Revisiting a Corporate Sustainability Framework in an Integrated Reporting Era: A Diversified Resources Firm Perspective

by

Sumit Lodhia

Nigel Martin
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Abstract

In this article, we revisit a foundation sustainability framework and argue that integrated sustainability indicators are needed to enable the integrated reporting process. We develop Corporate Sustainability Indicators (CSI) for a major Australian diversified resources firm and engage with expert stakeholders in determining the indicators’ value and explanatory capacity. Importantly, these types of CSI integrate the firm’s reported economic, social and environmental issues into usable and specific trend markers for business and environmental analysts. The article contends that, despite some limitations, the use of these indicators, along with sustainability reporting will assist in the management of the firm, particularly its impacts on the environment, climate and broader society.

Keywords: corporate, firms, indicators, resources, sustainability, trends.
Introduction

The practice of sustainability reporting has emerged to prominence as a critical component of an organization’s accountability to its stakeholders (GRI, 2011, KPMG, 2011). Sustainability disclosure has moved from brief account of environmental disclosure in annual reports (see for instance, Harte and Owen, 1991, Roberts, 1991) to encompass more sophisticated reporting media such as standalone sustainability reports and corporate websites (Lodhia, 2012). KPMG (2011) states that ninety five percent of the largest two hundred and fifty global corporations (G250) currently engage in sustainability reporting.

Amidst these developments in sustainability reporting, concerns have been raised about the lack of integration of sustainability (or social and environmental) information with financial or economic information (IIRC 2011). Recent debate has led to calls for an integrated reporting model that would combine financial, social and environmental information (ICAA, 2011, IIRC, 2011). Integrated reporting brings together the material information about an organization’s strategy, governance, performance and prospects in a way that reflects the commercial, social and environmental context within which it operates (IIRC, 2011, p.6). The international integrated reporting council has been formed to investigate the possibility of an integrated reporting model (IIRC, 2011), while countries like South Africa have already mandated a requirement for integrated reports by companies listed on their stock exchange (IIRC South Africa, 2011).

The integrated reporting project is currently in infancy but it does offer potential for transforming existing reporting processes. Our paper aims to contribute to the development of integrated reporting by focusing on the integration of economic, social and environmental information through the use of corporate sustainability indicators.
We argue that in addition to sustainability reporting, individual firms and organizations require more focused indicators, much like those used for economic performance analysis, for reporting and managing their sustainable business operations (Gombola and Ketz, 1983; Yeh, 1996; Lewellen, 2004). In a similar vein to financial reporting where accounting ratios are used for analysis and interpretation of financial disclosure, corporate sustainability indicators integrate economic, social and environmental information to provide integrated performance data.

This integration of economic, social and environmental issues into usable indicators and market signals can assist firms and organizations. First, the use of Corporate Sustainability Indicators (CSI) provides a highly visible tool for corporate governance and executive management of resource inputs and environmental capacities (Johnson and Greening, 1999; Figge et al., 2002; Funk, 2003; Labuschagne et al., 2005; Hahn and Scheermesser, 2006). Firm and organizational boards are bombarded with data and information about economic performance, with limited complementary information on corporate sustainability performance (Power, 1991; Kolk, 2003, 2005, 2008). In line with the integrated reporting debate, we would argue that boards and executive management require a range of corporate level measures and trend indicators, in addition to the economic performance ratios, that support sustainable business goals and objectives (Callens and Tyteca, 1999; Jasch, 2000; Figge et al., 2002; Keeble et al., 2003; Moller and Schaltegger, 2005; Kolk, 2008). In the face of globalized industries and regulation, these types of management considerations should enable firms to assess the optimum use of resources in line with the environment’s absorptive capacity (Tyteca, 1999; Dyllick and Hockerts, 2002; Kolk, 2003, 2005, 2008).

Second, the use of CSI and associated trends provide useful viewpoints for the firm and the broader market (Hussey et al., 2001; Veleva and Ellenbecker, 2001; Azapagic,
2004), a major goal of the integrated reporting project. Internal analysts and external observers can look to determine and understand the relationships and emphases between economic, social and environmental performance as changes occur within the firm or across the industry sector. Moreover, firm and organizational stakeholders can observe and track changes and market signals, making informed determinations and decisions based on the shifting operating trends and behavioural patterns of the business (Shields et al., 2002).

In proposing this approach for developing CSI for firms and organizations, there is an acknowledgment that these metrics may not be solely capable of communicating accurate sustainability assessments. Much like the economic performance ratios in use today, any proposed CSI may require supporting information (e.g. key event details, time and space dimensions, decisions bases, management changeover) for knowledgeable analysis, interpretation and understanding (Gombola and Ketz, 1983; Yeh, 1996; Lewellen, 2004). We suggest that this is a limitation of any performance indicators that are configured to convey information about a firm or organization (Moller and Schaltegger, 2005; Porter and Kramer, 2006). Hence, we caution that the definition of CSI is not without its problems or analytical challenges, including the critical temporal issues that surround sustainability (Lozano, 2008). However, when combined with sustainability reporting information, these indicators have potential to provide an enhancing understanding of corporate performance in relation to economic, social and environmental issues.

