing	2842	SIC code “representative” and Wal-Mart supplier
The Estée Lauder Company	Manufacturing	2844	SIC code “representative”
Tupperware Corporation	Manufacturing	3089	SIC code “representative”
Corning Inc	Manufacturing	3357	SIC code “representative”
Whirlpool Corporation	Manufacturing	3639	SIC code “representative”
Hasbro Inc	Manufacturing	3944	SIC code “representative”
OfficeMax Incorporated	Wholesale	5112	SIC code “representative”
Seventh Generation Inc	Wholesale	5113	SIC code “representative”
McKesson Corporation	Wholesale	5122	SIC code “representative”
Anvil Knitwear Inc	Wholesale	5137	SIC code “representative”
Best Buy Co Inc	Retail	5731	SIC code “representative”
Lowe's Companies Inc	Retail	5211	SIC code “representative” and top US importer
CVS Caremark Corporation	Retail	5912	SIC code “representative”
Nordstrom Inc	Retail	5651	SIC code “representative”
Recreational Equipment Inc	Retail	5941	SIC code “representative”
Wal-Mart Stores Inc	Retail	5311	SIC code “representative” and top US importer
Target Corporation	Retail	5331	SIC code “representative” and top US importer
Staples Inc	Retail	5943	SIC code “representative”
Sears Holding	Retail		Top US importer
Home Depot	Retail		Top US importer

Of the 42 companies listed in Table 3, several have identical SIC codes. Therefore, “representative” companies were selected for review. The last column of Table 3 indicates the rationale for selecting a particular company. For example, there is only 1 company, Hanesbrands, with the SIC code, 2839. Since there are no others with this particular code, this company is included. However, there are 3 companies with the SIC code 2842. Of the 3, Clorox was selected because of its size and the fact that it is a supplier to the largest importer of goods to the U.S., Wal-Mart. Similarly, there are 3 companies with the SIC code of 2841. Two of these—Proctor and Gamble and SC Johnson were both selected. Proctor and Gamble was selected because of their supplier relationship with Wal-Mart, and SC Johnson was selected because it is used as an example for the Scope 3 Reporting Standard (WRI & WBCSD, 2011). Table 3 also includes Sears and Home Depot, two of the 5 largest importers of goods into the U.S.

In order to identify discrepancies in reporting, the criteria used to assess the reports are based on the reporting guidelines, discussed in the next section.

2.2 Criterion Selection

The criteria used to assess the company reports are based on the GRI guidelines, the GHG protocol, and company reporting practices. Broadly, these include carbon emissions and greenhouse gas emissions. Additionally, the reports are also reviewed for the inclusion of the environmental impacts of transportation and distribution of goods. The criteria for assessing the environmental impact of transportation include EN 29 from the GRI framework, and Scope 1 (direct) and Scope 3 (upstream/downstream transportation) emissions from the GHG Protocol.

The GRI environmental indicator EN29 states that companies should report on “significant environmental impacts of transporting products and other goods and materials used for the organization’s operations, and transporting members of the workforce” (Global Reporting Initiative. *Sustainability Reporting Guidelines*, 2000–2011).

The Reporting Standard for the Greenhouse Gas Protocol specifies that transportation-related emissions be reported in the Scope 1 Direct emissions, which includes company vehicles; and the Scope 3 indirect emissions, which includes upstream and downstream activities associated with transportation and distribution.

Other criteria are based on reporting practices by the companies themselves. For example, some companies reported total carbon emissions as total metric tons (tonnes) or total tons; emissions savings from previous year either in tons (or metric tons) of carbon, or miles eliminated and car-equivalent savings. Companies often combine different categories of emissions, reporting the contribution of carbon sources in percentages rather than absolute carbon output.

The next section provides an overview of reporting practices, identifying similarities and differences between the companies.

3. Results

Of the 26 reports reviewed, 12 adopted the GRI framework, 5 reported greenhouse gases in accordance with the GHG protocol, and 9 used another framework. Some used both.

All companies discussed initiatives associated with the reduction in carbon emissions and greenhouse gases. Some reported only carbon emissions, some only greenhouse gases, and some reported both. Many also reported savings from the previous year, or from a benchmark that may have been several years prior to the current report.

