Integrating ISO 14001:2004 and Sustainability Reporting Guidelines

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Abstract

There is a growing expectation, identified in the King Report on Corporate Governance for South Africa 2002, for the meaningful disclosure of non-financial assurance. Financial information is predominantly retrospective and based on a company's past performance. Yet investors and other stakeholders need information on a company's future potential and sustainability to better understand the overall business strategy and performance. Therefore companies produce a sustainability report, reflecting the triple bottom line. However, there is currently, with most organisations, a disparity between reported GRI indicators and related management systems (e.g. ISO 9001, ISO 14001 and OHSAS 18001) available through the monitoring, measurement and communication elements of the management systems. The question that will be answered through this study is how companies can integrate management system generated information with their Sustainability Reporting process.

Uittreksel

Die "King Report for Corporate Governance in South Africa 2002" plaas baie klem op die belangrikheid wat nie-finansiele oudit in die betroubaarheid van 'n jaarverslag of volhoubaarheidsverslag speel. In die verlede was inligting rakende die maatskappy se werkverrigting die beste uitgebeeld in die finansiele state. Tog is dit belangrik vir besluitnemers, sowel as beleggers, om addisionele inligting, anders as net finansiele state, ook te bekom rakende 'n maatskappy se volhoubaarheid en toekomstige potensiaal, om sodoende die beste besluit te kan neem. Tot onlangs nog was daar 'n verwyderding tussen die "Global Reporting Initiative" en die verwante bestuurstelses wat insluit ISO 9001, ISO 14001 en OHSAS 18001. Dié bestuurstelsels en riglyne vir die "Global Reporting Initiative" is nog baie ver verwyderd van mekaar en word nie gesien as parallelle dokumente wat saam gebruik kan work vir die skryf van 'n volhoubaaraheidsverslag nie, in die geval meer spesifiek die omgewingsaspekte. Die vraag wat egter nou gevra kan word is of maatskappye wat wel 'n bestuurstelsel het, naamlik ISO 14001, inligting verkry vanaf die omgewingsbestuurstelsel om 'n jaarverslag of volhoubaarheidsverslag te skryf.

Key words: sustainability, sustainability report, global reporting initiative, environmental management systems, ISO 14001, clauses, indicators

Declaration

I declare that this research report, apart from the contributions mentioned in the acknowledgements, is my own unaided work. It is being submitted for the Degree Master of Environmental Management at the North-West University, Potchefstroom Campus. It has not been submitted before for any degree or examination at any other university.

Signature

4 November 2008

Date

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List of abbreviations:

CERES	Coalition for Environmentally Responsible Economics
CSI	Customer Service Improvement
CSR	Corporate Social Responsibility
DME	Department of Minerals and Energy
EMAS	European Union Eco-Management & Audit Scheme
EMP	Environmental Management Plan
EMS	Environmental Management Systems
GRI	Global Reporting Initiative
IAF	International Accreditation Forum
ILO	International Labour Organization
IMSS	Integrated Management System and Standards
ISO	International Organisation for Standardisation
IWMP	Integrated Waste Management Plan
JSE	Johannesburg Stock Exchange
MIRs	Major incidents reporting
NGO	Non-governmental organisations
NPO	Non-product output
SAP	System Analysis and Program Development
SHE	Safety, Health and Environmental
SHEQ	Safety, Health, Environmental and Quality
SRI	Social Responsible Investment
TC207	Technical Committee
WBCSD	World Business Council for Sustainable Development

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CHAPTER 1
Introduction

1.1 Introduction

Corporations are important players in achieving a transition to sustainability. These corporations produce a large portion of the goods and services associated with the economic development. In the process, they consume large amounts of energy and materials as well as producing large quantities of waste through the activities that are associated with environmental degradation. The broader issues of justice and equity also influence the corporate governance and labour practices. Fortunately, many of the larger companies in the world have recognized their roles in achieving a sustainability transition, as well as the potential profitability that this creates. As a result these companies have initiated efforts to assess and report on their economic, environmental and social aspect of their activities, products and services. The results of these three aspects are published as annual corporate sustainability reports or sustainable development reports (Parris, 2006:3).

Non-financial assurance, or also known as sustainability reporting, started in the 1990's and has continued in the 21st century (Kolk, 2003:279). Sustainability reporting is a writing that is intended to provide an objective account of the economic, social and environmental performance of an organization. The corporate responsibility reporting or sustainability reporting process should provide a dual role which includes firstly external communication with the company's stakeholders as well as informing the company's internal management processes (MacLean, *et al.*, 2007:3). The Global Reporting Initiative (GRI) process was launched in 1997 to develop guidelines to companies for reporting on the triple bottom line: economic, environmental and social performance and is the world's most widely used standardised sustainability reporting framework (KPMG & UNEP, 2006:6). The GRI is used to benchmark organizational performance with respect to laws, norms, codes, performance standards and voluntary initiatives. It demonstrates organizational commitment to sustainable development and compares an organization's performance over time (Lomas-Walker, 2008:2). The GRI aims to develop a voluntary reporting framework. This framework will elevate sustainability reporting practice to a level that is equivalent to that of financial reporting (Willis, 2003:233). These GRI guidelines are in their third generation and were released in October 2006 and should be used as the basis for all reporting (GRI Portal, 2006). They contain principles (including indicators) and guidance as well as standard disclosures to outline a disclosure framework that organizations can flexibly, voluntary and incrementally adopt (GRI Portal, 2006).

There are currently more than 1500 companies, including many of the world's leading brands who have declared their voluntary adoption of this guidelines worldwide (Lomas-Walker, 2008:2). Public reporting by companies in their sustainability reports performance is still a new concept in Africa; however, it appears that South Africa is not lagging far behind the rest of the world. Of the 642 reports that are listed on the GRI website, approximately 31 are from companies operating in Africa. Since 2002, the number of separate sustainability reports in most countries, including South Africa has increased considerably (Global Reporting Initiative, 2007). In South Africa the number of separate sustainability reports has risen from 1 to 18 in the last three years (KPMG, 2005:10).

Independent assurance remains a valuable part of reporting. It gives the readers and stakeholders comfort regarding information published in a report. In 2005 the number of assurance statements increased from 27 percent to 33 percent in the top 100 companies in 16 countries and most of these assurance statements are done by mayor accountancy firms (KPMG, 2005:3).

From a company's point of view, the benefits of reporting on their corporate social responsibility and environmental management include financial improvement, enhanced stakeholder relationships, improved risk management because of an understanding of non-financial risks, as well as improved investor relationships (KPMG & UNEP, 2006:6). Sustainability reporting is a way for companies to communicate their sustainability to stakeholders and to be transparent and accountable (KPMG, 2005:3). Other benefits of reporting on corporate social responsibility include improved management of environmental, social and governance impacts and risk, enhancement of the company's reputation and a greater ability to attract and retain both the customer and the talent. (Gordon, 2004:12).

The contents of a sustainability report include subjects such as occupational health & safety, labour, human rights, corporate governance, codes of conduct/ethics, employment equity, training, broad-based black economic empowerment, fraud prevention, HIV/AIDS and environmental.

Depending on the company, information and data for the sustainability report are generated in several ways. Some companies send out GRI questionnaires to their respective operations to collect information and data on their performance for a specific reporting year. Another way of collecting data is through the quarterly reports of a company. The contents of such reports are usually agreed upon at management meetings, sometimes without taking into consideration what information is already available from the company's management systems (Gildenhuys, 2007: Personal Interview).

Companies have to realise that it is crucial not just to report on their triple bottom line but to manage it as well. Reporting is not just about what competitors are doing but more about how information gathered through the reporting process helps the reporting company to achieve its strategic business objectives. These objectives should include well-defined strategic objectives for the environmental, social and governance legs (MacLean, *et al.,* 2007: 4).

The ideal way of producing a sustainability report would be for companies to use information produced by their management systems to compile the sustainability report. These management systems include an Environmental Management System (EMS) such as ISO 14001 to compile the environmental section in the company's sustainability report.

Environmental management system (ISO 14001) was first published in September 1996 and again reviewed in 2004. This standard is widely considered as one of the most important standards in ISO's environmental management series. The ISO 14001 standard is a process standard, which specifies a management process and not an end goal. It sets a framework for an environmental management system. An environmental management system contains elements or clauses which include environmental policy, defined by the top management of the company; identification of significant environmental aspects; the setting of environmental objectives and targets and clear identification and communication of roles and responsibilities within the environmental management system. Other elements include the establishment of procedures to ensure operational control of those activities and services which could have an impact on the environment; and lastly a means of checking the organization's EMS with respect to the requirements of ISO 14001. The developers of the ISO 14001 standard ensured that this environmental management system standard is applicable to organizations of varying sizes and circumstances, including small, medium and large enterprises. The aim of the ISO 14001 is to drive environmental improvements worldwide throughout a systematic and organised approach to environmental management (Woodside, *et al.*, 1999: ix).

The focus of this study will be to determine how much of the information presented in the annual GRI Reports that companies produce, originate from their management systems, specifically information generated from their environmental management system. This study will specifically focus on the environmental aspects of GRI Reports, determining the extent of which data produced by the ISO 14001:2004 Environmental Management System is used in the compilation of such sustainability reports.

1.2 Problem Statement

To what extent do companies integrate ISO14001:2004 environmental management system generated information with the environmental aspects of their Sustainable Development reporting (GRI) process?

1.3 Research sub-questions

In order to answer the main problem statement as stated above the following sub-questions need to be answered:

1.3.1 Are there clauses in the ISO 14001:2004 standard that are relevant to some indicators in the GRI Reporting requirements?

1.3.2 A survey has already been conducted by KPMG that there are companies in South Africa that report on their corporate sustainability (KPMG, 2005:3). The question has now risen on how many of these companies that do publish a sustainability report do have management systems, specifically ISO 14001:2004 environmental management systems in place.

1.3.3 If a company does have an environmental management system, it needs to be determined whether this company does use the information or data generated from this management system in their sustainability report.

1.4 Research methodology

A desktop study was performed for most aspects of this study. Where necessary, interviews were conducted with relevant people to obtain the necessary information to achieve the objective of this study. The majority of documents evaluated and considered during this study were those that were electronically available.

In order to answer the above research sub-questions, certain steps or methodology need to be followed:

1.4.1 To be able to answer the first sub-question, the GRI reporting requirements and the ISO 14001:2004 standard have been evaluated to determine which clauses in ISO 14001:2004 are relevant and can be compared to the environmental performance indicators of the GRI reporting requirements.

1.4.2 Secondly, annual reports or sustainability reports included in the Social Responsible Investment (SRI) Index Constituents on the Johannesburg Stock Exchange have been evaluated to determine to what extent companies that do publish annual sustainability reports in South Africa do have Management System Standards, specifically ISO 14001, in place and if their latest sustainability reports were assured by an independent auditor.