In this study, we will briefly examine the literature surrounding CSI, and develop some suitable firm level ratios that are consistent with our chosen theoretical framework. Next, the study will engage with a large diversified resources firm and, using its reported sustainability data, develop and analyse some CSI. In addition, key
sustainability stakeholders of the firm are interviewed as part of the exploratory research process in order to determine the value (i.e. ease of use and usefulness) and explanatory capacity (i.e. provide explanations of firm actions and behaviours) of the indicators and trends. This approach is consistent with the calls from Adams and Larrinaga-Gonzalez (2007) and Schaltegger and Burritt (2010) for increasing research that would engage with organizations in their pursuit of improved sustainability accountability and performance. Our concluding statements will discuss and highlight the importance of establishing corporate sustainability indicators for firms and organizations in the current integrated reporting environment, while noting the identified limitations of the approach.

The development of corporate sustainability indicators

In 1997, CSI were starting to take shape and the Global Reporting Initiative (GRI) was developed by the Coalition for Environmentally Responsible Economies (CERES) for sustainability reporting at the organization level (Morhardt et al., 2002). The GRI was endorsed by the United Nations Environmental Programme (UNEP) as a tool that would address the problems of high volumes of requests for sustainability information from firms; inconsistent corporate level reporting; and, establishment of a standard sustainability reporting framework (Willis, 2003; GRI, 2006, 2011). The first part of the GRI provides principles and guidance on the reporting scope including materiality, stakeholder inclusions, organisation context and reporting completeness; combined with qualitative reporting principles such balance, comparability, accuracy, and timeliness. Tests for meeting these reporting principles and protocols are also outlined. The second part of the GRI outlines the standard disclosures in terms of the strategy and profile of the organisation, the management approach to sustainability issues, and the indicators of environmental, social and economic performance. Sectoral supplements also advise
organisations on how to apply the GRI guidelines (e.g. manufacturing, mining). The application of the principles to the standard disclosures determines what issues and indicators are reported. Other corporate sustainability related standards have also emerged including the AA1000 Assurance standard that seeks to determine a reporting entity’s performance in terms of inclusivity (the entity’s participation with stakeholders), materiality (disclosure and understanding of issues that impact informed judgments and decisions), and responsiveness (the response to stakeholder issues that impact sustainability) (AccountAbility, 2008); and, the SA8000 Corporate Social Accountability Management standard for ethical sourcing of goods and services (Social Accountability International, 2008).

Some studies in corporate sustainability performance management have identified important and expansive sets of specific indicators for the production-based and manufacturing industries (Veleva and Ellenbecker, 2001; Labuschagne et al., 2005). However, much like Hussey et al. (2001), we posit that the development of combinative CSI could assist firms with presenting their sustainability performance and future plans. Subsequently, Dyllick and Hockerts (2002) advanced this argument when they created a six criteria framework for corporate sustainability performance. The theory framed three cases (i.e. business or economic, natural or environmental, societal or social) where each sustainability dimension is driven by the two complementary dimensional forces. For example, under the first case, economic sustainability can be driven by the need to minimize negative impacts on the environment (termed as eco-efficiency criteria) and maximize positive social or community impacts (one interpretation of the socio-efficiency criteria). The other two cases follow similar dynamics with environmental sustainability driven by the effectiveness of sustainable business solutions and products (eco-effectiveness) and the optimal resources choices and consumption of our society.
(sufficiency); and, social sustainability shaped by the fair intergenerational use of natural resources (ecological equity) and the effective use of goods and solutions to meet the needs of all levels of society (socio-effectiveness).

However, in addition to constructing their framework, Dyllick and Hockerts (2002) directed more applied research in some specific areas. The relationships between the economic and social dimensions of sustainability need further study. The authors offered that socio-efficiency, and the counter-opposing socio-effectiveness criteria, require practical examination and further research. Also, those environmental drivers of social sustainability (ecological equity) are in need of further refinement. The researchers posited that business and firm relevancy is a key ingredient to good ecological equity criteria. Hence, our study examined CSI development and trends in the context of the Dyllick and Hockerts (2002) six criteria theory and framework.

Our study acknowledges that other research has highlighted the importance of developing practical CSI to assist the overall process of corporate governance and management decision-making (Ranganathan, 1998; Spangenberg, 2002; Azapagic 2003, 2004; Kranjc and Glavič, 2005; Lozano and Huisingh, 2011), including the integration of time dependency variables into the sustainability concept (Reinhardt, 2000; Martin, 2003; Lozano, 2007, 2008). Our applied research work in no way seeks to diminish the importance of these sustainability theories and research programs, has used some of the extant indicators (Azapagic 2003, 2004; Kranjc and Glavič, 2005), and looks to add further understanding and practical measures to the sustainability body of knowledge.