Table 4. Summary of reported carbon and greenhouse gas emissions

Company	Carbon emissions (CO ₂)	Greenhouse Gas Emissions (reported as GHG unless otherwise noted)		
		Direct (Scope 1)	Indirect (Scope 2)	Scope 3 (upstream/ downstream transportation)
Hanesbrands Inc	27,709 tonnes from distribution 10,500 tonnes from transportation	84,138 tonnes CO ₂	324,929 tonnes CO ₂	171,247 tonnes CO ₂
Mohawk Industries	580,314 tonnes total	1,130,000 tonnes	858,850 tonnes	
Phillips-Van Heusen	1820 tons (vehicle miles)			
Nike Inc		<i>Reported emissions savings</i>		
Proctor & Gamble		2,800,00 tonnes	3,000,000 tonnes	
SC Johnson & Son				9% of total for upstream transport and 9% for downstream transport
The Clorox Company	505,000 tonnes total 150,000 tonnes for transportation	75,000 tonnes	283,000 tonnes	148,000 tonnes for distribution
Estée Lauder		32,742 tonnes	63,768 tonnes	44,866 tonnes
Tupperware		15,000 tonnes	17,000 tonnes	
Corning Inc		1,475,000 tonnes - direct and indirect		
Whirlpool Corporation		218,729 tonnes	541,314 tonnes	
Hasbro Inc		19,684 tonnes	7,656 tonnes	
OfficeMax	308,869 tonnes			
Seventh Generation	Reported 10,885 tonnes GHG for product transport; 412 tonnes for employee/business travel.			
McKesson Corp.		<i>Reported carbon savings</i>		
Anvil Knitwear Inc			42,319 tons for Scope 1 and 2	
Best Buy Co Inc		<i>Discussed initiatives and reported emissions savings</i>		
Lowe's		<i>Discussed sustainability policy and energy savings in stores</i>		
CVS Caremark	1,800,500 tonnes			
Nordstrom Inc		<i>Discussed initiatives to reduce emissions</i>		
Recreational Equipment Inc	78,397 tons total 12,307 product transport 6,963 direct fulfillment 6,110 corporate travel 18,443 employee commuting			
Wal-Mart Stores Inc	22,000,000 tonnes			
Target Corporation		<i>Discussed initiatives to improve transportation efficiency</i>		
Staples Inc	516,000 million tonnes			
Sears Holding			4% decrease from previous year	
Home Depot		281,083 tonnes	2,738,927 tonnes	

Table 4 summarizes the findings. The first 12 companies listed are manufacturers; the second 4, wholesalers; and the last 10, retailers. The first column contains the carbon emissions reported and, where appropriate, the

breakdown by category if this information was supplied by a reporting company. The last 3 columns contain reporting information for Greenhouse Gas Emissions for Scope 1, Scope 2, and Scope 3 emissions. Although some companies provided no emissions data their reports did contain discussions regarding goals and initiatives, The summary presented in Table 4 illustrates the varying levels of reporting, which appears to be most thorough for manufacturers. Of the 12 manufacturers, nine reported emissions in at least two of the four categories. Nike's most recent report contained no emissions information, and Philips Van Heusen and SC Johnson reported in only one category. Of the four wholesalers, only one reported no emissions, and the others reported in at least 1 category. Most retailers reported in one category, with Home Depot reporting both Scope 1 and Scope 2 emissions, while Target, Nordstrom, Lowes, and Best Buy reported no emissions.

Table 5. Reporting summary

Supply Chain Position	Number of companies	Number reporting total CO ₂ emissions	Number reporting Scope 1 GHG emissions	Number reporting Scope 2 GHG	Number reporting Scope 3 GHG
Manufacturing	12	2	9	9	3
Wholesale	4	1	2	2	0
Retail	10	4	1	1	0

Table 5 summarizes these results. Although a small sample size, the upstream supply chain partners more frequently report greenhouse gases than the downstream echelons.