1.4.3 Lastly, two companies that are included in the SRI Index Constituents that do have an environmental management system in place have been selected. These selected companies' sustainability reports have been evaluated to determine whether or not they make use of information and data generated from their environmental management system to contribute to the subject matter of their sustainability reports.

However, it is suspected that there is currently, with most organisations, a disconnect between reported GRI indicators and related information available through the monitoring, measurement, and communication elements of management systems. If companies do not utilise information produced by their management systems when compiling sustainability reports, it could result in an increased work load of staff as well as possible inaccurate reporting.

CHAPTER 2
Sustainability Reporting: where do GRI and ISO fit in?

2.1 Sustainability and the Global reporting initiative (GRI)

The World Summit on Sustainable Development held in Johannesburg in September 2002 emphasised that it is cause of concern that sustainability or sustainable development is not yet being reflected as a broadly recognised concern among South Africa's largest companies (Visser, 2002:81). The best definition of sustainable development is the 1987 Brundtland definition that states that sustainable development is the development which meets the needs of the present without compromising the ability of future generations to meet their own needs. There is hardly any human activity that does not have some impact on the environment (Moody-Stuart, 2006:93). However, there has been a considerable increase in corporate awareness for environmental performance recently and an associated desire to report such performance publicly (Morhardt, *et al.,* 2002:215).

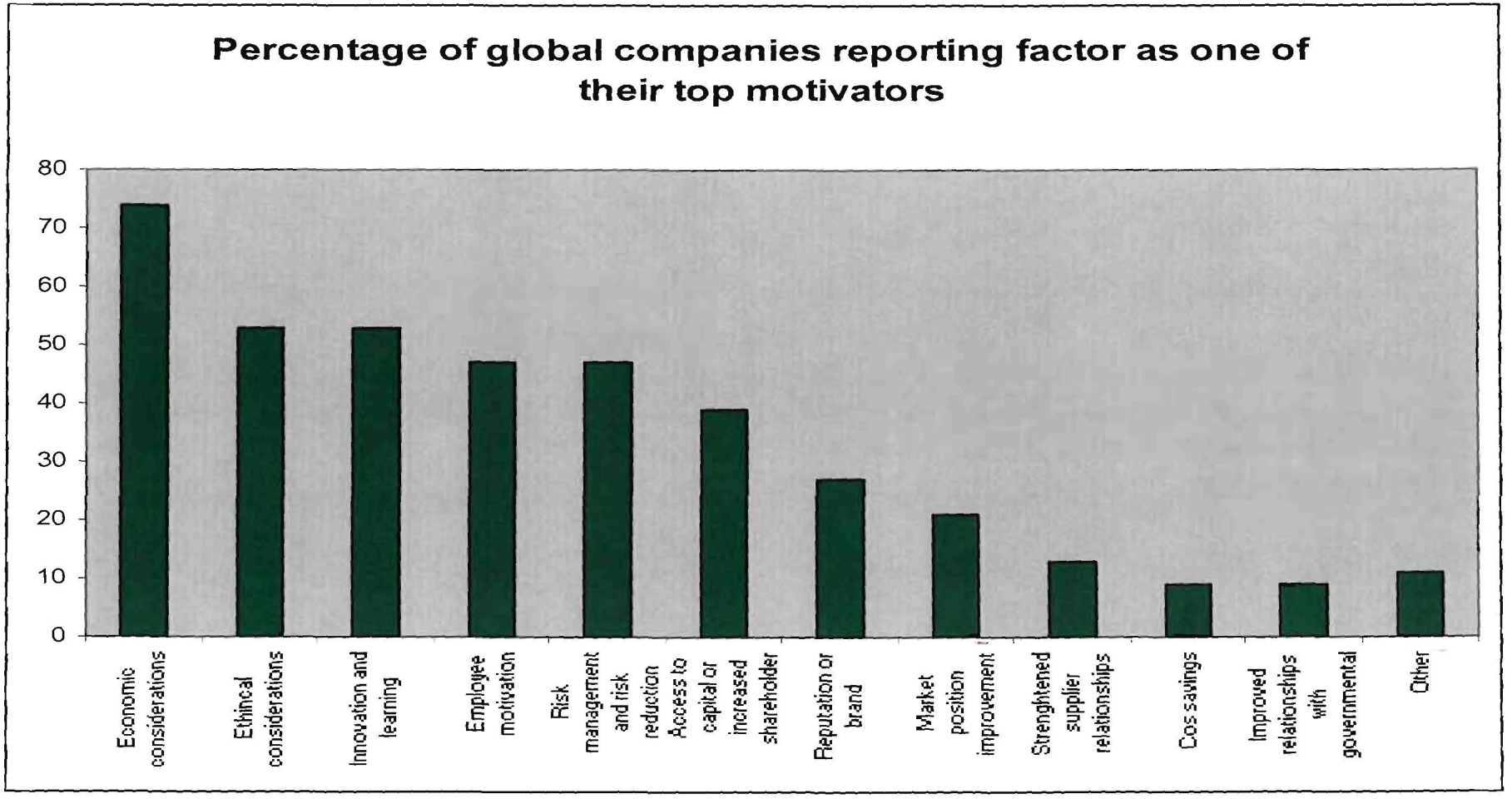
The sustainability report is an important companion to financial reporting that provides data on non-financial aspects related to environmental, social and governance issues that affect the future performance, value preservation and income generation of the company (Hansen, 2007:20).

To create transparent reports that provide accurate and reliable data, many companies are now reporting results across the "triple bottom line" of their economic, environmental and social performance (Ballou, *et al.,* 2006:65-66). The philosophy behind sustainability reporting is that companies are increasingly expected to broaden their responsibility beyond simply ensuring financial performance for shareholders, by demonstrating their "triple bottom line" performance for stakeholders. Sustainability or triple bottom line refers to balancing and integrating corporate management and report across economic, which include financial; social, which include all stakeholders; and environmental, including health and safety, dimensions (Visser, 2002:79-80). This sustainability reports inform stakeholders of the reporting organization's ability to manage key risks. Because these interests vary, the type of information also varies. Much of this has to do with the company's economic, social, operational and environmental objectives (Ballou, *et al.,* 2006:65-66).

As previously mentioned, companies are daily faced with increased pressure from internal and external stakeholders to report on their social and environmental performance as well as the usual financial reporting measures. This is done by publishing a report on this information in either an annual financial report or a voluntary sustainability report. Therefore companies have

come to realise that meeting stakeholder expectations is as necessary a condition for sustainability as the need to achieve overall strategic business objectives. It is of great value not just for stakeholders but companies themselves to create environmental as well as social value. Other reasons for publishing a sustainability report include compliance with regulations and to reduce the cost of future compliance (Morhardt, *et al,.* 2002:215). Sustainability reports are also used as a tool by companies to sustain their power by undermining any legitimate objection of the stakeholders, by providing evidence of positive measures to protect the environment, care for their employees and contribute to the community (Mitchell, *et al.*, 2005:67). People and groups can use the environmental information from a company's sustainability report to help them to decide whether or not to invest in this particular company of interest, to purchase its products, to seek employment with them or to deal with them in other ways (Mitchell, *et al.,* 2005:18). Figure 1 below describes the percentage of global companies that identified the reporting factor as one of their top motivators (Hansen, 2007:20).

Figure 1: Percentage of global companies reporting factor as one of their top motivators



(Hansen, 2007:20)

Sustainability reporting can be explained as the process of reporting on a company's activities, to the extent that they impact on, and are influenced by the environment, employees, local communities, and society at large (Mitchell, *et al.,* 2005:67).

In the sustainability reporting field, the Institute of Directors, active in 1994, issued the King Report on Corporate Governance which applies to all Johannesburg Stock Exchange (JSE) listed companies, financial service companies and large public entities. King 2 that was revised in 2002 has significantly increased the emphasis on director's sustainability obligations, with a complete chapter committed to "non-financial matters", including social accounting, stakeholder engagement, ethics, environment, health, safety, societal transformation and black economic empowerment. In general, King 2 places special emphasis on the importance of transparent, credible non-financial reporting (Visser, 2002:80).

South African listed companies are expected to comply with the King Code of Corporate Governance (Institute of Directors, 2002:95). This King 2 report proposes that companies report on their triple bottom line. However, such reporting remains largely voluntary (Mitchell, *et al.,* 2005:20).

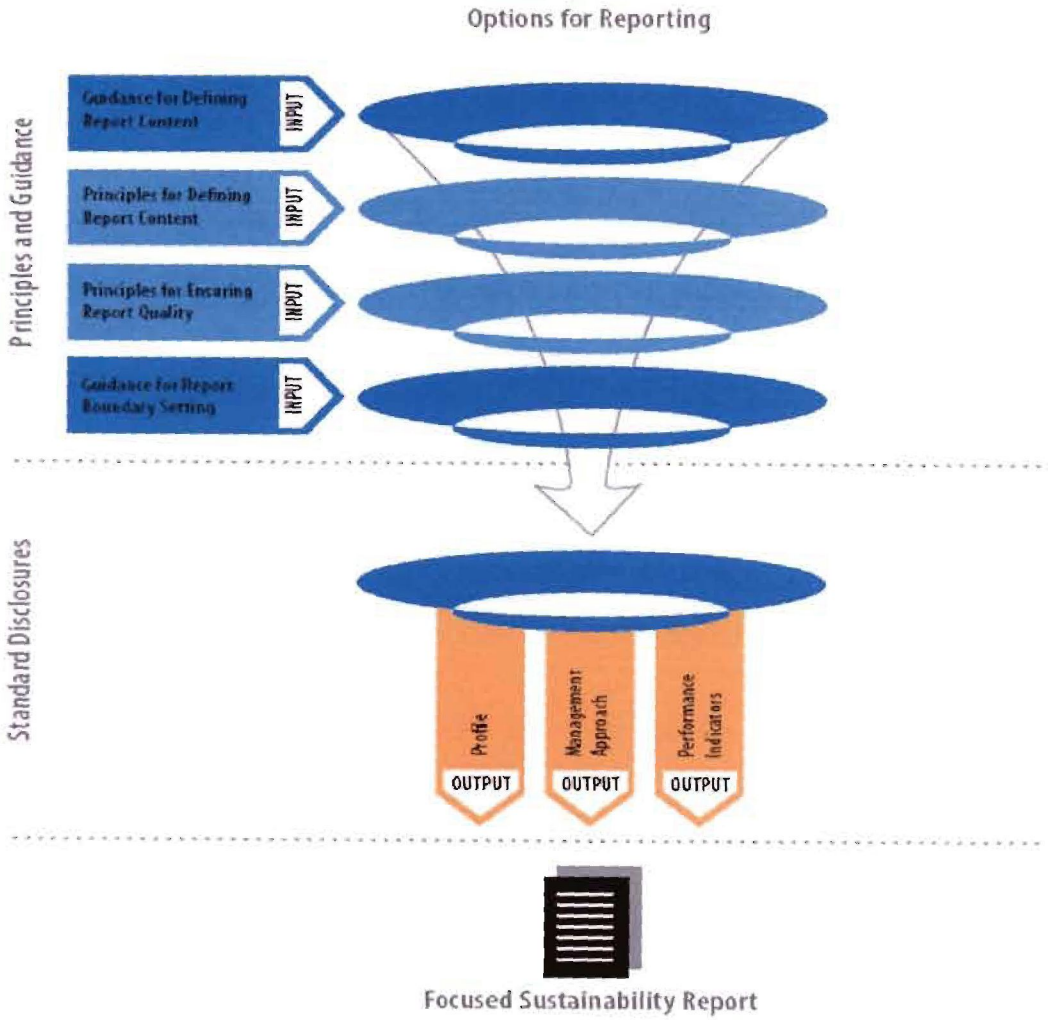
The awareness of environmental issues is not a recent subject, but has been rising during the last 21 years (Dixon, *et al.,* 2005:703). It is important thou, that if a company do publish a sustainability report, that this report is comprehensive, covering all the areas of the Global Reporting Guidelines and all material issues; but even if this standard is not achieved the result is likely to be improvement (Moody-Stuart, 2006:89).