Methods

This investigation used a combination of CSI development using archival data, and a stakeholder analysis based on recorded interviews (Yin, 1994; Denzin and Lincoln,
2005; Kranjc and Glavič, 2005). The method was executed in two stages. In the first stage, a set of CSI for the period 2001-2009 were created using data (e.g. revenue, emissions, waste, pollution, water consumption, and employment creation) drawn from corporate disclosures (i.e. annual and sustainability reports) of BHP Billiton Group (BHP Billiton, 2009a, 2009b). BHP Billiton is a firm headquartered in Melbourne, Australia and primarily listed on the Australian Securities Exchange with nine core businesses aligned to diversified commodities – Petroleum, Aluminium, Base metals, Diamonds and specialty products, Stainless steel materials, Iron ore, Manganese, Metallurgical coal, and Energy coal. As at 30 June 2009, BHP Billiton had a market capitalization of US$144 Billion, net operating cash flow of US$18.9 Billion, and over 100 operations spanning 25 countries across the globe (BHP Billiton, 2009a). The firm was selected as a world class business with a noted stringent approach to corporate sustainability management and reporting dating back several years. Accordingly, we created a range of twenty-six (26) combinative Environmental-Economic (EE), Environmental-Social (ES), and Social-Economic (SE) CSI that were limited to combined issues where aggregate data was kept for the full 2001-2009 period of analysis (See Table 1). The observational and trend line analysis used linear and log-linear functions for fitment of the data points. The indicator analysis was provided to the BHP Billiton Health, Safety, Environment and Community (HSEC) corporate team for review and comments (firm comments appear later in the article).

In the second stage, we followed the work of others who argued that identifying relevant stakeholders and understanding their interests is a critical task when developing meaningful CSI, including the perspectives of Government Organizations (GOs), Non-Government Organizations (NGOs), Suppliers, Shareholders and Customers (Dalal-Clayton and Bass, 2002; Azapagic, 2003, 2004). Also, other studies have used
stakeholder analyses as a proven technique in business and sustainability research (Clarkson, 1995; Donaldson and Preston, 1995; Delmas and Toffel, 2004; Freeman et al., 2004; Perrini and Tencati, 2006). In keeping with our chosen theory, the indicators were framed to build simple inter-dimensional relationships from which trend analysis and stakeholder comments could be combined in order to evaluate indicator utility (note, the study used trend analysis to illustrate the movements in the six corporate sustainability criteria, only reflecting causation where there was an explanation for a change in an individual item, for example a reduction in overall corporate emissions due to steel businesses spin-off). During 2010, these indicators and the associated trends were blind tested with expert stakeholders using partially structured interview techniques (Dalal-Clayton and Bass, 2002; Denzin and Lincoln, 2005). The firm name was stripped from the analysis and presented to five stakeholder representatives (i.e. international NGO, domestic NGO, state GO, professional services supplier, and an equities brokerage firm) for comment. In order to preserve all current and future relationships and dealings with firms and industry groups (including BHP Billiton), the stakeholders requested strict identity suppression (i.e. the use of pseudonyms). Details of the stakeholders are outlined in Table 2.

Table 1 here

Table 2 here

Specifically, we asked the stakeholders to address two issues. First, does the analysis possess sufficient utility? In this respect, we seek to understand whether the analysis is easy to use, and is useful in its application (e.g. decision-making, trend analysis, external reporting). Second, does the analysis provide a satisfactory explanation of the firm’s behaviour to the user? In essence, the analysis should allow the user to
understand the various operating activities of the firm, and the relationships with the sustainability dimensions. Stakeholders were also able to offer any other comments. Stakeholder comments were recorded and transcribed in accordance with best practice qualitative research, and were integrated into the discussion of the results. Respondents were also given the option to provide written comments and feedback to the questions. All responses were managed using a purpose built research and coding database for the study (Corley and Gioia, 2004).

**Discussion of observed CSI trends**

Our specific observations from the first part of the analysis are outlined as follows. First, the accelerated economic performance of the firm (particularly from 2004–2008) coupled with controlled resources consumption, waste production and carbon emissions depicts an inverse trend between some issues in the economic and environmental dimensions (see EE01–EE10, Table 1). The trends suggest that resources firms can create materials and products that are globally competitive in terms of price, while also managing negative environmental impacts and resources consumption. While this is a common operating principle for firms and organizations, it portrays a state of positive eco-efficiency, as defined by Dyllick and Hockerts (2002).

