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The use of indicators in Canadian corporate sustainability reports

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THE USE OF INDICATORS IN CANADIAN CORPORATE SUSTAINABILITY REPORTS

BY

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Abstract

The Use of Indicators in Canadian Corporate Sustainability Reports

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Environmental Applied Science and Management, 2010

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The purpose of this thesis is to explore the use of sustainability indicators in Canadian corporate sustainability reports. The literature review highlights that few details are available on how indicators are currently used by corporations. To address this gap, this research focused on a content analysis of sustainability reports published by Canadian corporations in 2008. This thesis provides the first comprehensive review of indicators used in Canadian corporate sustainability reporting. Thematic categories of indicators, their use by industry sector and their associated targets are discussed. The use of existing sustainability indicators programs, such as composite indices, the GRI and the Balanced Scorecard, is also presented. The GRI indicators selected by Canadian corporations are also reviewed in detail. Finally, the way corporations report on the selection, development, and use of indicators in the management of sustainability issues is analysed.

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List of abbreviations

CI: Composite Indicators

CSPI: Composite Sustainability Performance Index

CSR: Corporate Social Responsibility

DJSI: Dow Jones Sustainability Index

DPSIR: Driving forces, Pressure, State, Impact, and Response

EMS: Environmental Management System

GHG: Greenhouse Gas

GRI: Global Reporting Initiative

H&S: Health and Safety

IISD: International Institute for Sustainable Development

LCA: Life Cycle Assessment

NGO: Nongovernmental Organisation

OECD: Organisation for Economic Co-operation and Development

OHSAS: Occupational Health and Safety Assessment Series

R&D: Research and Development

SDR: Sustainable Development Record

SFM: Sustainable Forest Management

TBL: Triple Bottom Line

UNSD: United Nations Division for Sustainable Development

UNGC: The United Nations Global Compact

WBCSD: World Business Council for Sustainable Development

WCED: World Commission on Environment and Development

1- Introduction

1.1- Overview

In this thesis, the use of sustainability indicators in Canadian corporate sustainability reports is analysed. A literature review was conducted to identify relevant contributions and provided relatively few examples of the actual use of sustainability indicators in corporations. Despite the wide range of articles and industrial sectors explored, very few details were found on how indicators are currently used in corporate decision making, education, benchmarking and other activities.

This research aims to explore how indicators are used in Canadian corporate sustainability reports. In particular, it will focus on identifying the sustainability indicators that are currently reported by Canadian corporations, determining the extent to which Canadian corporations are using existing sustainability indicators programs, exploring how these sustainability indicators are used in corporate decision making, education, benchmarking and other activities and determining if the use of sustainability indicators in Canadian corporations differs by industry.

To address these questions, a content analysis of Canadian corporate sustainability reports was conducted. In addition to a comprehensive database of indicators highlighted in the reports, this research provides insight into how Canadian sustainability reports present the use of sustainability indicators in corporate activities such as decision-making, audits, education and training, research and development, purchasing and supply chain management.

1.2- Problem statement

The most widely accepted definition of sustainable development was provided by the Brundtland Commission in 1987. In its report *Our Common Future*, sustainable development was defined as “meeting the needs of the present without compromising the ability of the future generations to meet their own needs” (WCED 1987). Usually, sustainability is defined by the three dimensions of economy, environment and society. The relative importance of these three pillars may depend on the context. Nevertheless, those three dimensions of sustainability are to be considered: there is no sustainability without economic prosperity, environmental durability and social or generational equity.

Since 1987, the term “sustainability” has been widely used by nations, nongovernmental organisations (NGOs), corporations and citizens striving to improve their economic, environmental and social performance. To reach this ambitious goal, there is a need to measure progress toward sustainability. This is the role of indicators. Sustainability indicators

have been designed to measure progress on economic, environmental, and social issues, taking into account their interrelated nature. National level indicators have been developed by the United Nations Commission for Sustainable Development, as prescribed by Agenda 21 in 1992, in order to monitor the sustainability policies of nations (UN Division for Sustainable Development, 2009). Regional level indicators have also been developed, such as Sustainable Seattle (1998). These regional sets of sustainability indicators are designed to compare regions, assess regional quality of life, monitor strategies, assist policy-making, and promote participation, partnerships and dialogue (Coehlo et al., 2010).

Corporations are increasingly reporting their sustainability initiatives and results via sets of indicators, with an emphasis on indicators suggested by the Global Reporting Initiative (GRI, 2009). While Canadian banks, insurance companies, trust and loan companies have to publish a public accountability statement (public accountability statement regulations, SOR/2002-133); sustainability reporting remains a voluntary initiative in most industries. Therefore, there are no defined requirements to develop and release sustainability reports and each corporation can select the information disclosed in its own report. This explains, in part, the wide variety of reports published by corporations. The voluntary nature of the publications also explains the high variability in the contents of sustainability reports and their equivalents.

The use of sustainability indicators at the corporate level remains largely unexplored. This is a significant gap. Although sustainability indicators are increasingly appearing in corporate sustainability reports, little is known about which indicators are reported at the corporate level and how they are used to make and support decisions, educate employees and stakeholders, or justify corporate actions and inactions. This thesis helps address this gap.

1.3- Purpose and research objectives

The purpose of this thesis is to explore the use of sustainability indicators in Canadian corporate sustainability reports.

The four research objectives of this thesis are:

1. to identify the sustainability indicators that are currently reported by Canadian corporations,
2. to determine to what extent Canadian corporations are using existing sustainability indicator programs,
3. to explore how these sustainability indicators are used in corporate decision making, education, benchmarking and other activities and
4. to determine if the use of sustainability indicators in Canadian corporations differs by industry.

These objectives will help address the central research question: "How are indicators

used in Canadian corporate sustainability reports?”

1.4- Scope

This research focused on Canadian corporations that published a sustainability report or equivalent in 2008. The term “or equivalent” refers to other corporate reports commonly associated with sustainability such as corporate social responsibility reports, corporate responsibility reports, accountability reports, citizenship reports or environmental reports. Annual reports were also included in the study. Both reports in English and in French were considered. Reports published by non-corporate organizations or not for profit corporations such as universities, coops, and credit unions were excluded.