Pressure of companies to report on sustainability to some extent is driven by the increasing support of international sustainability standards. This standards include ISO 14001 (International Standards Organisation), Accountability 1000 (Institute of Social and Ethical Accountability), the Sustainability Reporting Guidelines (Global Reporting Initiative) and the United Nation's Global Impact. In addition, the latest Marrakech agreement on the Kyoto Protocol on climate change indicates the increasing importance of greenhouse gas reporting (Visser, 2002:79-80).

Sustainable development reports are generally prepared based on the reporting criteria established by an outside organisation or the company's internal guidelines. The most prominent reporting guidelines or regulations are those of the Global Reporting Initiative (GRI). The GRI is a non-profit organisation based in Amsterdam that created the sustainability reporting framework and guidelines. The GRI was launched in 1997 with the goal of "enhancing

the quality, rigor, and utility of sustainability reporting". The GRI began to develop criteria that could eventually serve as the basis for generally accepted reporting standards (Ballou, *et al.*, 2006:66). This GRI Guidelines were released in October 2006 following a three year development period that engaged more than three thousand individuals form diverse sectors, worldwide and are in their third generation ("G3"). The Guidelines outline core content for reporting broadly relevant to all organizations regardless of size, sector or location. It is important that organizations realise that sustainable reporting is a living process and tool and that it does not begin or end with an online or printed publication. Sustainability reporting should fit into a broader process for setting organizational strategy, implementing action plans, assessing outcomes and continuously improving. Organizations should recognise that sustainability reporting is an essential part of management practice for successful organizations of all sizes worldwide (Lomas-Walker, 2008:4). See schematic illustration of the G3 guidelines overview below.

Figure 2: Overview of G3 guidelines



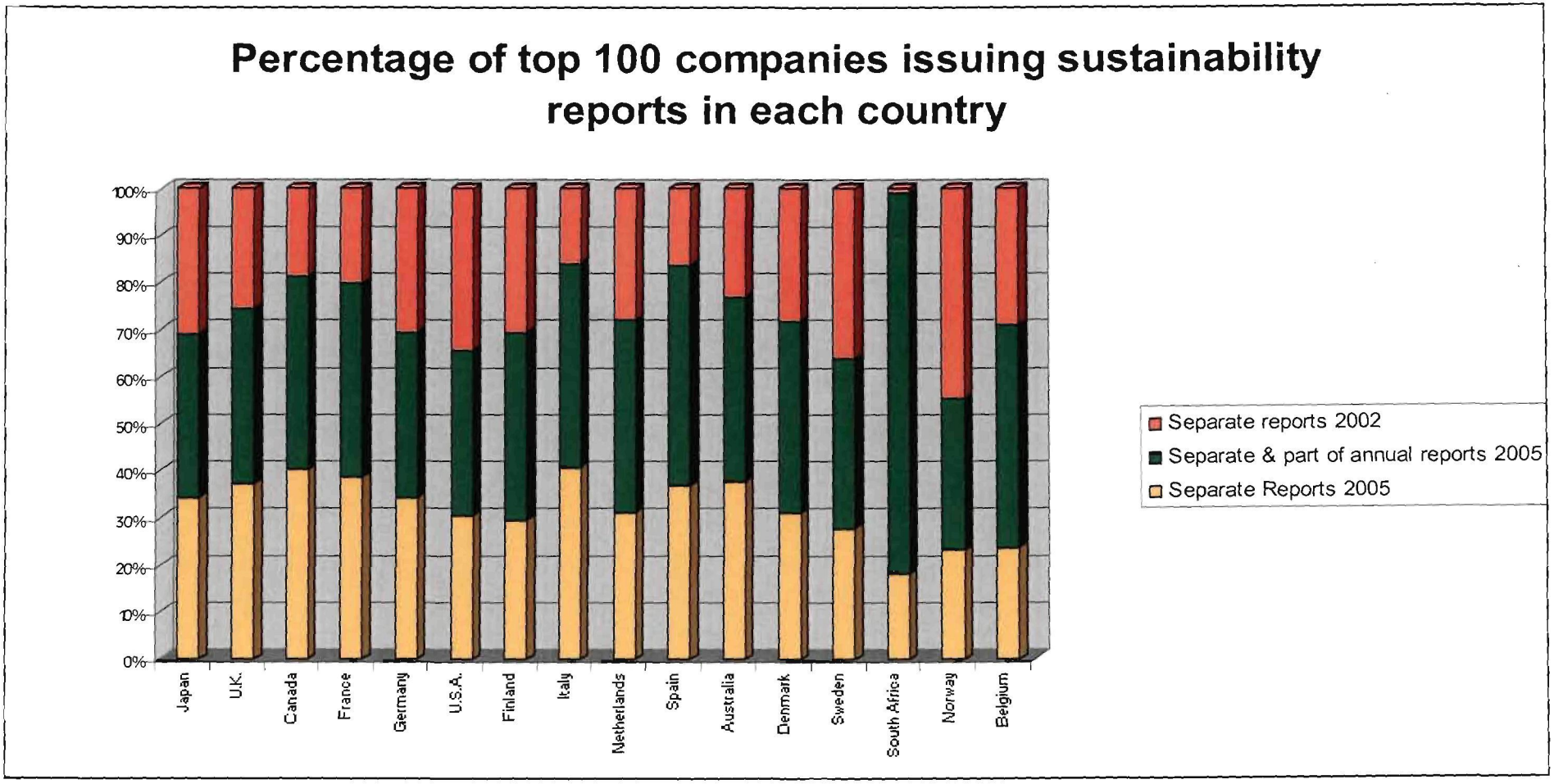
(Lomas-Walker, 2008)

The report should not just contain subjects on occupational health and safety, labour etc., but should also include support for company-sponsored community-based projects, as well as areas not traditionally reported on (Mitchell, *et al.,* 2005:70).

KPMG conducted a survey of sustainability reporting in South Africa in 2001. The results of this survey revealed that disclosure on sustainability issues by South African companies continue to improve, although on average, only 57% of the top companies are reporting on these significant issues. Issues that are most reported on are corporate governance, codes of conduct, which include ethics, employment equity, education and training, while black economic empowerment, fraud prevention and HIV/AIDS are the least reported. Social, environmental, safety and health matters tend to be reported in more detail in the annual reports (Visser, 2002:79).

Two thirds of the 250 largest companies in the world have adopted sustainability reporting as a tool to determine future performance. See figure 3 for the percentage of top 100 companies issuing sustainability reports in each country. In 2006, only 18% of South African companies published separate report. This is in comparison with 2002 where only 1% of separate sustainability reports were published. It is clear that there is an evolutionary course of sustainability reporting and that more companies move from the informal statements to a more formal reporting with a full range of metrics tied directly to the company's performance and risk management (Hansen, 2007:20).

Figure 3: Percentage of top 100 companies issuing sustainability reports in each country



(Hansen, 2007:20)

Most of the time it is assumed that assurance only applies to a company's published report. However, assurance equally applies to the company's fundamental systems and processes, including their products, services and governance. Assurance is obtained by different tools and processes which include auditing, verification and validation. Assurance also includes communication of the results of the evaluation to lend credibility for users. Assurance is currently provided by a variety of different providers. External providers include audit professionals, civil society organizations and corporate social responsibility (CSR). The assurance process covers specific areas of performance such as economic, environmental and social performance. Sustainability assurance aims to cover performance in general (Lippan, 2004:6).

As with any information in organisation reports, the lack of an accompanying independent assurance report reduces the quality and informational usefulness of a sustainability report. The aspects of sustainability reports are auditable because they are quantitative and verifiable. The reports that are audited generally are limited in scope. The GRI's new reporting framework addresses the issue of assurance for sustainability reports (Ballou, *et al.*, 2006:67).

Although reporting on environmental and social performance are not mandatory, companies appear to being doing it because of peer pressure and to improve stakeholder and employees' perception of the company's environmental performance. If companies already collected data as part of their improved social an environmental management, management feel that they might as well report it (Morhardt, *et al.*, 2002:217).