Second, increases in firm employment creation, resources consumption, and environmental impacts suggest flat, slightly upward trends between some social and environmental issues. In this case, the employment, resource usage, waste and carbon emissions data, during the 2003–2009 period (post steel businesses exit in 2001–2002), shows a relatively stable set of relationships (see ES01–ES04, Table 1). The patterns show that the higher rates of firm employment creation and business activity tend to be closely matched with the increased environmental impacts. So while resources consumption and environmental impacts have increased in absolute terms, those
increases are generally in proportion to the expanded workforce and business activity. This depicts the firm as having made attempts to deploy near sufficient (non-wasteful) human and physical resources in performing its business (i.e. the sufficiency criteria) (Dyllick and Hockerts, 2002).

Third, the earlier noted steady improvements in the firm’s economic performance has supported ongoing increases in financial contributions to communities (corporate giving) in absolute terms (i.e. the socio-efficiency criteria) (Dyllick and Hockerts, 2002). The data shows that community contributions are increasing at a higher rate, relative to the ongoing management of the environmental impacts and resource consumption (see ES05–ES08, Table 1). While this trend can give an impression that the financial contributions serve as a source of social offsets or compensation for impacted communities, we acknowledge that this has been proven to be an inaccurate portrayal of relationships between social and environmental issues (particularly where irreversible loss of biological species and fragile ecosystems occurs) (Toman, 1994; Munda, 2005; Simpson et al., 2005; Ayres, 2008). Arguably, this trend is supported by the Dyllick and Hockerts (2002) framework to the extent that it would be ecologically inequitable to continually increase resources consumption or pollution in exchange for larger community contributions in the future.

Fourth, the employment, revenue streams, asset wealth, and longer term economic investments (new projects approvals) created by the firm depict an upward trend (see SE01–SE03, Table 1). In this case, it might be interpreted as the ongoing financial prosperity and position of the firm being leveraged for the creation of positive social outcomes, such as direct employment and contract engagements in communities (i.e. the socio-efficiency criteria) (Dyllick and Hockerts, 2002). In addition, a comparison of firm revenues and fatal injuries showed a strong downward pattern, thereby indicating the firm’s attempts to minimize the negative impacts of expanding business activity (see
SE04, Table 1). This suggests that a combination of supportive economic and social issues can contribute to the overall economic sustainability of the firm.

Fifth, in attempting to compare and contrast financial contributions to communities with economic issues (revenue and approved investments) we observed limited patterns. The dispersion of earned revenues to communities was generally low over the nine year period (typically 0.2%), while a flattened trend between contributions and new investments emerged in the data (see SE05 and SE07, Table 1). This is in direct contrast to our previous observation, that compares economic results, employment creation and fatal injuries, and suggests a more neutral socio-efficiency criteria (Dyllick and Hockerts, 2002). While we acknowledged earlier that corporate giving had increased in absolute terms, it should be noted that prior to 2001, BHP Billiton had established an integrated economic-social sustainability target where its aggregate contribution to communities would be a minimum of 1 per cent of pre-taxation profits, calculated on a three-year rolling average of the current and previous two years’ economic performance (BHP Billiton, 2009b). The firm has met this target over the period 2001-2009.

Finally, the combination of community complaints with revenues and future investments displays an inverse trend. Outwardly, the firm exhibits the capacity to manage community complaints and the complaints process during 2001-2009 (see SE06 and SE08, Table 1). The observed patterns suggest that improving economic performance need not necessarily be associated with negative social outcomes in the form of increased social angst or community disquiet (i.e., the socio-efficiency criteria) (Dyllick and Hockerts, 2002). In addition, it could also be argued that the trends represent the firm’s attempts to assist and communicate with all communities in which they operate, thereby seeking to realize an optimal positive social impact within the scope of their business (i.e. the socio-effectiveness criteria) (Dyllick and Hockerts, 2002).
A graphical depiction of the six observed CSI trends is presented in Figure 1. In relation to the presented corporate sustainability indicators, the firm made two important points as follows (drawn from a telephone interview transcript with Senior BHP Billiton HSEC executive). First, the ‘Licence to Operate’ is fundamental to the firm’s long term plans and ongoing success. A strong sustainability record will allow the firm to bring resources projects in on time and budget, without the regulatory and community problems that could impact performance. The firm is also aware that an increasing number of investors are interested in sustainable resources development, so corporate sustainability trends and patterns will become more important in the future.

Second, given the difficulty of comparing different resource businesses (i.e. iron ore, diamonds, oil/gas), the value of the indicators is the ability to observe and trend sustainability performance on a continuing basis (over time). The firm considers that applying these types of integrated indicators to specific resources, assets or projects would be difficult and uninformative given the differences in resources’ characteristics and operations. The five areas of focus for sustainable developments are well documented, while noting that some issues, such as climate change, will leave the firm exposed to various political and economic agendas (i.e. planned carbon tax, low carbon economy). Anything that helps to look at sustainable developments in a more collective and complete way would be beneficial for firm management.