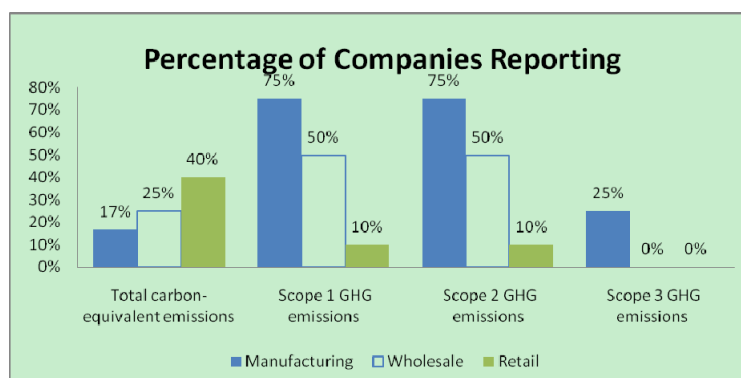


Figure 2. Emissions reporting by supply chain position

Figure 2 shows the percentages of companies reporting in each category. The summaries in Table 5 and Figure 2 show the inconsistent reporting practices of the selected companies. A closer look, however, also reveals some interesting results, reported in the next section.

4. Discussion of Findings

Not only do companies differ in terms of the type of emissions reported—total CO₂, and Scope 1, 2 or 3 GHG emissions, but also in terms of the extent of the information reported. Some companies simply discussed their initiatives, whereas others provided detailed information about where the greatest emissions occurred. For example, Clorox reported emissions of 505,000 tonnes of CO₂ equivalent in 2011, of which 150,000 tonnes were for transportation. Proctor and Gamble did not report total CO₂ emissions. They did, however, report air emissions that included volatile organic compounds, carbon monoxide, nitrates and sulfates of 13,000 tonnes for 2012, not shown in Table 4 because Proctor and Gamble was the only company reporting on these specific types of emissions. As a result, it is not possible to compare Clorox and Proctor and Gamble's environmental performance. Proctor and Gamble reports emissions for air transportation whereas Clorox reports emissions for all operations.

Based on the summary presented in Table 4, it is readily apparent that the reporting of emissions between companies, even companies in the same supply chain role, cannot be compared due to the diverse methods used in measuring those emissions. It is worth noting that the intent of the reports, however, may not be to compare

companies with each other. Nevertheless, if standards are applied consistently among all companies, it seems to be a reasonable expectation. Otherwise, can it really be a standard?

In terms of transportation reporting, only 4 companies—Hanesbrands, Clorox, REI, and Seventh Generation – reported emissions resulting from product transportation and distribution even though six companies explicitly stated that they reported on Aspect EN 29 of the GRI framework. Philips Van Heusen also reported emissions due to vehicle miles, but it is not clear if this is from transportation of goods, business travel, or employee commuting.

Of the 5 largest importers, only Wal-Mart reported carbon equivalent emissions. These importers are all “Big Box” retailers whose goods are produced predominantly in China and transported to the U.S. through the West Coast ports, generating carbon emissions for transportation. According to Corbett (date not provided), transporting one TEU for one mile via water generates carbon emissions of 292.83 grams. Converting each of the imported TEUs into carbon equivalent results in the following emissions for these top 5 importers (Note 1):

Table 6. Carbon emissions for transporting goods across Pacific Ocean

Importer	Carbon equivalent (metric tons) for transportation from Shanghai to Port of Los Angeles	Carbon equivalent emissions reported
Wal-Mart	1,324,763	22,000,000
Target	866,966	Not reported
Home Depot	564,737	GHG reported for Scope 1 and 2 only
Lowe's	421,792	Not reported
Sears Holding	405,042	Not reported

Clearly, there are reporting gaps. Only Wal-Mart uses the GRI framework and indicates that they report on EN29, the environmental aspect of transportation. Target and Home Depot report following the GHG Protocol and Lowe's and Sears do not indicate using any framework. Clearly, transportation impacts of 4 of the 5 top importers are excluded from their sustainability reports.

Not only do inconsistencies exist between different companies, but also between subsequent reports for a given company. For example, SC Johnson will be “shifting our measurement reductions on an absolute basis to reductions indexed to production” (SC Johnson, 2012). Doing so provides higher percentages of savings. On an absolute basis, SC Johnson cut emissions from global factories by 26% since 2000, equivalent to 42% when indexed to production (ibid.). Similarly, Nike also modified their reporting between FY 07-09 and FY 2011. For example, in their earlier *Corporate Responsibility Report*, Nike reported total freight transportation emissions of 355,800 CO₂ emissions (Nike, 2011). In FY 2011, however, Nike states that, “While we have worked with our shipping partners to optimize transportation choices, this effort has not resulted in an absolute reduction in emissions” (Nike, 2012). Further, they report emission reductions on a per-unit basis and indicate that their emissions were far above their targets in FY 11 due to capacity constraints in their factories which required additional air freight.