2.2 Environmental Management Systems – ISO 14001

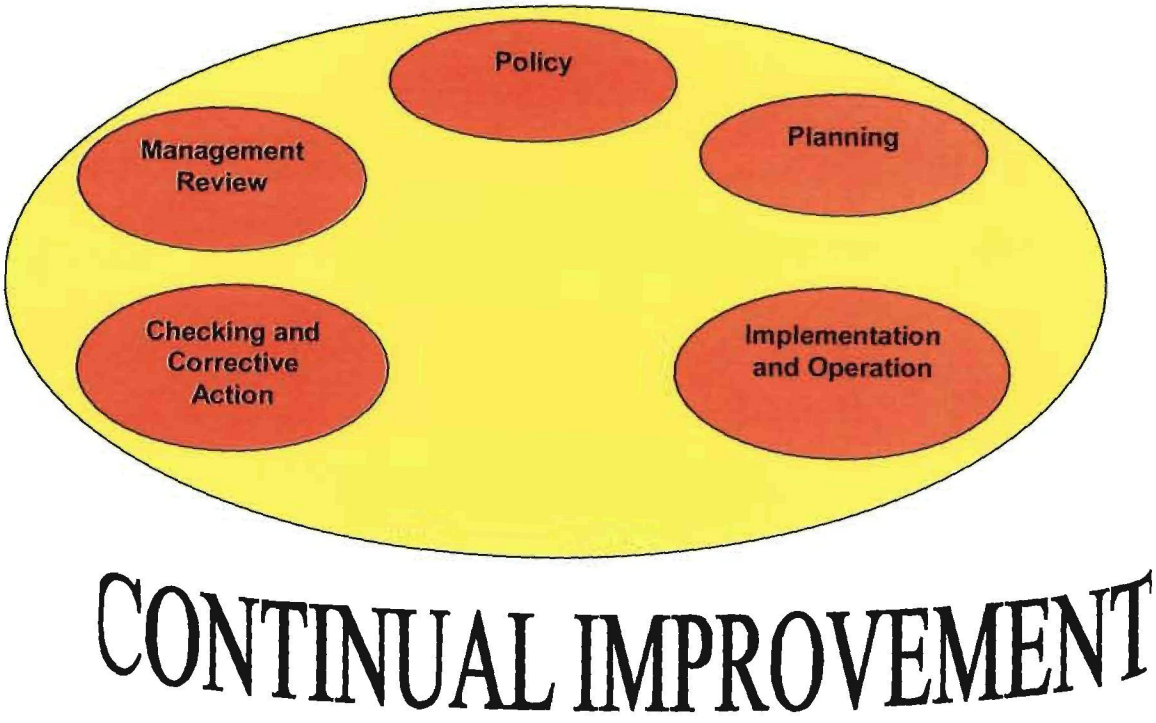
As mentioned earlier, companies are pressured to report on sustainability to some extent and that this is driven by the increasing support of international sustainability standards, which include the ISO 14001, environmental management system standard (Visser, 2002:79-80).

Benefits of implementing an environmental management system include an environmental management system aligned with ISO 14001 that makes the task of managing environmental matters "system dependent" rather than "person dependent". The employees, from top to bottom, including the on-site contractors, who did not traditionally see themselves as needing to be involved with the environmental management process, now become fully integrated into the environmental management system. They also need to understand their role in supporting this system. Lastly the setting of environmental objectives and targets are based on significant

environmental aspects and impacts. This goes beyond simply relying on legal and regulatory areas for environmental improvement (Woodside, *et al.*, 1999: x).

The International Organisation for Standardisation (ISO) formed a few Technical Committees, one of which is called TC 207, to develop an international environmental standard. The result of the TC 207's efforts was the development of the ISO 14000 series which is a standard for environmental management systems. ISO 14001, an environmental management system, is part of this ISO 14000 series. An environmental management system can be defined as the part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy. These mentioned key elements interact with each other to form the framework of an integrated, systematized approach to environmental management, with the result of continual improvement of the overall system and, ultimately, environmental performance (Woodside, *et al.*, 1999:4). This was one of the first ISO 14001 model and are illustrated in figure 4 below.

Figure 4: ISO 14001 model



(Woodside, *et al.*, 1999:5)

The ISO 14001 was finalised and issued on September 1, 1996 and revised again in 2004. This standard was described as the most widely recognized environmental management system standard. The ISO 14001 standard is applicable to all types and sizes of organisations and it can be applied to all parts or any single part of an organisation and/or its activities, product, services and facilities (Woodside, *et al.*, 1999: 3-4).

ISO 14001 is based on the methodology known as Plan-Do-Check-Act (PDCA) as described in figure 4 above and figure 5 below. The PDCA Cycle was originally developed by Walter Shewhart in the 1930's, and later adopted by W. Edwards Deming. This model provides a framework for the improvement of a process or system. It can be used to guide the entire improvement project, or to develop specific projects once target improvement areas have been identified (Wikipedia:2007). The "planning" stage is the establishment of objectives and processes that are necessary to deliver results in accordance with the company's environmental policy. The "do" stage is the implementation of the processes. During the "check" phase the company monitor and measure processes against their environmental policy, objectives, targets, legal and other requirements, and report these results. Actions are taken during the "act" phase to continually improve performance of the environmental management system (ISO 14001:2004, vi). The Deming Cycle is described in figure 5 below.

Figure 5: The Deming Cycle

(http://en.wikipedia.org/wiki/PDCA)

By implementing ISO 14001, a company manages the significant impacts it might have on the environment. This can be achieved by having the seven P's in place which include a policy, plans, programs, projects, protocols, procedures and permits. All companies that have products, activities and services that interact with the environment should have an environmental policy statement in place. A strong environmental policy is the heart of responsible environmental management (Bowman, 2005:6). The certification to the ISO 14001 standard is voluntary for any company and is not a legal requirement.

One key to a successful environmental management system is clear and timely communication. Typically, the audit coordinator is the central point for communication (Woodside, *et al.*, 1999: 157). Clear communication of audit schedules and audit results are of great importance. Clause 4.4.3 of the ISO 14001:2004 standard encourages internal and external communication (ISO 14001:2004, 6). ISO 14004 (The European Standard ISO 14001:1996:18-19) states that a company can communicate their environmental information in various ways which include the annual report or sustainability report (Dixon, *et al.*, 2005:710).

A conclusion can essentially be made that states that it might be ideal for a company to compile their sustainability report by using data and information generated from their Environmental Management System. ISO 14001 certified companies can be confident that all the information that is obtained from this management system for their sustainability report is true, accurate and transparent. The reason being that these certified companies' Environmental Management Systems are getting audited regularly as part of their certification cycle as required by the International Accreditation Forum (IAF).

There is a large number of information that can be gathered from the reporting company's environmental management system. This information can include incident reporting that can be obtained from information gathered by conforming to ISO 14001:2004 clause 4.5.3 (non-conformance, corrective and preventive action), clause 4.3.1 (environmental aspects) and clause 4.3 2 (legal and other requirements) just to mention a few. By using this information the environmental section of the sustainability report can be more complete, transparent and accurate.

CHAPTER 3
EMS clauses relevant to the GRI reporting indicators

3.1 Introduction

Over the past several years many companies worldwide have adopted formal environmental management systems (EMS) as procedures for systematically identifying environmental aspects and impacts of their operations, as well as setting goals for compliance, performance and continuous improvement by managing them throughout these operations. Many companies have developed their own environmental procedures for years, but until recently there was no trend towards formalising them more generally (Andrews, *et al.*, 1999:3).

This widespread adoption of an environmental management system consequently represents at least a philosophical intent to provide a means towards achieving the goal of sustainable development (Andrews, *et al.*,1999:3).

A methodology for corporate sustainability reporting is the Global Reporting Initiative (GRI) that begun in the 1997 under the management of the Coalition for Environmentally Responsible Economics (CERES) with involvement by corporations, non-governmental organisations (NGOs), consultants, accountancy firms, business associations, universities, and other stakeholders. The objective of the GRI guidelines is to establish a framework for enterprise-level reporting on the linked aspect of sustainability including environmental, economic and the social (Andrews, *et al.*, 1999:9).

The GRI guidelines, just like the EMS clauses, are aimed at documenting information systematically at enterprise level. They include environmental aspects of products, activities and services as well as processes affecting air, water, natural resources, land, fauna, flora and human health. They also address social aspects and economic aspects, especially financial performance (Andrews, *et al.*, 1999:9).

Examples of specific environmental performance indicators include major stakeholder groups; number, volume and nature of accidental or non-routine releases to land, air and water. This might include chemical spills, oil spills, and emissions resulting from upset combustion conditions. Other indicators include occupational health and safety; total energy use; total material use other than fuel; total water use; quantity of non-product output (NPO) returned to process or market by recycling or reuse, by material type and by on- and off-site management type. It also include quantity of NPO returned to land, by material type and by on- and off-site

management type; emissions to air and discharges to water, by type and indicators of social and economic aspects of operational performance (Andrews, *et al.*, 1999:9).

These GRI guidelines provide more substantive and specifically suggestions of the range of; for example, environmental performance indicators that might be addressed in an EMS. It is important to keep in mind that the GRI guidelines do not provide guidance for implementing data collection, information and reporting systems and organisational procedures for preparing sustainability reports, leaving these to ISO and other procedural guidance processes. Like EMS, the GRI guidelines do not present standards for rating sustainability management and performance, but merely for comparing performance incrementally against both the enterprise's own prior-year performance and other enterprises (Andrews, *et al.*, 1999:9).

3.2 Methodology

The question that can be asked is: how can companies integrate useful management system generated information with their Sustainable Development reporting (GRI) process?

To be able to answer this question, a study has been done to identify which of the ISO 14001:2004 standard clauses are relevant and can be compared to the indicators in the GRI Reporting requirements, specifically environmental performance indictors.

The environmental performance indicators in the GRI reporting guidelines are listed in a column in the table 1 below with the relevant ISO 14001:2004 environmental management standard clauses in the column next to it.

3.3 Results

Table 1: Comparison between GRI indicators and ISO 14001 clauses:

GRI Indicator no	Environmental performance indicator	ISO clause no.	Corresponding ISO clause
MATERIALS			
EN1	Materials used by weight or volume.	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
EN2	Percentage of materials used that are recycled input materials.	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
ENERGY			
EN3	Direct energy consumption by primary energy source	4.5.1	Monitoring & Measurement
EN4	Indirect energy consumption by primary source	4.5.1	Monitoring & Measurement
EN5	Energy saved due to conservation and efficiency improvement	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
EN6	Initiatives to provide energy-efficient or renewable energy-based products and services, and reductions in energy requirements as a result of these initiatives.	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
WATER			
EN8	Total water withdrawal by source.	4.5.1	Monitoring & Measurement
EN9	Water sources significantly affected by withdrawal of water.	4.5.1	Monitoring & Measurement
EN10	Percentage and total volume of water recycled and re-used.	4.5.1 4.3.3	Monitoring & Measurement Objectives and Targets
BIODIVERSITY			
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	4.1 4.5.1	Definition of scope Monitoring & Measurement
EN12	Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity values outside protected areas.	4.3.1	Environmental aspects & impacts
EN13	Habitats protected or restored.	4.3.3	Objectives & Targets EMP's

GRI Indicator no	Environmental performance indicator	ISO clause no.	Corresponding ISO clause
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	4.2 4.3.3 4.6	Policy Objectives & Targets Management Review
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	4.1	(definition of scope)
EMISSIONS, EFFLUENTS AND WASTE			
EN16	Total direct and indirect greenhouse gas emissions by weight.	4.5.1	Monitoring & Measurement
EN17	Other relevant indirect greenhouse gas emissions by weight.	4.5.1	Monitoring & Measurement
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	4.3.3 4.5.1	Objectives & Targets Monitoring & Measurement
EN19	Emission of ozone-depleting substance by weight.	4.5.1	Monitoring & Measurement
EN20	NOx, SOx and other significant air emissions by type and weight.	4.5.1	Monitoring & Measurement
EN21	Total water discharge by quality and destination.	4.5.1	Monitoring & Measurement
EN22	Total weight of waste by type and disposal method.	4.5.1	Monitoring & Measurement
EN23	Total number and volume of significant spills.	4.5.1 4.5.2 4.5.3	Monitoring & Measurement Evaluation of compliance Non-conformance, Corrective & Preventive Action
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the term of the Basel Convention Annex I, II, III, and VIII and percentage of transported waste shipped internationally.	4.5.1	Monitoring & Measurement
EN25	Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	4.1	Scope
PRODUCTS AND SERVICES			
EN26	Initiatives to mitigate environmental impacts of products and services and extent of impact mitigation.	4.3.1	Environmental Aspects & Impacts
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	4.5.1	Monitoring & Measurement

GRI Indicator no	Environmental performance indicator	ISO clause no.	Corresponding ISO clause
COMPLIANCE			
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	4.3.2	Legal and other requirements
TRANSPORT			
EN29	Significant environmental impacts of transporting goods and materials used for the organization's operations, and transporting members of the workforce.	4.3.1 4.5.3 4.3.2	Environmental aspects & impacts Non-conformance, Corrective & Preventive Action Legal and other requirements
OVERALL			
EN30	Total environmental protections expenditures and investment by type.	4.6 4.4.1	Management Review Resources, roles, responsibility & authority

3.4 Discussion and interpretation:

There are several GRI environmental performance indicators that make direct reference to the Environmental Management System in the Sustainability Reporting Guidelines (GRI Portal, 2006). These environmental performance indicators include EN12, EN13, EN14, EN18, EN23 and EN29.