Figure 1  here

*Sustainability Stakeholders Responses*

The five expert stakeholder responses have been axially collapsed and aggregated as follows. First, the stakeholders’ collective comments suggest that the CSI are easy to
use, but may only be useful in specific applications. As an example, the interviewee from the global services supply firm commented that:

The indicators appear to demonstrate that gross emissions have reduced compared to pre 2000 levels, against a backdrop of significantly increased production over the same period. The organisation can probably claim that this is due to significant internal investment in sustainability initiatives (of course there will be other factors such as divestments and economies from scale). Sustainable investments have not only improved profit, productivity and community outcomes but appear to have increased organisational competitiveness. If the indicators can help build the picture as to where the organisation is along the sustainability chain then I think the sector, and certainly organisations such as FI, would be very excited about these types of indicators.

Hence, the firm argues that the indicators could be used for internal analysis and investment decision-making. In contrast, the local equities and investment brokerage commented that these types of indicators are used by a limited number of clients for making external investment decisions (e.g. to purchase equities in BHP Billiton or not). The local NGO supported this position by pointing to the Responsible Investment Association (Australasia) (RIAA) 2009 Benchmark Report that showed ethical investment funds were capable of outperforming mainstream investment vehicles in the 3 and 5 year categories (RIAA, 2009). Also, in making these investment decisions there may be greater emphasis placed on one particular issue or dimension of sustainability over others (e.g. the perceived importance of employment creation or lower pollution over economic revenue). In essence, the indicators are not universal in their application and will typically be used to meet the specific needs of the user, including the work tasks (e.g. analysis, decision-making, various investments) being undertaken. This suggests that the CSI will need to be created and tailored to each specific application or use case.

Second, the stakeholders exhibited a divergence of views on the explanatory capacity of the indicators. Some viewed the indicators as a step forward in understanding the sustainability actions of the firm. The interviewee from the local NGO responded:
Yes – definitely. I think this is a fantastic improvement on the standard corporate reporting that we normally see. It is often very hard to tell where companies are at with their sustainability journey. That’s why time series data is critical for practitioners in this area. A good example… the amount of carbon dioxide generated per revenue dollar is a useful metric for me, as this can tell us more than the gross figures that may be impacted by acquisitions, divestments and assets sales. The normalized data is very important in this respect. It would also be nice if firms reported along similar lines so that we could make useful comparisons. We are continually frustrated by the lack of useful integrated information and so many in the mainstream investment community just don’t consider sustainability. Of course, this is just an excuse. Good analysts will consider all the data and information when making decisions and offering advice. We know that sustainability has financial materiality impacts on firm performance. Think about it, in the current debate we should be modelling the impacts of a carbon tax on the relationships between carbon dioxide production and revenue. These indicators tell a better story as they give us a guide as to whether a firm has achieved the social license to operate or have just stuffed up the environment by their actions.

This view was tempered with a complementary argument that, while the indicators provide a high-level view of sustainability, there is a still a requirement for more detailed disclosures. The interviewee at the international NGO commented that:

*The indicators are fine if you are looking at corporate level sustainability, where this falls down is if you need more detail. You still need to know how our most vulnerable habitats and ecosystems are being impacted by various types of pollution. If you take climate change as an example, companies will eventually need to invest in clean, less polluting technologies. The fact that we don’t yet have a price on carbon is an issue, but we still need that level of detail that tells us what they are doing in this area.*

This suggests that while the indicators may assist in understanding the sustainable actions of firms, by no means do they provide the complete answer. Indicators can combine sustainability issues and display trends at the corporate level, but more detail enables accuracy of understanding and interpretation. Hence, these types of indicators are limited in terms of being able to communicate specific and detailed sustainability actions, and reinforce the requirement for supporting or supplementary information on firm sustainability.
Conclusions

In this article, we have explored and developed a small selection of CSI that might be applied to firms and organizations operating in the resources industries. We acknowledge this limitation and argue that should additional data be collected, there is no doubt that this list of indicators could be substantially expanded. Hence, we would commend more studies and practitioner activities that involve other firms in various industries and operational contexts. Notwithstanding the acknowledged limitations, this study has made a contribution to our improved understanding of corporate sustainability in two major areas.

First, in using the six criteria framework of Dyllick and Hocherts (2002), we have demonstrated that it is possible to combine sustainability issues in firms and observe trends and illustrate patterns in corporate sustainability performance. Thus, we contribute to integrated reporting research by providing an illustration of the potential of corporate sustainability indicators to integrate economic, social and environmental information. In addition, our observations showed that trends can vary within any of the six corporate sustainability criteria (as noted in our indicators of socio-efficiency). What this suggests is that there may be positive trends (i.e. areas where the firm is performing well) and less positive trends (i.e. less well performing areas) that point to potential issues or directions for improvement (e.g. increased rates of corporate giving, reduced rates of energy consumption). In essence, this would aid and assist in the process of decision making and performance management within the firm.