1.5- Organization of the thesis

The thesis is organized into five remaining chapters. The next chapter contains a literature review exploring the existing definitions of sustainability, corporate sustainability, sustainability indicators and sustainability reporting. The literature review also provides insight into how sustainability indicators have been used at the corporate level, sector level and market level. The third chapter describes the research questions. The fourth chapter details the methods that were used to address the research questions: data collection and data analysis procedures are detailed along with the description of the sample. The fifth chapter highlights the findings of this research. A demographic analysis is provided, including the types of reports studied, the location of the corporations’ head office, the industry sectors, and the average length of reports. The database of indicators, the use of existing sustainability indicator programs and the use of sustainability indicators are discussed in the following subchapters. The identified differences between industry sectors are highlighted in each subsection. Finally, the sixth chapter provides conclusions and recommendations for further research.

2- Literature review

2.1- Introduction

The aim of this literature review is to report the state of the art concerning the use of sustainability indicators in corporations. With that in mind, the first section provides a definition of sustainability and its application to corporations. The second section defines indicators and indices, particularly those used to measure performance and sustainability at the corporate, sector or market levels. Particular emphasis is given to corporate sustainability indicators and their use in corporate decision making. The third section focuses on corporate sustainability reporting. The literature review focused on articles published in English since 1987 with an emphasis on the last decade.

2.2- Sustainability

In 1987, the report of the Brundtland Commission introduced a new approach to development, one which would simultaneously address environmental protection and economic prosperity (Dresner, 2002). The report also emphasized the need for inter- and intra-generational equity. Indeed, sustainable development was defined as development that “seeks to meet the need and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognizes that the problems of poverty and underdevelopment cannot be solved, unless we have a new era of growth in which developing countries play a large role and reap large benefits” (WCED, 1987). This definition led to widespread agreement on the three dimensions of sustainable development: environmental protection, economic performance and social justice. However, although this definition is widely accepted, debates continue on its interpretation and application. First, definitions of sustainability and sustainable development differ. Sustainability is often defined as being a state while sustainable development is often defined as being an ongoing process of development in a sustainable way (Bebbington, 2001). The latter is sometimes controversial. According to Dresner (2002), sustainability and development can be contradictory for some environmentalists. For example, Bebbington (2001) suggests that, “once basic needs are met, increased material consumption may not constitute ‘development’”. Furthermore, within the concept of sustainability, we can distinguish between the strong view of sustainability, where no non-renewable resources should be depleted, and the weak view of sustainability which allows a high degree of substitutability between resources (Dresner, 2002). Notwithstanding the discussion above, in this thesis the terms sustainability and sustainable development are used interchangeably. Indeed, from the corporate perspective, sustainability encompasses topics including economic growth and

business development.

Since 1987, the notion of sustainability has been integrated by the United Nations and by numerous countries into international and national development policies. It is in many ways seen as an obligation to future generations. Worldwide, in developed countries there has been an increasing public concern about environmental and social responsibilities. Though they may have different reasons, governments, citizens, and corporations are increasingly paying attention to sustainability issues.

2.2.1- Corporate sustainability

Corporations are a significant component of economic and social life. Ultimately, corporations must behave in accordance with public expectations of environmental and social awareness if they are to maintain a sufficient level of trust and reputation. According to Dunphy et al. (2007), corporations have evolved to reflect our consumption patterns over the past 50 years. However, as awareness of the environmental and social impacts of consumption patterns has increased, there has been a growing recognition that traditional corporate values emphasizing profit are not sustainable (Dunphy et al., 2007). Like the rest of society, corporations have to work to address this state. A comprehensive summary of this view is given by Blewitt (2008) who notes that corporations are part of the problem and part of the solution. In addition, Freeman (1984) demonstrates that organizations owe accountability not only to their shareholders but also to other interest groups, such as their customers, employees, suppliers and the community in which they are operating. This “stakeholder theory” is a foundation of corporate sustainability. As stated by Falck and Heblich (2007), the theory of stakeholders formalizes and categorizes challenges the company needs to meet if it wishes to pursue a long-term corporate strategy.

Indeed, as a part of larger society, corporations have a responsibility to contribute to overall social objectives. For example, the right to use energy and natural resources to produce goods and release waste should motivate corporations to be aware of and to decrease their environmental impact. Corporations should support rather than destroy the ecological and social fabrics we depend on (Dunphy et al., 2007). As Ehrenfeld (2005) explains, corporations have the intellectual and economic resources to launch sustainability actions and to lead these movements. This is reflected in the many voluntary corporate sustainability initiatives.

There are several definitions of corporate sustainability provided by the literature. The International Institute for Sustainable Development (IISD) defines corporate sustainable development as "adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining, and enhancing the human

and natural resources that will be needed in the future” (IISD, 1992). Another definition is given by Ray Anderson, CEO of Interface: “The heart of sustainability is found by making informed choices on all three fronts and gaining the knowledge to act in a way that doesn't jeopardize the future” (Interface, 2008). This definition is an application of the Bruntland definition of sustainability to corporate decision making processes.

A complete definition of corporate sustainability is given by Epstein (2008). Epstein highlights that corporations generally must address nine measurable principles of sustainability. Most of these principles can be attributed to at least one of the three pillars of sustainability, but some of them are broader. On the social aspects of sustainability, the principles detailed by Epstein (2008) include: the use of ethical standards and practices in the relationships with all stakeholders and the implementation of fair and humane employment practices. Epstein also describes the principle of governance, encompassing the conscientious management of resources and the importance of transparency in all communication. Governance and transparency are broader than just the social aspect of sustainability and these two principles are tightly linked to corporate responsibility. Another principle is community involvement and economic development. This is on the frontier between social and environmental aspects. Three of Epstein's corporate sustainability principles belong to the traditional business and economic aspect: financial return, the value of products and services and business relationships. These principles are also linked with corporate responsibility in the sense of respecting stakeholders, whether they are customers or shareholders. On the environmental aspect of sustainability, there is simply the principle of protection of the environment. Epstein describes this principle as being a commitment to “protect and restore the environment.” To follow this principle, many companies are minimizing their energy and natural resources consumption, decreasing their waste generation, reducing their emissions and are committed to go beyond environmental regulations. In addition, many companies are working with recycled material and producing recyclable products, are enhancing product durability and are reducing packaging. The idea in promoting these principles is that products, process, services and eventually other activities of the company will be designed to promote sustainable development.