The relevant environmental performance indicators and ISO 14001:2004 clause are described below:

EN12: 4.3.1

To be able to report on the significant impact of the reporting company on biodiversity, the company can obtain data directly from the aspect and impact register. The aspect and impact register is one of the minimum requirements of an EMS and assist the reporting company in mitigating these significant impacts on the environment.

EN13:4.3.3

A company that does report on their environmental performance should have plans in place to prevent, manage and rehabilitate the damaged natural habitats as a result of the company's activities. By doing this a company can have environmental management plans (EMP) in place

for preventing and redressing negative impacts as required by clause 4.3.3, Objectives, targets, and in this case programme(s) (plans).

EN14:4.2; 4.3.3; 4.6

When reporting on EN14, a company can effortless obtain data from their objectives and targets that have been set as required by the EMS. The objectives and targets shall include commitments of prevention of pollution as well as continuous improvement. Strategies, current actions and future plans should be measurable and consistent with the environmental policy. The environmental policy consequently provides the framework for setting and reviewing environmental objectives and targets. During the management review meetings, top management shall review these objectives and targets at planned intervals as described in ISO 14001:2004 clause 4.6.

EN18:4.3.3; 4.5.1

The reporting company should report initiatives to reduce green house gasses. When reporting on these initiatives a company can use the set and reviewed objectives and targets, which include their commitments to prevention of pollution. As previously mentioned, objectives and targets should be measurable (where practicable); therefore reduction targets should be measured and recorded as required by ISO 14001:2004, 4.5.1, monitoring and measurement. Data to be reported on this environmental indicator can be obtained from the records of the monitoring and measurement done to ensure that their environmental impacts are mitigated as effectively as possible.

EN23:4.5.1; 4.5.2; 4.5.3

When reporting on the total number and volume of significant spills, a company can obtain this information from the monitoring and measurement records as required by the ISO 14001:2004 clause 4.5.1. This indicator also serves as an indirect measure for evaluating the monitoring skills of the organisation. The systematic attempt to avoid hazardous material is directly linked to the organisation's compliance with regulations. ISO 14001:2004, clause 4.5.2 requires that a company should ensure commitment to compliance with applicable legal requirements. When environmental incidents do occur, the reporting company can report on this by extracting data and internal records form the environmental incident reports. These environmental incidents or non-conformities should be identified and actions taken to avoid recurrence as required by ISO 14001:2004, clause 4.5.3.

EN29: 4.3.1; 4.5.3; 4.3.2

A company that does report on their environmental performance should assess the impacts of their transporting their products, goods and material as well as transporting members of the company's workforce. Information and data can be derived from the environmental department. When having and EMS in place, a company should readily have monitoring and measurement records available as required by clause 4.5.1 of the ISO 14001:2004 standard. This measurement records shall include vehicle usage and maintenance records. By obtaining these data a company can now have certain strategies in place to mitigate their environmental impact of the transportation system. ISO 14001:2004, clause 4.5.3 entails that a company should have procedures in place for dealing with actual as well as potential nonconformities and for taking corrective and preventive action. These actions taken shall be appropriate to the magnitude of the problems and the environmental impacts encountered. It is also important to keep in mind the legal aspects of transporting goods; in particular hazardous goods. The ISO 14001 clauses relevant in this case are 4.3.2, legal and other requirements.

Other GRI indicators that do not directly refer to EMS, but are relevant to the certain ISO 14001 clauses are the following:

EN1:4.3.3; 4.5.1

This indicator, EN1, describes the reporting company's contribution to the conservation of the global resources base and efforts to reduce the material intensity. For a company to be able to reduce the material intensity, effective measurement should be done to monitor their material efficiency as described in ISO 14001:2004, clause 4.5.1. A company can hence set targets to reduce their material intensity, keeping in mind that these targets shall be measurable as required by clause 4.3.3 in the EMS standard.

EN2:4.3.3; 4.5.1

EN2 seeks to identify the reporting company's ability to use recycled materials. By using recycled materials, the company helps to reduce the demand for virgin material and therefore contribute to the conservation of the global resource base. This can be set as a target that needs to be achieved over a certain period, by consistently measuring the use of this material to ensure the reducing of demand do occur and subsequently achieve goals and targets, as required by clause 4.5.1.

EN3-EN7:4.5.1; 4.3.3

For a company to successfully report on their energy used, reduced and saved, as set out in environmental performance indicators EN3-EN7, under energy, the reporting company should be able to report their calculated energy figures as obtained form their monitoring and measurement records. As required by the EMS, clause 4.5.1 a company should, on a regular basis, monitor and measure the key characteristics, in this case energy, which can have an impact on the environment. To be able to reduce the reporting company's energy consumption, they should have certain objectives and targets in place to reduce e.g. energy as required by ISO 14001, clause 4.3.3.

EN8-EN10:4.5.1

As described above, the reporting company can obtain their water figures and data by using information generated from their EMS. By measuring the water use, recycled and re-used, a company can ensure the reduction in demand by regular monitoring and measurement.

EN11:4.1; 4.5.1

By reporting on the potential impact on land that lies within, contains, or is bordering to legally protected areas, including areas of high biodiversity value outside this protected areas, a company can identify and manage certain risks associated with biodiversity. When having an EMS in place, a company has to define and document the scope of its environmental management system, as set out in the ISO 14001:2004 standard under clause 4.1. Therefore protecting and mitigating risks in areas as described in the scope. To avoid any mismanagement, the reporting company should have certain action plans, e.g. EMP's in place to reduce and mitigate their significant impacts on these protected areas as described before. EMP's are usually already developed as part of the reporting company's EMS, referring to clause 4.5.1, objectives, targets and programmes.

EN15:4.1

This indicator helps the reporting company to identify where its activities can pose a threat to endangered animal and plant species. As mentioned earlier, when a company does have an EMS in place, a scope has already been identified under clause 4.1 of the ISO 14001:2004 standard.

EN16, 17, 19, 20, 21, 22 & 24:4.5.1; 4.3.3

When reporting on emissions, effluents and waste, certain monitoring and measurement procedures should be in place to generate information for the reporting company's sustainability report. The environmental department of the reporting company should have records of this measurement taken to mitigate any risks associated with emissions, effluents and waste, as

required by ISO 14001 clause 4.5.1, and targets should be set to reduce these factors (Clause 4.3.3).

EN25:4.1

Discharges of water and runoff that can affect the aquatic habitat can have a significant impact on the availability of water resources. By identifying water bodies that are affected by these discharges, provide an opportunity to identify activities in regions of significant concern. By having an EMS in place, a company will already have these affected water resources included in the scope of the EMS and will be mitigating the risks of discharges water and run-off.

EN26:4.3.1

Companies are expected to take more proactive approaches to assess and improve their environmental impacts of their products and services. To be able to do these assessments, a company should, according to ISO 14001:2004 clause 4.3.1, have an aspect and impact register in place to identify aspects of its activities, products and services within the defined scope that might have an impact on the environment. This can be done by taking into account new or modified activities when stimulating innovation in technology as described by the Sustainability Reporting Guidelines, more specifically EN26.

EN27: 4.3.3; 4.5.1

The disposal of packaging materials and products at the end of their use phase is an increasing environmental challenge. Effective recycling and reuse systems should be in place to mitigate these problems. These aspects can be set as targets, as indicated by ISO 14001:2004 clause 4.5.1, and initiatives can be put affront to recycle and reuse this type of materials.

EN28:4.3.2

The reporting company needs to ensure that their operations do conform to certain performance parameters. By ensuring compliance, the company reduces their financial risks directly though fines. In some situations, non-compliance can lead to clean-up obligations or other environmental liabilities. The strength of the company's compliance record can also affect its ability to expand operations or gain permits. By having a legal register in place as required by the EMS (clause 4.3.2), the company shall ensure that applicable legal and other requirements to which the company subscribes are taken into account.

EN30:4.4.1; 4.6

Measuring a company's environmental mitigation and protection expenditures allows a company to assess the efficiency of their environmental initiatives. In order to do so a company's management shall ensure the availability of recourses that is essential to establish, implement, maintain and improve the EMS. Resources as described in clause 4.4.1 of the ISO 14001:2004 standard includes human resources and specialised skills, organisational infrastructure, technology and specifically in this case, financial resources. During the top management's management review meetings, as explained in clause 4.6, Management Review, these resource needs shall be reviewed and assessed.

CHAPTER 4
SRI index companies and EMS

4.1 Introduction

The Johannesburg Stock Exchange came into existence to provide a market place for the shares of South Africa's many financial and mining companies. The discovery of the Witwatersrand goldfields in 1886 and the subsequent formation of mining and financial companies meant that investors needed a facility through which to buy and sell shares. Benjamin Woollan provided that facility when he founded the JSE in November 1887. (McGregor BFA:2008).

The Johannesburg Stock Exchange (JSE) is licensed as an exchange under the Securities Services Acts, 2004 and Africa's premier exchange. It has operated as a market place for the trading of financial products for nearly 120 years. During this time, the JSE has evolved in from a traditional floor based equities trading market to a modern securities exchanged providing fully electronic trading, clearing and settlement in equities, financials and agricultural derivates and other associated instruments and has extensive surveillance capabilities (JSE limited:2008).