Second, a firm’s CSI might be considered useful and explanatory, subject to some important limitations. In our case, BHP Billiton agreed that the indicators were useful for the purposes of firm management, but should be maintained at the firm level (given some of the intrinsic difficulties in comparing different resource businesses and operating conditions). Sustainability stakeholders offered that, depending on their
application, it may be preferable that each indicator be developed for a specific use and/or user. We were also cautioned that the indicators may be used by different stakeholders in a range of contexts, and that supplementary or additional information may need to be included for explanatory or informative purposes. Put simply, in some scenarios, the trend and numeric data may be insufficient for conveying adequate meaning or understanding. Users intending to use this form of analysis should note these limitations. In essence, we would argue that sustainability indicators should be read in conjunction with other sustainability reporting information produced through international consistent guidelines such as the GRI.

The focus of this study was on one of the global leaders in sustainability reporting and therefore, a lot of the trends and observations are positive. We do not in any way imply that this would be the case for other organisations and therein lies the challenge for the development of corporate sustainability indicators. Caution should be exercised when interpreting these indicators as these may be selectively used in portraying a positive image of an organization. We would suggest that much like the GRI project, integrated reporting projects consider the need for the development of consistent corporate sustainability indicators as one of the ways of integrating economic, social and environmental information. It should also be acknowledged that in the absence of mandatory requirements, reporting may not always be reflective of actual performance in relation to social and environmental issues and therefore, mandatory requirements for integrated reporting are needed to reduce the reporting-performance gap.

In closing, this article demonstrates that the development of usable CSI still has some way to go. While a great deal of work has been done in this area, there is still much to do. We have attempted to stimulate further consideration of CSI and its potentially critical role in integrated reporting, while injecting some practical and applied examination of sustainability issues that would be somewhat useful to other companies.
Therefore, we hope that researchers and practitioners alike will take up the opportunities and intellectual pursuits that lay ahead in this important era of integrated reporting.

Acknowledgements

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References


Institute of Chartered Accountants in Australia (ICAA). 2011. Integrating sustainability into business practices: A case study approach, ICAA.