In any case, corporate sustainability should apply the three pillars of sustainable development. The economic aspect is one which all corporations naturally deal with. Being economically sustainable is a primary objective of any corporation and the financial bottom line is a well established concept in business. In addition, the financial bottom line concept has been extended to the two other pillars of sustainability to create the expression “the triple bottom line” (Elkington, 1999). The three pillars of sustainable development are often referred to as the triple bottom line (TBL) in corporations. Of course, the way each corporation deals with these principles will depend on its own values.

According to Dunphy et al. (2007), the organizational structure within most corporations does not facilitate the implementation of a coherent sustainability strategy. Indeed environmental managers, human resources managers and business managers are often focusing on different areas, each one having their own objectives. As a result, sustainability issues may become in practice non priority themes. As emphasized by Ehrenfeld (2005), corporate sustainability actions consist often more in reducing unsustainability than really creating sustainability. This reduction of unsustainability is possible through a development of sense of responsibility in everyday choices. It is therefore critical a strong business case for sustainable development is presented within the corporation.

2.2.2- Corporate social responsibility

A common definition of Corporate Social Responsibility (CSR) is given by World Business Council for Sustainable Development (WBCSD, 2000a). CSR is “the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.” The core values of CSR include: human rights, employee rights, environmental protection, community involvement, supplier relations, monitoring, and stakeholder rights.

The main idea underlying CSR is that organizations must accept greater accountability for their actions. The need for accountability and the implementation of the core values make the concept of CSR closely related to the concept of corporate sustainability. As defined by Moon (2007), “CSR, including environmental responsibility, consists of corporate activities that reflect and address both the social imperatives for business success and the social consequences of business activity.” This implies that CSR is context specific. Referring to the natural-resource-based view of corporations, Moon (2007) demonstrates that “in order to sustain (...) competitive advantages, companies need to adopt a broader approach consistent with the features of new governance, transparency, stakeholder engagement and partnerships”.

In this context, the Global Compact (GC) initiated by the United Nations is a popular initiative that supports corporate commitments (Falck and Heblich, 2007). Since its launch on July 26, 2000, the GC has grown to more than 7700 participants, including over 5300 businesses in 130 countries around the world. (UNGCa, 2010). The UNGC participants are committed to align their strategies with better human rights, labour, environmental, and anti-corruption practices. Indeed, the Global Compact derived a set of ten rules from the Universal Declaration of Human Rights, the Fundamental Principles on Rights at Work from the International Labour Organisation, the Rio Declaration on Environment and Development, and The United Nations Convention Against Corruption (UNGCb, 2010). These rules are provided in Table 1. The other purpose of the UNGC is “the establishment of learning partnerships for a

sustainable world” (Perez-Batres et al., 2010). Indeed, the GC participants (companies, NGOs, governments, academic institutions, and other stakeholder groups) are invited to share their experiences regarding CSR implementation (Runharr and Lafferty, 2009).

Area	Principles
Human rights	<ul style="list-style-type: none"> • Businesses should support and respect the protection of internationally proclaimed human rights, • make sure that they are not complicit in human rights abuses.
Labour conditions	<ul style="list-style-type: none"> • Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; • the elimination of all forms of forced and compulsory labour; • the effective abolition of child labour; • the elimination of discrimination in respect of employment and occupation.
Environment	<ul style="list-style-type: none"> • Businesses should support a precautionary approach to environmental challenges; • undertake initiatives to promote greater environmental responsibility; • encourage the development and diffusion of environmentally friendly technologies
Anti-corruption	<ul style="list-style-type: none"> • Businesses should work against all forms of corruption, including extortion and bribery.

Table 1: The United Nations Global Compact 10 principles Source: www.unglobalcompact.org

Cetindamar and Husoy (2007) explain four of the motives to join the Global Compact. These motives were: to be part of sustainable development efforts, to be a good citizen, to improve corporate image, and to distinguish themselves from other companies. Regarding the impact of being a GC member, Cetindamar and Husoy (2007) note that “all companies indicate that being a UNGC participant completely influences their sustainable development efforts”. Despite fears from NGOs that companies would use the positive reputation of the United Nations to improve their own image without real actions, Runhaar and Laferty (2009) demonstrate that corporations become more familiar with CSR issues when participating in the GC.

Finally, corporations interested in CSR are guided by two widely accepted international standards, SA 8000 (Social Accountability International, 2009) and AA 1000 (AccountAbility, 2009). The International Organization for Standardization recently released a standard for “Social Responsibility”. ISO 26000 provides guidelines for Social Responsibility. This standard defines social responsibility as “responsibility of an organization for the impacts of its decisions and activities (including products, services and processes) on society and the environment, through transparent and ethical behaviour that: contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organization and practised in its relationships” (ISO 26000, 2010). It is interesting to note that this definition highlights the need to integrate social responsibility throughout the organisation.

2.2.3- The business case for sustainability actions and reporting

It has been noted many times in the last decade that corporations are moving to address the challenges of sustainability. This is due in a large part to a growing recognition of the close links between business success and sustainability. Indeed, there is a strong business case for corporate sustainability actions. Globalisation and information have been increasing public awareness on sustainability issues (Dunphy et al., 2007). This “networked society” is increasingly expecting more accountability from the public and private sectors. Citizens, consumers, employees and investors are expecting, in their daily decisions, to deal with more responsible corporate behaviours and more sustainable products. In this globalised business world, the reputation of corporations is a growing parameter of their success (Dunphy et al., 2007). In addition, the World Business Council for Sustainable Development (WBCSD, 2002) highlights that sustainable development initiatives can make firms more competitive, more attractive for customers and investors, more likely to hold customers and the best employees. Salzmann (2008) explains the economic rationale for corporate sustainability management as “a strategic and profit-driven corporate response to environmental and social issues caused through the organization’s primary and secondary activities”

Thompson (2002), Bendell and Kearins (2005), Greenbaum and Wellington (2008), First and Khetriwal (2008) and Dunphy et al. (2007) provide four of the main reasons for corporate management to implement corporate sustainability or environmental policies: cost savings, the need to prove due diligence if necessary, the desire to constitute best practices and thus to prevent more stringent future regulatory requirements, completed eventually by lobbying actions and the business case value. Besides the cost savings, Weber (2008) also lists corporate image, positive effects on employee motivation, revenue increases and CSR related risks reduction as the primary areas of business benefits. Weber (2008) provides a methodology that “can help decision-makers to evaluate monetary and non-monetary CSR benefits”.