The JSE's Socially Responsible Investment (SRI) Index was launched in May 2004 in response to the growing debate around sustainability globally and particularly in South Africa. The SRI Index was a pioneering initiative. It was the first of its kind in an up-and-coming market, as well as the first to be launched by an exchange, and has been a driver for increased attention to responsible investment into emerging markets like South Africa (JSE Limited:2008). The SRI coalition sent a transparent signal that companies should base their reporting on the Global Reporting Initiative Sustainability Reporting Guidelines (Lippman, 2004: 6).

The eligible universe for the Social Responsibility Investment Index is the FTSE/JSE All Share Index. Companies are therefore firstly subject to the ground rules of the FTSE/JSE Africa Index Series. In terms of the Ground Rules to the SRI Index, qualifying companies are assessed against the increasingly stringent criteria on the triple bottom line and commitment in four areas, including corporate governance, economy, society and environment on an annual basis (Altech:2005). At each annual review, the participating companies have to meet the requisites threshold as specified in the criteria to qualify for inclusion in the SRI Index. (JSE Limited: 2008).

Global trend towards companies and their investors who adopted the principles of sustainability recognised that the commitment to sustainability reduced business risk. There is also a strong relationship between long-term and shareholder value sustainability (Fin24:2004).

Currently it is not just about the traditional financial statements for the "information for decision-making" market but non-financial assurance services are also starting to play a big role in stakeholder decision-making. Major developments in information technology and globalisation are some of the significant drivers of market needs. The assurance on sustainability is an important driver for the demand for legal requirements to report on environmental issues in several countries. The objective of an assurance engagement is to evaluate or measure the subject matter which includes data, systems and processes, that is the responsibility of another party or management against identified suitable criteria and to express a conclusion that provides the intended user with a level of assurance about the subject matter (Wallage, 2000:53-54).

The subject matter of an assurance engagement consists of data, systems and processes, including behaviour. A sustainability report usually contains economic, social and environmental performance data. This type of report also provides an insight into the company's ethical behaviour. It is important to keep in mind that sustainability reporting is not only a matter of disclosure, but also an essential element of the process of communication between the company and key stakeholders. It is a vital element in the communication, discussion, learning and the decision-making process and provides an opportunity for stakeholders to see whether their concerns have been addressed (Wallage, 2000:53-54).

There are no established criteria for sustainability reporting as a whole yet. There are, however a number of existing standards that may be considered when preparing or assuring sustainability report. This includes:

- SA8000 standards for social accountability towards employees,
- International Labor Organization (ILO) conventions for social accountability towards employees,
- World Business Council for Sustainable Development (WBCSD) social and eco-efficiency indicators,
- European Union Eco-Management and Audit Scheme (EMAS) standard for environmental management systems,
- ISO 14001 standard for environmental management systems,
- FEE Framework for Environmental Reporting, and
- Global Reporting Initiative (GRI) standards for sustainability reporting.

The GRI standards are currently the most comprehensive document available. GRI strives to develop generally accepted standards for sustainability reporting (Wallage, 2000:556-57).

After completion of the assurance of a company's sustainability report, the auditor needs to express a conclusion that provides a level of assurance as to whether the subject matter conforms in all material respects with the identified suitable criteria (Wallage, 2000:62).

4.2 Methodology

The SRI Index Constituent for 2007 has been drawn from the JSE Limited Website. Each of the Constituents' annual or sustainability report has been evaluated to determine how many of these companies do have an EMS in place and if assurance on their sustainability report has been done. A number of companies publish a separate sustainability report and others report on the triple bottom line through their annual report. A large group of companies only get their financial statements audited by independent auditors. There is currently still a substantial amount of companies that do not get their sustainability report, e.g. environmental data, assured. A table had been drawn up to reflect the outcome of this evaluation. This table only illustrate the auditors who assure the reporting company's GRI in the sustainability or annual report, in other words, not the financial statements. See results in table 2 below.

4.3 Results

Table 2: SRI Index Constituent's information as at September 2008:

Yr	SRI Index Constituents	EMS	Auditors	SD Report	Annual Report
'07	ABSA Group Limited	✓	-	♦	
'07	AdvTech Limited	X	-		♦
'07	African Bank Investments Limited	X	-		♦
'07	African Oxygen Limited	✓	-		♦
'07	African Rainbow Minerals	✓	-		♦
'08	Allied Electronics Corporation Limited	✓	-	♦	
'07	Allied Technologies Limited	✓	PCF (JHB) Inc	♦	
'07	Anglo American plc	✓	PricewaterhouseCoopers	♦	
'07	Anglo Platinum Limited	✓	PricewaterhouseCoopers	♦	
'07	AngloGold Ashanti Limited	✓	PricewaterhouseCoopers	♦	
'07	Arcelor Mittal South Africa	✓	-	♦	
'07	Aveng Limited	✓	-		♦
'07	Barloworld Limited	✓	Deloitte & Touche	♦	
'07	BHP Billiton plc	✓	-	♦	
'07	The Bidvest Group Limited	X	Triologue Assurance Services (TAS)	♦	
'07	Brait S.A.	X	-		♦
'07	Bytes Technology Group Limited	X	KPMG		
'07	Discovery Holdings Limited	X	-		♦
'07	Exxaro Resources Limited	✓	-		♦
'07	Firstrand Limited	✓	-		♦
'07	Gold Fields Limited	✓	-		♦
'07	Grindrod Limited	✓	-		♦
'08	Group Five Limited	✓	-		♦
'07	Harmony Gold Mining Limited	X	-	♦	
'07	Highveld Steel and Vanadium Corporation Limited	✓	-		♦
'07	Illovo Sugar Limited	✓	-		♦
'08	Impala Platinum Holdings Limited	✓	Triologue Assurance Services (TAS)	♦	

Yr	SRI Index Constituents	EMS	Auditors	SD Report	Annual Report
'08	Investec Limited and Investec plc	X	-		♦
'07	JSE Limited	X	-		♦
'07	Kumba Iron Ore	✓	PricewaterhouseCoopers		♦
'07	Liberty Group Limited	X	Ernst & Young	♦	
'07	Liberty International plc	X	-		♦
'07	Lonmin	✓	KPMG	♦	
'07	Massmart Holdings Limited	X	-		♦
'08	Medi-Clinic Corporation Limited	✓	-		♦
'07	Merafe Resources Limited	✓	-		
'07	Metropolitan Holdings Limited	X	-		
'07	Mondi	✓	Environmental Resource Management (ERM)	♦	
'07	MTN Group Limited	✓	-		♦
'07	Murray & Roberts Holdings Limited	✓	-		♦
'07	Nedbank Group Limited	✓	Ernst & Young	♦	
'07	Network Healthcare Holdings Limited	X	-		♦
'08	Northam Platinum Limited	✓	PricewaterhouseCoopers	♦	
'07	Oceana Group Limited	X	-		♦
'07	Old Mutual plc	✓	-		♦
'07	Pick n Pay Holdings Limited	X	-		♦
'07	Pretoria Portland Cement Company Limited	✓	-		♦
'08	Remgro Limited	✓	-		♦
'08	SAB Miller plc	✓	Corporate Citizenship	♦	
'07	Sanlam Limited	X	-		♦
'07	Santam Limited	X	-	♦	
'07	Sappi Limited	✓	-		♦
'07	Sasol Limited	✓	KPMG	♦	
'07	Standard Bank Group Limited	X	-		♦
'08	Telkom SA Limited	✓	-		♦
'07	Tongaat Hulett	✓	-		♦

Yr	SRI Index Constituents	EMS	Auditors	SD Report	Annual Report
'07	Woolworths Holdings Limited	X	-	♦	

4.4 Discussion and Interpretation

The most recent annual reports available, mostly the 2007 reports, of the companies currently on the SRI Index have been evaluated to determine to what extent these companies do have an EMS in place and how many of these annual reports or sustainability reports have been assured by an independent audit firm.

After evaluating the most recent annual reports of the 57 companies that are included in the SRI Index Constituents in South Africa, it has been discovered that 65% of these companies do have an EMS in place. Most of these companies' environmental management system has been certified by a certification body or are currently in process of certification.

Of the 57 SRI Index Constituents mentioned above, only 28% assure their sustainability report by an independent audit firm. This type of auditing excludes financial statements. After the sustainability report has been audited, the independent auditor needs to express a conclusion that provides a level of assurance whether the subject matter, that consists of data, systems and processes, conforms in all material respects with the identified suitable criteria. Companies that are going the route of getting their sustainability report assured give their stakeholders and readers more comfort when certain decisions need to be made, especially when investing money in this company are an issue.

The question now arising is that if these above mentioned 57 companies in fact do use their data from their environmental management system to be able to compile their sustainability report or are they looking for these data and information in the wrong places.

CHAPTER 5
Are data from EMS used in Sustainability Reporting? Case study

5.1 Introduction

Companies that are currently listed on the JSE (http://jse.co.za/listed_companies.jsp) do either publish an annual financial report or a stand-alone sustainability report to communicate on their triple-bottom line as discussed in Chapter 4. Some companies refer to their sustainability report as a Report to Society or a Sustainable Development Report.

The GRI standard can be used as a framework, when writing a sustainability report. The GRI standard is a very comprehensive document and strives to develop generally accepted standards for sustainability reporting (Wallage, 2000:62).

A few companies listed on the JSE also have an environmental management system (ISO 14001) in place. By implementing an EMS, a company potentially reduces and manages their significant impacts on the environment. The aim of ISO 14001 is to drive environmental improvements throughout a systematic and organised approach to environmental management (Woodside, *et al.*, 1999: ix).

An EMS and a sustainability report are essentially a management control and a reporting tool respectively. The hypothesis is that while compiling the sustainability report, companies often struggle to obtain the necessary information. This chapter strives to determine whether companies that do have an EMS in place, use the data gathered for the EMS when compiling their sustainability report.

5.2 Methodology

The 2007 sustainability reports of two randomly selected companies have been downloaded from their respective websites. Both companies did have at the time of the evaluation an environmental management system in place and were listed on the JSE SRI Index.

The environmental section of the respective companies' sustainability reports have been evaluated and analysed to establish what type of environmental data has been reported. Interviews were held with the two companies' Environmental Managers to determine whether the source of the published environmental data was from their EMS or not. Due to confidentiality as agreed with the companies, no company names, interviewees or telephone numbers can be disclosed. Case studies published in the reports were excluded from this study.

Tables have been drawn up for the different companies under review to indicate what environmental data has been published as well as if the source of the data is from their EMS (see Tables 3 and 4).

5.3 Results

The following results have been obtained during the evaluation of the individual published reports and interviews conducted with the respective environmental managers:

Company A:

Company A is a multi-site company in the chemical manufacturing industry with approximately 4300 employees in Africa. This company has been selected by the JSE Securities Exchange as one of the companies to make up the prestigious Socially Responsible Investment (SRI) index.