Figure 1. BHP Billiton Company – CSI Trends for the period 2001-2009
<table>
<thead>
<tr>
<th>Integrated ISD</th>
<th>Provides information on/Trends</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental-Economic indicators</strong></td>
<td>Resource consumption related to the firm’s business operations in terms of its overall financial turnover or generated revenue</td>
<td>13.6</td>
<td>38.0</td>
<td>17.6</td>
<td>13.1</td>
<td>10.3</td>
<td>9.3</td>
<td>7.3</td>
<td>6.4</td>
<td>7.9</td>
</tr>
<tr>
<td>EE02: Energy consumed per Revenue dollar earned (PJ/BS)</td>
<td>Pollutants related to the firm’s business operations in terms of its overall financial turnover or generated revenue</td>
<td>20.4</td>
<td>22.2</td>
<td>16.6</td>
<td>13.2</td>
<td>9.9</td>
<td>7.6</td>
<td>6.2</td>
<td>5.1</td>
<td>6.1</td>
</tr>
<tr>
<td>EE03: Waste generated per Revenue dollar earned (Tonnes/MS)</td>
<td>Resource consumption related to the firm’s business operations in terms of its overall financial turnover or generated revenue</td>
<td>16.1</td>
<td>10.6</td>
<td>11.1</td>
<td>7.4</td>
<td>7.1</td>
<td>5.1</td>
<td>4.0</td>
<td>3.9</td>
<td>4.1</td>
</tr>
<tr>
<td>EE04: Carbon emissions per Revenue dollar earned (Mt CO$_2$-eq/BS)</td>
<td>Pollutants related to the firm’s business operations in terms of its overall financial turnover or generated revenue</td>
<td>3.0</td>
<td>3.4</td>
<td>2.7</td>
<td>2.0</td>
<td>1.6</td>
<td>1.2</td>
<td>1.0</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>EE05: Waste generated per Assets dollar (Tonnes/MS)</td>
<td>Pollutants related to the firm’s business operations in terms of its overall financial assets</td>
<td>10.3</td>
<td>6.1</td>
<td>6.5</td>
<td>5.7</td>
<td>4.9</td>
<td>4.0</td>
<td>3.1</td>
<td>3.1</td>
<td>2.7</td>
</tr>
<tr>
<td>EE06: Carbon emissions per Assets dollar (Mt CO$_2$-eq/BS)</td>
<td>Pollutants related to the firm’s business operations in terms of its overall financial assets</td>
<td>1.9</td>
<td>1.9</td>
<td>1.6</td>
<td>1.6</td>
<td>1.2</td>
<td>0.9</td>
<td>0.8</td>
<td>0.7</td>
<td>0.6</td>
</tr>
<tr>
<td>EE07: Water consumed per Project dollar approved (L/$)</td>
<td>Resource consumption related to the firm’s business operations in terms of its forward investment program</td>
<td>72</td>
<td>233</td>
<td>280</td>
<td>148</td>
<td>59</td>
<td>38</td>
<td>27</td>
<td>34</td>
<td>29</td>
</tr>
<tr>
<td>EE08: Energy consumed per Project dollar approved (PJ/BS)</td>
<td>Pollutants related to the firm’s business operations in terms of its forward investment program</td>
<td>108</td>
<td>137</td>
<td>265</td>
<td>149</td>
<td>58</td>
<td>31</td>
<td>23</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>EE09: Waste generated per Project dollar approved (Tonnes/MS)</td>
<td>Pollutants related to the firm’s business operations in terms of its forward investment program</td>
<td>85</td>
<td>65</td>
<td>177</td>
<td>84</td>
<td>41</td>
<td>21</td>
<td>15</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>EE10: Carbon emissions per Project dollar approved (Mt CO$_2$-eq/BS)</td>
<td>Pollutants related to the firm’s business operations in terms of its forward investment program</td>
<td>16</td>
<td>21</td>
<td>43</td>
<td>24</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td><strong>Environmental-Social indicators</strong></td>
<td>Job creation per unit of resources consumed</td>
<td>227</td>
<td>76</td>
<td>113</td>
<td>107</td>
<td>113</td>
<td>110</td>
<td>114</td>
<td>109</td>
<td>102</td>
</tr>
<tr>
<td>ES02: Employee per Energy consumed (Emp/PJ)</td>
<td>Job creation per unit of waste/pollutants generated</td>
<td>151</td>
<td>129</td>
<td>119</td>
<td>107</td>
<td>117</td>
<td>134</td>
<td>136</td>
<td>134</td>
<td>134</td>
</tr>
<tr>
<td>ES03: Employee per Waste generated (Emp/Kt)</td>
<td>Job creation per unit of waste/pollutants generated</td>
<td>191</td>
<td>271</td>
<td>178</td>
<td>191</td>
<td>163</td>
<td>197</td>
<td>212</td>
<td>179</td>
<td>196</td>
</tr>
<tr>
<td>ES04: Employee per Carbon emissions (Emp/Kt CO$_2$-eq )</td>
<td>Job creation per unit of waste/pollutants generated</td>
<td>1.0</td>
<td>0.9</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>ES05: Community contribution per Waste generated (S/Tonnes)</td>
<td>Share of distributed revenues related to generation of pollutants</td>
<td>63</td>
<td>214</td>
<td>215</td>
<td>253</td>
<td>257</td>
<td>401</td>
<td>550</td>
<td>607</td>
<td>946</td>
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<tr>
<td>ES06: Community contribution per Carbon emissions (S/M ton eq.)</td>
<td>Share of distributed revenues related to generation of pollutants</td>
<td>0.30</td>
<td>0.70</td>
<td>0.90</td>
<td>0.90</td>
<td>1.10</td>
<td>1.70</td>
<td>2.10</td>
<td>2.80</td>
<td>4.10</td>
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<tr>
<td>ES07: Community contribution per Water consumed (M$/GL)</td>
<td>Share of distributed revenues related to consumption of resources</td>
<td>0.17</td>
<td>0.06</td>
<td>0.14</td>
<td>0.14</td>
<td>0.18</td>
<td>0.22</td>
<td>0.30</td>
<td>0.37</td>
<td>0.50</td>
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<tr>
<td>ES08: Community contribution per Energy consumed (M$/PJ)</td>
<td>Share of distributed revenues related to consumption of resources</td>
<td>0.05</td>
<td>0.10</td>
<td>0.14</td>
<td>0.14</td>
<td>0.19</td>
<td>0.27</td>
<td>0.35</td>
<td>0.46</td>
<td>0.65</td>
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<tr>
<td><strong>Social-Economic indicators</strong></td>
<td>Various firm financial measures related to employment created</td>
<td>0.32</td>
<td>0.35</td>
<td>0.50</td>
<td>0.71</td>
<td>0.85</td>
<td>0.98</td>
<td>1.19</td>
<td>1.43</td>
<td>1.23</td>
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<tr>
<td>SE01: Revenue dollar earned per Employee (M$/Emp)</td>
<td>Various firm financial measures related to employment created</td>
<td>0.51</td>
<td>0.61</td>
<td>0.86</td>
<td>0.93</td>
<td>1.24</td>
<td>1.28</td>
<td>1.54</td>
<td>1.82</td>
<td>1.92</td>
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<tr>
<td>SE02: Firm assets per Employee (M$/Emp)</td>
<td>Various firm financial measures related to employment created</td>
<td>0.06</td>
<td>0.06</td>
<td>0.03</td>
<td>0.06</td>
<td>0.15</td>
<td>0.24</td>
<td>0.32</td>
<td>0.27</td>
<td>0.34</td>
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<tr>
<td>SE03: Project dollar approved per Employee (M$/Emp)</td>
<td>Firm financial measure related to fatal injuries</td>
<td>0.63</td>
<td>0.45</td>
<td>0.51</td>
<td>0.36</td>
<td>0.10</td>
<td>0.09</td>
<td>0.16</td>
<td>0.18</td>
<td>0.13</td>
</tr>
<tr>
<td>SE04: Revenue dollar earned per Fatalitly (B$/Fatal injury)</td>
<td>Firm financial measure related to fatal injuries</td>
<td>0.10</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.40</td>
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<tr>
<td>SE05: Community contribution per Revenue dollar earned (%)</td>
<td>Share of distributed revenues provided to the community</td>
<td>6</td>
<td>30</td>
<td>21</td>
<td>20</td>
<td>16</td>
<td>15</td>
<td>11</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>SE06: Community complaints per Revenue dollar earned (No./B$)</td>
<td>Share of distributed revenues related to the firm’s business operations in terms of its overall financial turnover or generated revenue</td>
<td>0.5</td>
<td>1.4</td>
<td>3.8</td>
<td>2.1</td>
<td>1.1</td>
<td>0.9</td>
<td>0.8</td>
<td>1.2</td>
<td>1.4</td>
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<tr>
<td>SE07: Community contribution per Project dollar approved (%)</td>
<td>Community complaints related to the firm’s business operations in terms of its forward investment program</td>
<td>34</td>
<td>186</td>
<td>328</td>
<td>232</td>
<td>94</td>
<td>63</td>
<td>43</td>
<td>47</td>
<td>27</td>
</tr>
<tr>
<td>SE08: Community complaints per Project dollar approved (No./B$)</td>
<td>Community complaints related to the firm’s business operations in terms of its forward investment program</td>
<td>38</td>
<td>22</td>
<td>102</td>
<td>80</td>
<td>52</td>
<td>31</td>
<td>22</td>
<td>18</td>
<td>13</td>
</tr>
</tbody>
</table>