2.3- Sustainability indicators

Leading corporations define their sustainability strategy and objectives. In order to make more informed decisions and to steer their improvements, they need to know how they are progressing towards these objectives. Therefore, it is necessary to develop or use relevant performance indicators. As stated by Keeble et al. (2003), “measurement of performance at different levels within the organisation will inform a diverse range of stakeholders as to how the organisation is performing.”

2.3.1- Indicators

Indicators are tools to help decision making. They provide qualitative or quantitative information about a situation or on the results of any action (Thompson, 2002). The information delivered is concise and measured. This allows the users to communicate to internal and external audiences. Indicators are designed or defined to measure progress toward a specific goal and its objectives. Indicators can be used to provide information necessary for decision making, and are particularly useful in highlighting trends. According to Ehrenfeld (2005), sustainability is defined by parameters that can be measured, and not necessarily by its intrinsic characteristics which might not be measurable and he explains that unsustainability is easier to measure than any progress toward sustainability. With that in mind, Canada's National Round Table on the Environment and the Economy (NRTEE) developed a set of indicators that "puts economic development in perspective with human development and the state of the environment, which supports our economy and lifestyle" (Canada's Sustainability Indicators Initiative, 2010). At the corporate level, Palme and Tillman (2008) define sustainability indicators as "performance indicators that convey information concerning any of the dimensions of sustainable development except purely financial ones" and are "connected to a vision, goal, or target of sustainable development."

2.3.2- Composite indicators

Composite indicators (CIs) or indices are increasingly used in policy analysis and public communication (Nardo et al., 2008). Singh et al. (2007) define composite indices as a common method to compute aggregate values, explaining that "an index can be either simple or weighted depending on its purpose". Nardo et al. (2008) define ten steps in the development of an index. These steps are listed in Table 2.

The key steps in index construction are normalisation, weighting and aggregation. Indices are aggregates of single indicators. The indicators to be computed may have different measurement units. So each indicator has to be normalised in order to become comparable to the others (Nardo et al., 2008). The normalisation step modifies each indicator to harmonize the scale and unit of data. Numerous possibilities exist to normalize data, particularly: ranking, standardisation (or z-scores), Min-Max, distance to a reference and the percentage of annual differences over consecutive years (Nardo et al., 2008).

In the construction of an index, the methods selected to weight and aggregate the data are closely linked to the underlying objective of the index. Weighting of a single indicator can be based on statistical methods and tends to highlight the effects of some components (i.e. to reward or punish). It usually represents a value judgement (Nardo et al., 2008). Because sustainability indices are constructed with numerous indicators, attention should be paid to the

correlation between indicators. Within the weighting methods, the analytical hierarchy process (AHP) is widely used in the construction of sustainability indices (Singh et al., 2007; Krajnc and Glavic, 2005a). This method is a pair wise comparison technique which results in relative weight for each indicator or sub indices (Saaty, 1990).

The aggregation of normalised and weighted data can be done by different means. The two main statistical methods used are the arithmetic mean (based on the sum of the data) or the geometric mean (based on the multiplication of the data). The combination of weighting and aggregation methods can lead to various results: in some cases, the assigned weights result in a trade-off between the indicators of the composite index, a high performance in one field being able to hide a low performance in another field (Gasparatos et al., 2008).

Steps	Function
Theoretical framework	Provides the basis for the selection and combination of variables into a meaningful composite indicator under a fitness-for-purpose principle (involvement of experts and stakeholders is envisaged at this step).
Data selection	Should be based on the analytical soundness, measurability, country coverage, and relevance of the indicators to the phenomenon being measured and relationship to each other. The use of proxy variables should be considered when data are scarce (involvement of experts and stakeholders is envisaged at this step).
Imputation of missing data	Is needed in order to provide a complete dataset (e.g. by means of single or multiple imputation).
Multivariate analysis	Should be used to study the overall structure of the dataset, assess its suitability, and guide subsequent methodological choices (e.g., weighting, aggregation).
Normalisation	Should be carried out to render the variables comparable.
Weighting and aggregation	Should be done along the lines of the underlying theoretical framework.
Uncertainty and sensitivity analysis	Should be undertaken to assess the robustness of the composite indicator in terms of e.g., the mechanism for including or excluding an indicator, the normalisation scheme, the imputation of missing data, the choice of weights, the aggregation method.
Back to the data	Is needed to reveal the main drivers for an overall good or bad performance. Transparency is primordial to good analysis and policymaking.
Links to other indicators	Should be made to correlate the composite indicator (or its dimensions) with existing (simple or composite) indicators as well as to identify linkages through regressions
Visualisation of the results	Should receive proper attention, given that the visualisation can influence (or help to enhance) interpretability

Table 2: The ten steps of index development (Nardo et al., 2008).

Nardo et al. (2008) summarize the benefits of using composite indices. In particular, composite indicators or indices are useful to compare countries or other entities on complex issues. Composite indices are often said to be easier to understand than a long list of individual indicators and to communicate to the public and to decision makers. Indeed, it may be more difficult or it may need expert analysis to determine common trends across various single indicators. In any case, the key strengths of composite indicators are their ability to

initiate a discussion among decision or policy makers and because they are simple to communicate, they can easily attract public interest. However, Nardo et al. (2008) also describe several cautions in using composite indices and note that, depending on their construction, indices can be misleading for decision makers. Indeed, they deliver a consolidated message and this can lead users of the index to draw simplistic conclusions.

2.3.3- Conceptual frameworks

For the development of either indicators or indices, the definition of a conceptual framework is crucial. As noted by Thompson (2002), a conceptual framework helps an organisation to organize and to steer reflection about a particular question. A conceptual framework can be useful in structuring the development of indicators. Gudmundsson (2003) defines a conceptual framework as “a certain logic to the selection of indicators which contains the supporting technical definitions, metrics and linkages.”