An interview has been conducted with the Environmental Manager to determine the source of their published environmental data and whether their certified environmental management system plays an essential role in their reporting process. Company A currently runs an integrated Safety, Health, Environmental and Quality (SHEQ) Management system and chooses not to run any management system in isolation.

Company A used the previous version (version 2) of the GRI Sustainability Reporting Guidelines and not the GRI guidelines that was launched in October 2006 in writing their annual report. This can be identified in the table below.

Table 3: Company A: Source of data for report writing

Environmental Performance Indicators (GRI)		**Subject matter in report**	**Source of data as confirmed by interviewee**
EN1	Total materials use other than water.	Raw material consumption: Raw materials used during manufacturing that has been reported on includes; calcium carbide, ammonium nitrate, iron rod, acetylene cylinder porous mass, flux powders, metal, chemicals, oil and acetone.	Raw material data, including calcium carbide, ammonium nitrate, iron rod, acetylene cylinder porous mass, flux powders, metal, chemicals, oil and acetone, are derived from SAP (System Analysis and Program Development). This data is extracted from SAP and used in the reporting of the raw materials consumption. This procedure is described in

Environmental Performance Indicators (GRI)		Subject matter in report	Source of data as confirmed by interviewee
			Company A's SHEQ integrated management system on the intranet that is available to all employees.
EN2	Percentage of materials used that are wastes from sources external to the reporting organisation.	Waste statistics have been reported and the following waste type data is included in the report: waste acetone, trichloroethylene, activated carbon, flux residues, asbestos containing waste, and pickling plant waste.	Data is generated from the waste inventory and waste disposal documents. All the sites measure and monitor their own waste and report back to head office for reporting. All the waste documents are part of the EMS and documented in the SHEQ integrated management system.
EN3	Direct energy use segmented by primary use.	Electricity consumption is identified as the primary source of electricity. Company A purchased approximately 720 662 megawatt hours of electricity as discussed in their annual report.	Electricity purchased and consumption is monitored by each site by means of inspecting the municipal account stating the amount of electricity used by the company for the month. This electricity data is monitored to determine any trends and deviations in electricity consumption. Company A does have a procedure in place as part of their EMS on the monitoring of electricity (energy) consumption in the SHEQ integrated management system.
EN4	Indirect energy use.	Company A purchases LPG from the petrochemical industry and uses approximately 99 megawatt hours of LPG annually. LPG is not currently evaluated.	NA
EN5	Total water use.	In 2007, approximately 1, 90 x $10^6 m^3$ of water was used for manufacturing purposes.	Water monitoring in Company A is mandatory and is part of the procedures in the EMS. Their EMS internal audit checklist specifically indicates the monitoring of water consumption.
EN6	Location and size of land owned, leased or managed in biodiversity-rich habitats	Management controls and plans are in place to ensure that manufacturing activities do not contribute towards polluting these areas.	Management plans are in place to ensure that all areas are not polluted due to manufacturing activities. Pollution prevention is also

Environmental Performance Indicators (GRI)		Subject matter in report	Source of data as confirmed by interviewee
			part of their objectives and targets as identified in their EMS and SHEQ integrated management system.
EN7	Description of the major impacts on biodiversity associated with activities and/or products and services in terrestrial, freshwater and marine environments.	Environmental impact assessment is performed before any new project is commissioned. No negative impacts associated with their activities or products have been identified as yet.	Any negative impacts associated with their activities or products are obtained from their incident reports and no incidents occurred so far that might have a negative influence on the environment regarding the commissioning of a new product or activity. Where the record of decision (ROD) should require it, a management plan shall exist to mitigate any negative impacts, but according to company A their whole management system is a management plan. This incident reports are part of the EMS system and also described as an EMS procedure in company A.
EN8	Greenhouse gas emissions.	Up to date, Company A has not accurately quantified greenhouse gas.	NA
EN9	Use and emissions of ozone depleting substances	Company A minimises product risk by the responsible care of their products throughout their life cycle. CFC usage has been reduced over the years. Company A complies with environmental legislation and replaces CFCs with interim replacement refrigerants (HCFCs) and with hydrofluorocarbons (HFCs), which contain no chlorine and have zero ozone depletion potential.	Management plans are in place to minimise their product risk and are described as procedures in their EMS in the SHEQ Integrated Management System.
EN10	NOx, SOx and other significant air emissions.	Company A does not produce NOx and SOx as waste product in any production process.	NA
EN11	Total amount of waste by type and destination.	Waste management programmes have been implemented. Improved storage facilities, more effective waste	All the waste management programmes are part of their EMS system as a monitoring and measurement procedure.

Environmental Performance Indicators (GRI)		Subject matter in report	Source of data as confirmed by interviewee
		separation, recycling and disposal procedures are currently in place.	These procedures are available in their SHEQ Integrated Management System and get audited by the third party certification body.
EN12	Discharges to water by type.	Process effluents are monitored by plants and discharged to municipal sewer systems via permits from local authorities. No industrial effluent is discharged to water resources.	Monitoring of water is an important factor in Company A and is described in the EMS system. The monitoring of water is also audited by internal and third party audit teams as part of their EMS.
EN13	Spills of chemicals, oils and fuels.	No major spills were reported as discussed in the annual report.	Any incidents occurred are reported on the major incident report. If a major incident should occur, it will be raised as a non-conformance and action will be taken as described in their EMS process. This procedure is described in the SHEQ Integrated Management System.
EN14	Environment impacts of products.	Atmospheric gases from their air separation units have a minimal impact on the environment. Air separation units use water, energy and oil. Company A have improved energy efficiency of these units through equipment design, maintenance and efficient operating practices.	Internal and external audits relevant to the EMS identify the company's performance and verify any improvement programmes. Programmes are put in place to ensure improvement does take place as identified in the audits.
EN15	Percentage of product weight reclaimable.	Waste statistics are reported in the annual report.	Waste is managed by a waste inventory and waste disposal documents as monitored by all sites. This procedure is described as part of the EMS system.
EN16	Fines for non-compliance.	No fines were levied for non-compliance with environmental issues.	NA
EN17	Initiatives to use renewable energy sources or increase energy efficiency	The primary source of energy is electricity and Company A purchases 720 x 661, 6 megawatt hours annually. Other sources of energy include gas, diesel and petrol. No initiatives to EN18 Energy consumption of major products	Electricity purchased and consumption is monitored by each site by inspecting the municipal account stating the amount of electricity used for the month. This data is monitored to determine
EN18	Energy consumption of major products		

Environmental Performance Indicators (GRI)		Subject matter in report	Source of data as confirmed by interviewee
		use renewable energy resources.	any trends and deviations in electricity consumption. Company A does have a procedure in place as part of their EMS on the monitoring of electricity (energy) consumption.
EN19	Other indirect energy use	Company A purchases LPG from the petrochemical industry and packages the gas for distribution and sale for industrial or domestic applications. The energy used for the delivery of LPG is not currently evaluated.	NA
EN20	Water sources and related ecosystems/ habitats affected by water.	1, 9 x $10^6 m^3$ of water p.a. is used for manufacturing and office purposes. Water is obtained from municipal or regional utilities. Water sources and related ecosystems are not affected nor is any ground or surface water withdrawn. Secondary flow metres monitor water consumption of processes like dissolved acetylene production and the hydrostatic testing of cylinders.	Water monitoring in Company A is mandatory and is part of the procedures in the EMS. Their internal audit checklist specifically indicates the monitoring of water consumption and is also audited by the third party certification body during the EMS surveillance audits.
EN21	Ground and surface water withdrawals.	None withdrawn – see EN20.	NA
EN22	Recycling and use of water.	Some acetylene plants re-circulate the water used in the generator after separation from the lime (carbide sludge). Cooling water in air separation units is recycled.	The recycling and use of water is a procedure that is also described in the SHEQ Integrated Management System as an EMS procedure.
EN23	Land owned, leased or managed.	Location of land owned, leased, managed in or adjacent to protected areas and areas of high biodiversity value outside protected areas are described in the report.	This information is obtained from the EMS or the SHEQ Integrated Management System.
EN24	Impermeable surface land owned.	Not assessed.	NA
EN25	Impact on protected or sensitive areas.	No negative impacts associated with Company A's activities/products have been identified.	This information is not part of the EMS procedures.
EN26	Changes to natural habitats and percentage protected/restored.	Not assessed.	NA
EN27	Restoring ecosystems.	Not assessed.	NA

Environmental Performance Indicators (GRI)		Subject matter in report	Source of data as confirmed by interviewee
EN28	IUCN red list species on operating areas.	Not assessed.	NA
EN29	Operations in protected or sensitive areas.	The business units are primarily located in industrial areas.	NA
EN30	Indirect greenhouse gas emissions.	Refer to EN9 and EN8.	NA
EN31	Hazardous waste.	Refer to EN11.	NA
EN32	Water sources affected by discharges.	Production sites are in industrial areas and have a low risk impact on ground water below the sites and no effect on protected areas, fresh water or marine environments.	All impacts or potential impacts on the environment are included in the risk registers that form part of the EMS.
EN33	Supplier performance regarding the environment.	Environmental performance of suppliers is evaluated when contracts are negotiated using a Supplier Evaluation Selection and Performance Appraisal (SESPA) process. SESPA is the Group standard worldwide for supplier selection, and includes safety and environmental performance.	Does not form part of the EMS procedures and standards of Company A. This procedure is part of the Group standards.
EN34	Environmental impacts of transportation used.	Company A's transport fleet is serviced regularly to ensure limited emissions, noise and economic fuel consumption. Fuel is supplied by Caltex and stored in Caltex underground storage tanks on some of their premises. Tyres and batteries are returned to the manufacturers for recycling.	SHEQ risk assessments are conducted and are included in the SHEQ registers (aspect and impact registers). Company A does have maintenance schedules in place to ensure that all vehicles' emissions are reduced. This vehicle maintenance plans are audited during the third party EMS surveillance audits.
EN35	Environmental expenditure.	R3 692 109 spent on environmental improvement projects.	Environmental improvement forms part of the EMS and all progress on improvements are discussed at Management Review meetings.

Company B:

Company B is part of an international group manufacturing a diverse range of steel products and consists of approximately 7000 employees in the group. This company is listed on the JSE Securities Exchange as one of the companies to make up the Socially Responsible Investment (SRI) index.

An interview was conducted with the Environmental Manager to determine the source of their published environmental data and if their certified environmental management system does play any role in their reporting process.

Company B does publish a separate sustainability report but did not, like Company A, include the Global Reporting Initiative Performance Indicator Table in their report. This table can be described as a concise list of all performance indicators that are reported on and enables the reader to easily locate the relevant information in the report.