These two examples help to illustrate the challenges companies face when growth and revenues result in emissions increases. As the “low-hanging” fruit for energy and emission savings is depleted, it becomes increasingly challenging for companies to further reduce their carbon footprints and GHG emissions. Rather than report on the absolute changes in these emissions, companies face more favorable public perceptions by changing the reporting metrics and discussing initiatives. Favorable public perception may also be improved when companies discuss their carbon savings.

Companies that report carbon savings often do so in the context of how many cars are removed from the highways. The most common conversion factor appears to be about 5.2 cars per tonne of carbon. The reported savings, however, may span 1 or more years. Therefore, comparison between companies is not possible. Nevertheless, reporting savings in terms of cars removed from the highways is helpful to the consumer in assessing the reduction, as reporting absolute changes in terms of tonnes of carbon is difficult to visualize. Of the companies reporting savings, Wal-Mart reported the largest, at an equivalent of 7900 cars over a 1-year time period. To put this into perspective, consider that the number of registered cars in California in 2007, the most recent year available, was about 22 million (California Department of Finance, 2009). Using this conservative estimate, the reduction of 7900 cars is equivalent to a reduction of .036% in the number of cars in California, a relatively small amount.

Finally, some company reports appear erroneous. For example, Staples reported total emissions of 516,000 million metric tons compared to Wal-Mart's reported 22 million metric tons. By comparison, Staples' emissions seem extremely high—or other companies are vastly underreporting their emissions.

Given the myriad of reporting gaps, omissions and practice, a reasonable question is, "What constitutes a good report?" It seems reasonable to expect that companies receiving awards for their reports would be the most thorough, at least in terms of adherence to reporting standards. In 2012, Coca Cola received the Best Report Award from the Corporate Register for their European operations. (Corporate Register, 2012) Users of Corporate Register vote on the best reports using the criteria of content, communication, credibility, commitment, and comparability. There were a total of 45 submissions and over 6000 votes were cast. Coca Cola's winning report contained the following elements:

- Carbon savings (absolute) from previous year
- Carbon footprint by country in 2010: Great Britain, France, Luxembourg, Netherlands
- Carbon footprint from 2007 to 2010 by categories, which included manufacturing and third-party distribution
- 2010 emissions by scope (1, 2, or 3) and source (type of greenhouse gas)
- Carbon emissions for the value chain: ingredients, packaging, manufacturing, distribution, selling-cooling and vending.
- Initiatives to reduce transportation emissions, including reported savings over a 1-year period.

Compared to the top 5 importers of U.S. goods, the report by Coca Cola is far more thorough, although it does not address their global operations. They reported specifically on transportation, provided a breakdown of their carbon footprint both geographically and operationally, thoroughly reported on their greenhouse gases, identified carbon savings in absolute terms, and discussed their longer term plans.

Studies have shown that a firm's engagement in CSR and financial performance are positively linked. Jo and Harjoto (2011) show that not only do CSR activities increase a firm's value, but also that if those activities are linked to internal social objectives, the value of the firm is enhanced more than for corporate performance resulting from environmental improvements or community engagement. Scholtens (2008) also showed a link between a firm's value and its demonstrated commitment to social performance, suggesting that financial performance was a precursor to social performance. Although this study addressed environmental reporting, an interesting contrast could emerge if these reports were analyzed for the depth and breadth of their social performance reporting.

Given the voluntary nature of environmental reporting, incentives to disclose information, especially information that demonstrates a lack of progress in reducing carbon and greenhouse gas emissions, appear to be based primarily on public perception. Perhaps it would behoove companies to make separate reports—one for internal use to track true progress, and another to disseminate to stakeholders. However, without incentives to track environmental performance, one wonders why a company would invest in collecting data that may or may not be readily available or easily obtained. For a smaller company, collecting such data may be economically prohibitive. Additionally, if environmental performance is deemed to be lower than what is expected by stakeholders, especially by the critical public eye, then flexible reporting frameworks and measures will better protect the company from publicizing environmental mishaps and blunders.