Notes: Revenue - includes share of joint venture and associates revenue. Assets - sum of total fixed and current assets. Employees - From 2006, Average employee numbers include executive Directors, 100 per cent of employees of subsidiary companies, and our share of proportionally consolidated entities and operations. Part time employees are included on a full time equivalent basis. Employees of businesses acquired or disposed of during the year are included for the period of ownership. People employed by contractors are not included. Waste is the sum of general and hazardous waste. Water consumption includes all quality and recycled waters.
<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>International NGO.</td>
<td>Funds major environmental projects, develops and formulates public environmental policy, and delivers major environmental education and information dissemination campaigns. CI has over 90,000 operating members worldwide, with over three hundred staff in Australia. BHP Billiton and CI are working on a number of environmental management projects. CI has been critical of BHP Billiton’s past exploration activities in sensitive marine and offshore areas.</td>
</tr>
<tr>
<td>Program Director – Climate and Environment</td>
<td></td>
</tr>
<tr>
<td>Domestic NGO. Economics Advisor</td>
<td>Funds major environmental projects, develops and formulates public environmental policy, and delivers major environmental education and information dissemination campaigns. FFC has a domestic focus with over one hundred staff members across Australia. FFC has been extremely critical of some aspects of BHP Billiton’s projects.</td>
</tr>
<tr>
<td>State GO. Policy Director</td>
<td>Holds responsibility for legislation, and public programs, projects and policies in the areas of environmental protection, water security and sustainable communities. This agency provides high level government environmental policy and regulations to the resources industry (inclusive of BHP Billiton) within its jurisdictional area.</td>
</tr>
<tr>
<td>Global services supply firm.</td>
<td>Provides management, financial and information technology consulting and auditing services. The firm employs over 5,000 staff in Australia with over 50,000 staff worldwide. This firm provides consulting and financial services across the resources industry. FI provides financial and consulting services to BHP Billiton.</td>
</tr>
<tr>
<td>Director Sustainability Services</td>
<td></td>
</tr>
<tr>
<td>A local equities and investment brokerage.</td>
<td>Employs over 300 staff in all major capitals around Australia. The equities research team conducts analysis of firm performance, with investment advice flowing to private, corporate and institutional clients. This brokerage advises clients on the suitability of investing in firms within the resources industry, including BHP Billiton.</td>
</tr>
<tr>
<td>Equities Research Analyst</td>
<td></td>
</tr>
</tbody>
</table>