For this study Company B's sustainability report has been analysed to determine whether they used their EMS to source environmental data for their sustainability report. The following data were obtained from analyses and discussions with the Environmental Manager of Company B:

Table 4: Company B: Source of data for report writing

No	Subject matter in the SD report	Source of data
1	Targets of 2007 are included in the report. These targets include water consumption, total energy consumption, greenhouse gas emissions, reducing process waste to landfill and new acquisition to achieve certification.	Targets included in the Sustainable Development report were Group targets and were delegated to the sites, including Company B. Company B only included these targets on a high level in the EMS.
2	*Energy*: Company B's energy consumption decreased from 11.01 GJ/tonne in 2006 to 11.00 GJ/tonne in 2007.	The measurement of the energy consumption was captured in a spreadsheet and drawn into the Group SHE database, as per the Group requirements, and where relevant, the environmental issues were discussed at weekly meetings. However, according to the Environmental Manager, Company B did not consider energy consumption data to form an integral part of their ISO 14001 system.

2	*Electricity:* The group achieved a consumption of 0.80 MWh/tonne versus 2006's performance of 0.79 MWh/tonne.	Data was collected in the same way as for energy consumption and was not part of the EMS.
3	*Gas consumption:* The group achieved a reduction in natural gas consumption from 44.5 m^3/tonne reported in 2006 to 42.11 m^3/tonne in 2007.	Data was collected in the same way as for energy consumption and electricity use. This forms not part of the EMS.
4	*Emissions*: Particulate emissions are monitored continuously on the relevant stacks and by means of dust fallout sampling (dust buckets placed in strategic locations). Greenhouse gas emissions: The emissions target of 1.16 tonnes/tonne was achieved with 1.12 tonnes/tonne.	Monitoring of dust fallout is outsourced to external consultants. Data received from the consultants were loaded into IsoMetrix (Integrated Management System Software and Solutions). Particulate emissions data was collected and monitored because Company B is located near a residential area. Monitoring of this data is also a permit requirement. Greenhouse gas emissions data was loaded in the SHE database but was not specifically monitored. The emissions data was not included in Company B's EMS.
5	*Carbon dioxide emissions*: The total CO_2 equivalent emissions (tonnes CO_2eq) increased from 1,747,393 in 2006 to 1,761,996 in 2007.	Data was loaded into the Group SHE database. The amount of CO_2 emissions were calculated from the diesel, electricity and coal consumption. This data was not relevant to any EMS procedures or monitoring and measurement plans.
6	*Sulphur dioxide emissions*: The total SO_2 emissions increased from 3429 tonnes in 2006 to 3489 tonnes in 2007.	Data was handled the same way as with the carbon dioxide emissions above.
7	*Water consumption*: Water used for primary activities (1000 m^3) increased from 2181 in 2006 to 2193 in 2007.	Metres were installed on site and readings were taken on a weekly basis and loaded into the Group SHE database. Data was extracted from this database to include in the Sustainability Report. The Group SHE

		database is completely separate from Company B's EMS.
8	*Water management indicators*: Surface water quality, groundwater quality and water use monitoring are conducted routinely.	Data on water quality was collected because it is considered 'best practice', the site is very close to a residential area and because it is requested from head office. This data is not collected or monitored because it is a requirement of ISO 14001, as discussed with and confirmed by the Environmental Manager.

5.4 Discussion and Interpretation

During this study, two companies, currently listed on the JSE and with an EMS in place, were selected. Both the selected companies' sustainability reports were reviewed to determine whether the environmental section of the sustainability report (or annual report) consisted of data derived from their ISO 14001:2004 management system.

The chemical manufacturing company (Company A) under review is currently publishing only an annual report consisting of the triple bottom line information, which includes financial, society and environmental information. No separate sustainability report is published as yet. As discussed with the Environmental Manager of Company A, it is evident that they are constantly seeking ways on how to improve on their data collection and reporting system as required by the GRI Guidelines. Company A will in future be using an administration software tool to assist with the compilation and submission of all data, including environmental data. This software programme will be used to extract essential environmental data and produce an environmental or sustainability report. The reports will therefore be more accurate and data will be effortlessly retrieved.

Currently Company A only reports their environmental information on a high level in the annual report. However, stakeholders and investors demand more information regarding certain key performance indicators. For example, in future water attributes will be reported as potable water, raw water and process water respectively. The use of this new software tool will ensure that environmental data is reported more accurately and comprehensively. The challenge is deciding on how much of this data to incorporate in the report, as the potential exists to publish too much data. Therefore a decision has been made to publish a sustainability report in addition to their annual report.

Company A uses their ISO 14001 management system to gather data and information and as confirmed by the Environmental Manager this plays an extremely important role in their sustainability reporting. All procedures and work instructions for their entire operation are written with the requirements of ISO 14001 in mind. Environmental data is gathered and reported on because the company strives to improve and reduce their environmental impacts, to identify new environmental projects that will potentially reduce their environmental impacts, and not just because it is the 'right thing to do'. It is clear that information and data used in the environmental section of the annual report are derived from the company's SHEQ Integrated Management System that forms part of their EMS. Company A is completely reliant on their EMS for the reporting of their environmental data in the annual report and throughout the report EMS data could be identified. As per discussions with the Environmental Manager, they will not be able to publish a report without information and data from their EMS.

Company B manufactures a diverse range of steel products and is publishing a separate sustainability report. They do have an EMS in place and have been ISO 14001 certified for approximately four years. After reviewing Company B's sustainability report and after discussions with the Environmental Manager, a conclusion was made that Company B does not use any of their ISO 14001 data, (for example monitoring of water and energy) in their sustainability report. It has been confirmed by the Environmental Manager that their EMS is completely separated from the data collected for their sustainability report. Most of the data gathered for report writing purposes are from spreadsheets and internal SHE databases as prescribed by the Group guidelines set out to Company B. Therefore Company B is not dependent on their EMS for writing the environmental section in their annual report.

After analysing the respective companies' environmental data published in their report and interviews conducted with the respective Environmental Managers, it can be concluded that there are companies that do use the environmental data gathered for their EMS to a large extent when writing a sustainability report, while on the other hand there are also companies that isolate their sustainability report writing process from their EMS.

CHAPTER 6

6.1 Conclusions

All companies in South Africa should be important contributors in achieving a transition to sustainability. These companies do not only produce large portions of the goods and services associated with economic development, but they also consume large quantities of energy and materials as well as causing environmental degradation. Many of these companies have recognised their roles in achieving a sustainability transition. As a result these companies have initiated efforts to assess and report on their triple bottom line; which include the economic, social and environmental pillars. The results of the triple bottom line are published as annual or sustainability reports and can be seen as a communication tool to stakeholders and other interested parties. By publishing a sustainability report, the reporting company informs stakeholders of the organization's ability to manage their key risks. The GRI process was launched to develop guidelines to companies for reporting on the triple bottom line.

A number of these companies that do publish a sustainability report also have a formal Environmental Management System (ISO 14001) in place. The aim of the ISO 14001 standard is to drive environmental improvements throughout a systematic and organised approach to environmental management. By implementing ISO 14001, companies manage their significant environmental impacts.

The main focus of this study was to determine the extent of data generated by the ISO 14001:2004 EMS being used in the compilation of the environmental aspects of the GRI Report.

During the desktop review it was initially established that there is a marked similarity between the GRI indicators and the ISO 14001 clauses. By comparing the Sustainability Reporting Guidelines and the ISO 14001:2004 standard, it was possible to identify commonalities between the Environmental Performance Indicators, as published in the Sustainability Reporting Guidelines, and the corresponding ISO 14001 clauses. From this analysis it was deduced that ISO 14001 certified companies should base their sustainability reports on the ISO 14001 clauses and corresponding data.

Secondly, companies currently listed on the SRI index Constituents in South Africa have been evaluated to determine whether they have implemented an ISO 14001 Management System and if these companies have their sustainability report audited and assured by an independent auditor. It was found that 65% of these companies do have an EMS in place and that only 28% of the above mentioned companies have their sustainability report assured by an independent audit firm.

Thirdly, for the purpose of this mini-dissertation, two companies that are included by the JSE Securities Exchange as part of the SRI Constituents were selected to verify whether companies utilise data generated by their respective ISO 14001 Management System when compiling the environmental section of their GRI reports. Both the selected companies under review, namely Company A (a chemical manufacturing company) and Company B (a steel producing company), did have at the time of the study, an EMS in place and was also selected as part of the SRI index.

The selected companies' data published in their respective sustainability reports were analysed and discussions were held with their Environmental Managers to determine whether they did use their EMS data when writing their GRI reports. It was found that Company A was dependent on their EMS for gathering data on the environmental section of their annual GRI report. Company B on the other hand, did not make use of their EMS data when reporting on their environmental performance in the sustainability report. At company B, the EMS and GRI reporting are two different processes and are managed completely in isolation.

All the research objectives of this mini-dissertation as described in Chapter 1 were therefore achieved.

6.2 Recommendations

Based on the results, the following can be recommended:

- It is recommended that all companies should have their sustainability reports independently verified in order to enable stakeholders and other interested parties to make informed decisions, in particular when investing money in a company.

- In this study it was demonstrated that environmental data generated by an ISO 14001 Management System can and should be utilised by companies when compiling GRI reports. However, due to the limited scope of this mini-dissertation, the results obtained from the two companies that were included in the survey were inconclusive, with one company relying on their ISO 14001 data when compiling their GRI report, and the other company not. It is therefore recommended that a comprehensive follow-up study should be conducted, with a more representative sample of companies included in the analysis to establish the extent to which companies use their EMS data when writing their report - or if most companies use data gathered from sources other than their EMS.

- Due to the relation between the GRI indicators and the ISO 14001 clauses, the reporting process will be much easier, more accurate and less time-consuming if companies do

utilise their ISO 14001 generated data. By using the data from the EMS to write the sustainability report, data will be readily available and a great deal of time will be saved when compiling a report. Data obtained from the EMS is also reliable, since a certified ISO 14001 EMS gets audited annually by independent auditors.

- All companies should realise that independent assurance is a valuable part of reporting. It gives the stakeholder as well as other interested parties comfort in the subject matter of the report because the data published in the report is also audited by an independent verifier. By reporting on the triple bottom line, companies communicate their sustainability to stakeholders and indicate transparency and accountability. Just by publishing such a report, a company already conforms to one of the ISO 14001 clauses, namely; 4.4.3: communication (although it is still for the company to decide whether to communicate externally about its significant environmental aspects). If a company decides to communicate their environmental aspects externally, what better way is there than publishing a sustainability report? It is therefore further recommended that companies that do not use their ISO 14001 data when compiling their sustainability reports, be advised and trained accordingly in order to elevate the confidence of GRI reporting in South Africa.

CHAPTER 7
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