The quality of a corporate environmental report (CER) may be influenced by several forces, worthy of further investigation.

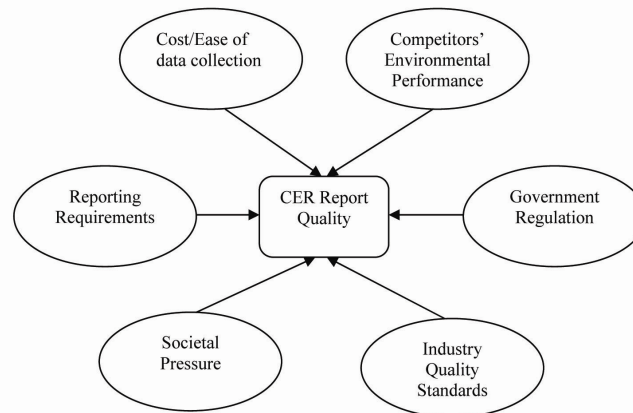


Figure 3. Factors affecting quality of environmental reports

Figure 3 presents these ideas in a conceptual framework. For one, the reporting requirements will affect the quality of the environmental report itself. Companies may choose between existing frameworks or modify a framework to suit their needs. As reported earlier, those countries that lead the world in reporting are also the least likely to use the reporting framework provided by GRI (*CR Reporting Awards*, 2012). Another factor, societal pressure, may also be expressed through the activities of non-governmental organizations, government regulations and industry quality standards. These regulations and standards depend on the power wielded by society, which can be markedly different between industrialized and developing countries. For example, in the U.S., citizens may be more concerned with a company's environmental performance than social performance due to regulatory oversight that affords workers reasonable protection in the U.S. The emphasis may be very different in developing countries, where workers may be exploited and living and/or working in poor and unsafe conditions. Therefore, for multinational companies that are headquartered in industrialized nations, the emphasis on social performance over environmental performance may reflect societal preferences.

Industry quality standards such as ISO 14000 can also affect environmental reporting because compliance requires that processes be documented and measured, contributing to the data-gathering necessary for environmental reporting. The same is also true of government regulatory agencies such as the U.S. Environmental Protection Agency and the California Air Resources Board. The quality of competitors' environmental reports may also impact the overall quality within a particular industrial sector. For example, in spite of technological advances in alternative fuels and cleaner-burning engines, companies have been slow to report on the contribution of these advancements toward reducing environmental impacts, particularly in absolute terms. Almost all reports contain some reference to reduction in energy use through building design, reduced emissions through cleaner fuels and combustion technology, and improved environmental performance as a result of adopting new manufacturing technologies. Finally, the ease and cost of collecting data is also an important consideration. If data is not gathered in order to meet regulatory or industry standards, then the only incentive to collect it would be for internal information or for environmental reporting.

The problem, of course, lies partly within the global nature of environmental reporting. What may work for a company based in the U.S. may not be appropriate for a small company operating in Africa. The same could also be said of companies at different stages of maturity and companies that make different products. Some products could be considered environmentally burdensome—such as resource-based industries, energy and chemical companies—requiring greater oversight and reporting compared to products that may be deemed “sustainable”.

Given all of the factors that affect environmental reporting, one possibility is to rely not on companies to report all of their environmental impacts, but existing government agencies. For example, the U.S. can use trade information to determine the impact of transporting imports and exports through land, sea, and inland ports. Similarly, transportation agencies can report movement of goods by various modes, relieving companies from the burdensome task of identifying all goods movement and environmental impacts. This would address both the problem of omission and double counting. Implementation challenges notwithstanding, this approach may be useful to address the impact of transporting and distributing goods to, from, and within the U.S., an approach that may not be feasible for all countries.