Thompson (2002) identifies three types of frameworks: scope, location and process. Scope frameworks structure indicators around goals, issues and domains. An example of scope framework is the triple bottom line (economic, environment, social), this is the breakdown of indicators along the three dimensions of sustainability (Searcy et al., 2008). As another example of a scope framework, Nilsson et al. (1998) suggest the use of the sustainable development record (SDR) approach to evaluate progress toward sustainability. While the SDR model is divided in three parts: resource base, operation and services. These three parts are evaluated on the basis of ratios: the effectiveness is a ratio of service and operations, the thrift is a ratio of the operations over the throughput (material and immaterial flows) and the margin is a ratio of the material and immaterial flows over the resource base (McCartney, 2003).

In location frameworks, indicators are organized geographically or according to the organisational unit. Process frameworks, such as the pressure state response framework, divide the topics into indicators measuring causes, effects and actions linked to the issue to be evaluated. The OECD developed a framework that extends the pressure state response framework: the “DPSIR” framework, for driving forces, pressure, state, impact, and response (OECD, 2004).

Pflieger et al. (2005) recommend the use of a life cycle assessment framework for sustainability indicators. Indeed, a life cycle approach emphasizes the need to take into account upstream and downstream processes, including the direct and indirect impacts of corporate activity. In the published literature, this method has been used only for environmental performance indicators. Table 3 gives examples of some key frameworks and their main characteristics.

Conceptual framework	Strengths	Weaknesses
Triple bottom line	<ul style="list-style-type: none"> • convenient, • widely used, • easily understandable 	<ul style="list-style-type: none"> • Does not facilitate cross cutting indicators
Life cycle assessment	<ul style="list-style-type: none"> • Accounts for upstream and downstream parameters, • Measures or calculates direct and indirect effects. 	<ul style="list-style-type: none"> • Currently applied only on measurement of environmental impacts
Pressure State Response	<ul style="list-style-type: none"> • Helps identify necessary actions • Measure efficiency of actions 	<ul style="list-style-type: none"> • Difficult to identify the cause and effect relationship
Drivers Pressures State Impacts Responses	<ul style="list-style-type: none"> • Considers human-environment interlinkages • Integrated complex environment-socio-economic issues • Brings together stakeholders with disparate expertise 	<ul style="list-style-type: none"> • Difficult to see horizontal linkages among environmental issues • Provides little guidance on the type of impacts that can occur or the types of policy responses that might be considered.
Sustainable development records (SDR)	<ul style="list-style-type: none"> • Allows financial, environmental and social aspects of an operation to be handled in the same systematic way 	<ul style="list-style-type: none"> • Does not provide an explicit description of sustainability • Can be considered as a record of material and energy flows.

Table 3: Examples of conceptual frameworks and their characteristics.

2.3.4- Performance measurement and decision making

Performance measurement has been carried out by organizations for decades with various objectives. According to Neely (1998), corporations need to check their position towards some objectives, to communicate their positions to stakeholders, to confirm priorities for management and action, and to compel their progress. Neely (1998) explains that corporations generally concentrate the measurement of their performance in four main areas. Customer and employee satisfaction is the first parameter corporations tend to measure. The intellectual capital of a corporation is the second. It can be measured by the numbers of patents or by linking financial and intellectual strengths of the company. Measuring supplier performance is the third and has become widespread with the implementation of ISO 9000. Finally, financial performance is measured by traditional tools, such as the income statement, balance sheet, and the statement of cash flow.

In addition, Kaplan and Norton (1996) define the Balanced Scorecard, a way for the financial community to recognise the value of non financial measures. In addition to the financial perspective, the balanced scorecard includes perspectives on customers, internal business processes and learning and growth. Figge et al. (2002), Dias-Sardinha and Rejinders (2005) and Hubbard (2009) demonstrate the interest in expanding the balanced scorecard approach to consider sustainability issues.

In any case, measuring business performance along several perspectives provides new insights into corporate activities and facilitates decision making on long term issues. In particular, as Azapagic and Perdan (2000) emphasize, the measurement of sustainability

performance via dedicated indicators provides information to decision-makers and allows them to compare different options for the implementation of their sustainability strategy and the setting of their goals. As illustrated by Beloff et al. (2004), corporations should first understand their sustainability issues and possibilities and then use a sustainable development framework as a decision-support system.

2.3.5- Corporate sustainability indicators

2.3.5.1- Sustainability indicators used at the corporate level

Many sets of sustainability indicators have been developed at the corporate level. For example, the GRI has developed a list of 79 indicators (GRI, 2006).

In their proposed framework of indicators of sustainable development for Industry, Azapagic and Perdan (2000) identified performance indicators along the three pillars of sustainable development (**Table 4** *Erreur ! Source du renvoi introuvable.*). However, neither of these examples proposes crosscutting indicators. As noted by Searcy et al. (2008), the breakdown of sustainability issues and related indicators along the three axes of sustainability might be convenient, but it does not facilitate the emergence of integrated or crosscutting indicators. An example of indicators linking two or more pillars of sustainability could be eco-efficiency indicators (WBCSD, 2000b), which is the generation of more value with less impact.

Environmental indicators	Economic indicators	Social indicators
Environmental impacts: <ul style="list-style-type: none"> • Resource use • Global warming • Ozone depletion • Acidification • Eutrophication • Photochemical smog • Human toxicity • Eco-toxicity • Solid waste 	Financial indicators: <ul style="list-style-type: none"> • Value added • Contribution to GDP • Expenditure on environmental protection • Environmental liabilities • Ethical investment 	Ethics indicators: <ul style="list-style-type: none"> ✓ Preservation of cultural values <ul style="list-style-type: none"> • Stakeholders inclusion • Involvement in community projects ✓ International codes of conduct <ul style="list-style-type: none"> • Business dealing • Child labour • Fair prices • Collaboration with corrupt regimes • Intergenerational equity
Environmental efficiency <ul style="list-style-type: none"> • Material and energy intensity • Material recyclability • Product durability • Service intensity 	Human Capital indicators <ul style="list-style-type: none"> • Employment contribution • Staff turnover • Expenditure on health and safety • Investment on staff development 	Welfare indicators <ul style="list-style-type: none"> • Income distribution • Work satisfaction • Satisfaction of social needs
Voluntary actions <ul style="list-style-type: none"> • Environmental Management System • Environmental improvement beyond compliance level • Assessment of suppliers 		

Table 4: Examples of sustainability indicators for industry (Azapagic and Perdan, 2000).