5. Conclusion

In spite of the creation of reporting guidelines for environmental impacts of production activities, there remain inconsistent reporting practices, both between different companies and between annual reports for specific companies. In summary, the following problems seem to be prevalent:

- Incomplete reporting of carbon emissions and greenhouse gases, often omitting emissions resulting from transportation and distribution
- Inconsistent performance metrics—emissions reported as metric tons, tons, emissions per dollars revenue; emissions reported as percent of total with no total reported
- Inconsistent time frames for reported savings, varying from annual savings to savings reported from a base year that extends more than 5 years from the present
- Inconsistent reporting practices between a particular company's annual reports, resulting in ineffective comparisons from year to year
- Inconsistent reporting practices between companies in the same industry, resulting in ineffective comparisons between companies

In spite of these problems, several companies appeared to thoroughly report on their environmental impacts of their operations, including transportation. These included REI, Clorox and Hanesbrands. In general, reporting the impacts of transportation and distribution activities was very marginal.

Sustainability reporting may increase accountability and transparency; however by the same token, the reporting mechanisms can be used to obfuscate declining performance by changing metrics, omitting information, or simply focusing on other aspects of Corporate Social Responsibility. For example, Tupperware's report focused on their global workforce and empowering women, an emphasis that supports their business model of a sales force of primarily women numbering over 2.7 million (Tupperware, 2012). Similarly Nike's report emphasizes sustainable materials, sourcing and manufacturing practices, educating consumers and other stakeholders regarding sustainable consumption, and finally, assisting athletes (Nike, 2012). Nike's report focuses on upstream supply chain activities compared to Tupperware, which focuses on downstream supply chain activities.

Corporate Sustainability Reports do little to help society or stakeholders determine the overall environmental impact of production and consumption activities of a company. Reports are voluntary, the standards unevenly applied, and some poorly understood. For example, one of the problems with transportation reporting is the possibility of "double-counting". This could occur if a manufacturer reports their downstream transportation impacts and their distributor also reports their upstream transportation impacts. The standards—both GRI and the GHG Protocol—do not adequately address this potential problem. It is the opinion of this author, however, that the prevalence of double counting is far less problematic than the prevalence of no reporting at all.

This analysis clearly points toward the limitations of Corporate Social Responsibility Reports in terms of environmental reporting. Perhaps these reports are more akin to "feel-good" public relations releases, linking production activities to environmental performance, measured by indicators that are flexibly applied. Nevertheless, environmental reporting has led to the perception that companies are being more vigilant in terms of their environmental impacts, particularly in terms of product design, material selection, manufacturing practices, and facility operations. To what extent can the public expect corporations to take responsibility for their environmental impacts and to provide thorough complete reports? According to Milton Friedman, the function of business is to increase profits, not to engage in socially responsible activities (Friedman, 1970). Are we, as citizens, giving up our responsibility to be good stewards of the environment by abdicating our responsibility to provide reasonable oversight? Have we, as Robert Reich (2007) suggests, entered into a Faustian bargain? We may blame the corporations for environmental degradation, but we still purchase the goods that they produce. Are Corporate Sustainability Reports simply a mechanism to help us feel better by giving us the illusion that all is well?

If we are indeed to rely on corporate reports to address environmental problems, then we have a long way to go and perhaps the current path—CSR—is unsustainable. The reports are too piecemeal, the participants too few, and the coverage too thin, to provide meaningful insights into the environmental performance of global production and consumption activities. CSR has a role, but in this author's opinion, it is a role that is useful for creating a positive public image, not necessarily a role that demonstrates environmental stewardship.

Is it reasonable to go so far as to suggest that CSR is simply greenwashing? For some companies, absolutely. For others, maybe not. Public pressure requires that companies, especially well-known companies, provide public

reports about their commitment to social and environmental issues. For some, this may simply be a collection of “feel-good” initiatives, a few statistics, and highlights of accomplishments in product and process design, energy saving programs, employee satisfaction, and consumer protection. For others, it may be a true attempt to capture, track, and improve environmental performance. For many, annual reports seem to be loosely linked to previous reports, so long term performance cannot often be evaluated.

CSR Reporting will continue to grow, and the quality of reports will likely be as variable as companys’ financial performance. A voluntary effort, CSR reporting is good business for many, greenwashing for a few, and perhaps a distraction for citizens who really do care about environmental impacts of global production and consumption activities.

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Note

Note 1. For Wal-Mart the carbon equivalent is computed as follows:

$$6500\text{miles} * 696,000\text{TEUs} * \frac{292.83\text{grams}}{\text{TEU} - \text{mile}} * \frac{1\text{tonne}}{1,000,000\text{grams}} = 1,324,763\text{tonnes}$$

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