2.3.5.2- Issues and challenges of using indicators and indices by corporations

When corporations decide to use sustainability indicators, the first challenge is to decide whether to use existing indicators or to design new ones. Existing indicators have been tested by others and may allow comparisons with other companies, provided that the indicators are measured in the same way. The important point to emphasize is their suitability to the corporation. The development of new indicators requires statistical skills within the company and would not necessarily be useful to compare with competitors. In any case, the selection and use of any indicator will have consequences on behaviours. Neely (1998) gives several examples where measuring the wrong parameters can create dysfunctional behaviours because employees adapt their behaviour to the way they are measured. Staniskis and Arbaciauskas (2009) provide recommendations on how sustainability indicators could be developed by industrial enterprises: the authors state that efficient set of indicators should fulfill the following characteristics: “comparability/measurability, meaningfulness, integrity, continuity, clarity and efficiency” (Staniskis and Arbaciauskas, 2009).

The design of composites indices is particularly complex for a single company, as it requires sophisticated statistical and mathematical skills. However, self-designed sustainability indices may be useful for the purpose of corporate decision making or internal communication. Indeed, these indices allow corporations to employ indicators focused to their own sustainability issues. Using the analytical hierarchy process (AHP) as a weighting method presents a few advantages: it forces managers, experts and decisions makers to think about their definition of sustainability; it is straight-forward, easy to implement and often already practiced in project management; and the result is a customised index reflecting the specific priorities of the corporation. Some pitfalls are to be noted as well: attention should be paid to the reliability of indicators used to construct the index, and statistical and mathematical methods should be rigorously respected in order to avoid any misinterpretation of the data. This may require external skills. In any case, indices do not prevent decision makers to look at the evolution of each individual indicator. In addition, self-designed indices could allow comparisons between corporations only if they are similarly calculated. Table 5 provides examples of the advantages and disadvantages of self-designed indicators or indices for corporations.

Advantages	Disadvantages
✓ Fit company's sustainability issues	✓ Requires internal statistical skills to check
✓ Represent corporation's policy and target	the reliability of the weighting exercise
✓ Facilitate external communication	✓ Is time consuming
	✓ Does not allow comparison with other companies.

Table 5: Advantages and disadvantages of self-designed indicators or indices for corporations.

A number of approaches are available for corporations seeking to implement their own unique indicators. Thompson (2002) divides the implementation phase into four steps. The first step is data collection. Corporations must pay particular attention to the reliability of data and of the collection method. In the second step, these raw data must be analysed and interpreted in order to produce performance indicators. As some indicators may be combinations of different types of data, weighting or conversion processes can come into play. The third step is information assessment, where trends and values are detected. The fourth step is communication of performance indicators.

After their implementation, corporations have to assess indicator performance and refine the indicators as necessary (Thompson, 2002). Indeed, corporations should check the quality of information provided and determine whether the indicator is really measuring what is expected to be measured. This step allows corrective actions on the process of measuring performance. In addition, Neely (1998) emphasizes the need for evolution of the indicators in corporations. Continuing to measure things that do not matter is described as an easy trap and he recommends deleting obsolete measures by asking: “is it useful?” Finally, measures and strategy should always match, and corporations’ strategies are evolving on an annual basis. Measures are thus expected to evolve as well. Since the task of developing new measures is time-consuming, Neely (1998) notes that corporations usually keep the same indicators despite the evolution of strategies and objectives.

The use of indicators presents some challenges as well. As Neely (1998) explains, indicators represent what happened in the past, while managers and decision makers may need to know what will be the trends in the future. In order to make correct predictions, managers need to understand possible links between the different indicators and to detect which indicators are leading, or changing before the phenomenon has changed and indicators which are lagging, or following the event. These predictions will only be verifiable once the data become available. As noted by Palme and Tillman (2008), the clear definition of sustainability objectives and the formulation of “future-oriented” indicators would contribute to the wise use of indicators in predictions.

2.3.5.3- The use of indicators in corporations

The literature provides few examples regarding the use of sustainability indicators at the corporate level. Keeble et al. (2003) and Veleva et al. (2001) recommend the use of indicators for project assessment or for measuring production performance. However, they do not provide insight into how this use contributes to corporate sustainability. Searcy et al. (2006) present a sustainability “indicator integration model” implemented in a Canadian electric utility: its purpose is “to help structure thinking and discussion about the integration of the indicators”

with the existing structure of the corporation. As recommended by the authors, the model should be adapted to other contexts with caution.

The actual use of corporate sustainability indicators in board level decision making, strategic management and supply chain management was also studied by the International Institute of Sustainable Development (IISD). This study highlights that relatively little is known on how corporate sustainability indicators are used in practice (Searcy, 2009). Palme and Tillman (2008) list four possible applications of sustainability indicators in corporations: reporting, accounting, benchmarking and decision making. Within these four applications, reporting is the most used. The second use identified by Palme and Tillman (2008) is for accounting: if traditional accounting is the analysis of information related to the economic affairs of a corporation, sustainability accounting involves also environmental and social affairs. The third application is benchmarking: this application is slowed down by a lack of standardization of indicators in various corporations. The fourth and least implemented application is the use in planning and decision making, which would be possible through future-oriented indicators. Palme and Tillman (2008) identified three possibilities aiding the development of such future oriented indicators: the balanced scorecard, involving the formulation of targets and of “future financial performance”; the implementation of environmental management systems which, by nature, promotes the implementation of targets and the commitment to continuous improvement; and the Global Reporting Initiative (GRI), whose guidelines include advice on sustainability planning. Concerning the GRI, the authors note that the strategy recommendations of the GRI might not be followed, lowering the eventual emergence of future oriented indicators.

Krajnc and Glavic (2005b) developed a sustainable development composite index and identified the same potential uses of this index: reporting, by presenting the corporation's progress to its stakeholders; accounting by monitoring progress toward sustainability; benchmarking, if it was applied to different companies to compare and rank them in terms of sustainable development; and decision making, by providing early warning information. Finally, Gudmundsson (2003) and Hezri and Dovers (2006) provide insight into potential uses of sustainability indicators in policy making, particularly the use of indicators in public administration, urban studies and environmental sciences. In particular, in his analytical framework, Gudmundsson (2003) defines three types of uses for indicators:

- ✓ the direct use, when indicator trends induce the implementation of a strategy;
- ✓ the conceptual use, when the conceptual framework related to the indicator is used to develop or modify a policy;
- ✓ and the symbolic use, when indicators do not lead to direct or conceptual use

2.3.6- Sector-level indicators

At the sector level, there have been several studies on industry specific sets of indicators. The literature provides examples of sector specific indicators or frameworks. Azapagic (2004) develops a framework for sustainable development indicators for the mining and minerals industry. Azapagic and Perdan (2000) define a general framework for indicators of sustainable development for industry. However, neither of them reveals how these frameworks have been used by corporations since their development. Palme and Tillman (2008) describe the use of sustainability indicators in the Swedish water utilities sector and observe that the use at the sector level is close to the use described for the corporation level. However, the authors point out that this specific sector is managed by politicians, and that in case of conflict between environmental and financial issues, the financial issue would be treated in priority. For this reason Palme and Tillman (2008) conclude that sustainable development indicators in Swedish water utilities would contribute to the increased sustainability in the sector if they are indeed used in planning and decision-making.

Indicators of sustainable production have also been developed by Veleva and Ellenbecker (2001) and Krajnc and Glavic (2003). In addition, Nordheim and Barrasso (2007) have developed indicators for the aluminum industry and Gerbens and et al. (2003) have studied a method of sustainability measurement in food production systems. La Rovere et al. (2010), Diniz da Costa and Pagan (2006) and Al-Sharrah et al. (2009) studied sets of indicators for the energy sector. Others studies have been conducted on the development of indicators for the pharmaceutical industry (Veleva et al., 2003), the retailing sector (Erol et al., 2009), the detergent industry (Seuring et al., 2003) and airports (Upham and Mills, 2005). Finally, fifteen sector specific supplements of the GRI have been developed including electric utilities, financial services, food processing, and mining and metals (GRI, 2010). These supplements provide sector specific recommendations for the application of the guidelines and list of sector specific indicators.

The Composite Sustainability Performance Index or CSPI (Singh et al., 2007; Singh et al., 2009) was developed for the steel industry on the basis of input from sector specific stakeholders and experts. Various indicators are weighted with the analytical hierarchic process and aggregated by an arithmetic mean. Krajnc and Glavic (2005a) applied their sustainable development composite index to several corporations of the same sector on the basis of publicly available data. Their result is a comparison of these corporations along standardised indicators.

2.3.7- Market-level indicators

At the market level, the increasing importance of socially responsible investment has lead

to the introduction of several sustainable indices. Fowler and Hope (2007) cite several examples, including the Dow Jones, E.Capital, Ethibel, FTSE4, Humanix, Jantzi, KLD Analytics, and Vigeo.

The Dow Jones Sustainability Index (DJSI) is currently the most widely known. It uses indicators to rank companies on their sustainability. In this index, the economic indicators are worth 30.6%, there is 9.2% for the environmental data and finally 20.4% for social parameters. In addition each dimension includes industry specific criteria and weight indicators (Fowler and Hope, 2007; Singh et al., 2009). The aggregation of data is a simple arithmetic mean. Table 6 details advantages and disadvantages of the Dow Jones Sustainability Index.

Advantages	Disadvantages
<ul style="list-style-type: none"> ✓ Data supplied by companies are audited ✓ Use of external data ✓ Specificities of industry sector are considered ✓ Results in a score and a ranking, easy to understand for investor 	<ul style="list-style-type: none"> ✓ Includes only companies registered on the Dow Jones General Index and that score highest on a list of sustainability criteria ✓ More emphasis on economic issues than on environmental and social ones, highlighting industry leaders, more than sustainability leaders

Table 6: Advantages and disadvantages of the Dow Jones Sustainability Index.

2.4- Sustainability reporting

With the increase in sustainability concerns of many stakeholders, corporations are under increasing pressure and need to be transparent about their visions, actions and results regarding sustainability. Corporate sustainability reporting is the incorporation of economic, environmental and social information into the organization’s public reports. Daub (2007) defines a sustainability report as a report which “must contain qualitative and quantitative information on the extent to which the company has managed to improve its economic, environmental and social effectiveness and efficiency in the reporting period and integrate these aspects in a sustainability management system.” The definition given by the WBCSD is similar: “we define sustainable development reports as public reports by companies to provide internal and external stakeholders with a picture of the corporate position and activities on economic, environmental and social dimensions” (WBCSD, 2002)

As stated by the WBCSD (2002), sustainability reports are key tools to support a company’s position and to strengthen its reputation. In addition, these reports address the need for accountability and transparency of corporations and can help their audiences (stakeholders) make informed decisions about their involvement with individual companies. With this pressure important improvements in corporate sustainability reporting have been made. To guide corporations in these transformations, numerous reporting guidelines have

been published, examples include the Global Reporting Initiative (GRI, 2006), Stratos Sustainability Reporting Guidelines (Stratos, 2008), and the World Business Council for Sustainable Development Guidelines (WBCSD, 2002). The content of these reports and particularly the indicators selected are of a special interest.

2.4.1- Sustainability reports

According to the GRI Guidelines, “a sustainability report refers to a single, consolidated disclosure that provides a reasonable and balanced presentation of performance over a fixed time period” (GRI, 2006). Generally, corporate sustainability reports contain a description of the sustainability vision of the organization, its objectives towards sustainability and a series of indicators illustrating the performance of the organization. This qualitative and quantitative information provides insight into how the company has improved its economic, environmental and social efficiency, over the reporting period (Daub, 2007). The integration of these aspects into a “sustainability management system” should allow the reporting corporation to manage its sustainability issues (Daub, 2007; Adams and Frost, 2008). Bansal and Roth (2000) and Adams (2002) discuss several reasons that motivate corporations to report. While public pressure is a primary driving force, some benefits of reporting are also cited: reporting on corporate activities minimizes risks (for example customer boycotts), allows a better understanding of corporate activities and thus reduces criticisms, influences or delays legislation, attracts and retains the most talented people, and allows inclusion in ethical investments funds among others. Interestingly, Pleon (2005) studies the stakeholders’ point of view towards sustainability reporting. This survey describes the general type of information stakeholders expect to find in a report: human rights, energy and eco efficiency and health and safety are the most three expected themes. A joint survey carried out by KPMG and Sustainability (Bartels et al., 2008) reveals stakeholders recommendations for reporting. However, none of these studies mentions the use of sustainability indicators in corporate reporting. This is part of the key question concerning the use of sustainability indicators in corporate management or corporate decision making. On this point, Adams and Frost (2008) noted that the small amount of research made on the process of sustainability reporting and on the way the data collected are used in decision-making within organisations is surprising.

While Canadian banks, insurance companies, trust and loan companies are required to publish a public accountability statement (public accountability statement regulations, SOR/2002-133); sustainability reporting remains a voluntary initiative in most industries. That is a reason why there is no defined requirements to build sustainability reports. However, there are standards or guidelines that are commonly used. Within those standards, we can cite the GRI guidelines and publications from the WBCSD and Stratos, which both provide general

recommendations for preparation of sustainability reports.

2.4.2- Global Reporting Initiative

In 1998, the Coalition for Responsible Economies (CERES) published guidelines for sustainability reporting, called the Global Reporting Initiative (GRI). Since then, at least 5592 reports have been published following the GRI guidelines (GRI website, 2010). For 2008, the GRI website indicates that 925 companies used the GRI guidelines for their report. KPMG’s 2008 survey of corporate responsibility reporting (Slater, 2008) studied the reporting processes of 2200 companies. They demonstrate that the majority of their sample (70%) uses the GRI Guidelines, showing that this has become a leading standard for reporting.

The initial GRI guidelines have been updated twice since their first publication and the current version is the G3 guidelines. The GRI guidelines are broadly applicable; however sector specific supplements have also been developed such as electric utilities, financial services, food processing, and mining and metals. First, the GRI guidelines provide help to define the content and the boundary of the report. Secondly, corporations can find in these guidelines recommendations for the use and publication of performance indicators within the three dimensions of sustainability, namely economic, social, and environmental issues. Corporations can select indicators they will report on, either in the core (of general interest and usable by every corporation) or additional indicators (emerging practices). The division of indicators per category is shown in Table 7. In addition to the proposed indicators, the GRI guidelines recommend that corporations clearly detail their strategy and vision toward sustainability, identify their main sustainability issues and highlight objectives related to them. The guidelines also offer some advice for sustainability planning (GRI, 2009).

Performance indicators	Core indicators	Additional indicators	Total
Economic	7	2	9
Environmental	17	13	30
Social (labour practices , human rights, society and product responsibility)	25	15	40
Total	49	30	79

Table 7: Number of indicators per category in the GRI guidelines (GRI, 2006).

If, as demonstrated by KPMG’s survey, the GRI framework is the most utilized by corporations, there are few studies concerning how it contributes to progress towards sustainability. One study focused on the use of the GRI guidelines in Spain concludes that reporting can have a positive impact on sustainable development (Gallego, 2006). Assuming

that corporations “hope to obtain social progress, protection of the environment, prudent use of natural resources and the maintenance of stable levels of economic growth” as a result of sustainable development, Gallego (2006) concludes that extensive communication on these topics will lead to sustainable development. Beyond this study, the GRI framework has been subject to some severe criticisms. One criticism expressed by Moneva et al. (2006) concerns the lack of crosscutting indicators. They suggest the introduction of indicators linking two pillars such as eco-efficiency indicators (linking the economic and the environmental pillars) and eco-justice indicators (linking the social and the environmental aspects). In addition, Staniskis and Arbaciauskas (2009) remark that few of the GRI indicators are related to the performance “in terms of quality such as process cost, service quality, product quality”. Moreover, they note that the aim of the GRI indicators is mostly external reporting, therefore their impact on decision making remains limited. Since corporations can select which part of the GRI guidelines they wish to follow, Palme and Tillman (2008) note that the strategy recommendations of the GRI might not be followed. On this point, Moneva et al. (2006) argues that this selection could also hide actual corporate unsustainability. In addition, Palme and Tillman (2008) note that corporate vision is sometimes described in a qualitative manner rather than clearly accompanied by concrete objectives. Along with these comments, the GRI is also criticised because of its high number of indicators and the lack of requirement for an independent verification (Goel, 2005; Smith and Lenssen, 2009).

2.4.3- Other recommendations

There are other sustainability reporting guidelines or recommendations published by STRATOS and by the WBCSD. These state the importance of stakeholder participation and consideration, emphasize the publication of indicators useful for business management and highlight the importance of having an external review of the report. These guidelines are less detailed and less used by corporations than the GRI reporting guidelines.

In addition, Pflieger et al. (2005) note the non inclusion of product related information in current sustainability reporting practices. The authors state that these practices do not reflect indirect effects of companies’ activities and suggest that a life cycle approach would allow the consideration of both direct and indirect effects. Indeed this approach takes into consideration upstream and downstream processes and provides basic data on inventory results as well as integrated information related to the impact level. Pflieger et al. (2005) promote the type of results obtained by LCA on environmental aspects and suggest the extension of the life cycle approach to the other two pillars of sustainability. The environmental impacts are scientifically determined in the case of LCA and thus are interesting starting points for the definition of relevant indicators (Pflieger et al., 2005) to be used in environmental or sustainability reporting

as well as for decision making.

Keeble et al. (2003) recommend that corporations adapt their current ways of measuring their performance in order to address the requirement of sustainability reporting. For a corporation to develop the “best fitted” set of indicators, the authors advise that indicators be selected from existing sets used by peers, by leaders or by standards and to determine which ones are the most appropriate to their sustainability issues and to the need of their stakeholders.

2.4.4- The role of indicators in sustainability reporting

Generally speaking, performance indicators are used in corporate management to measure the results of actions, to demonstrate the progress or failure to progress toward expressed objectives and to steer corporate activities. In the context of sustainability reporting, performance indicators have to support the qualitative description of policy, strategies and vision and address the audience’s needs. According to Daub (2007), performance indicators represent the concrete data on the corporation’s performance toward the three sustainability dimensions and thus are considered at least as important as the qualitative part of sustainability reporting.

However, it seems logical that the selected indicators should not be completely different from actually measured parameters and it seems obvious that the data collected to steer decision making should help reporting and vice versa. Reported indicators should be at the same time useful for corporate management and interesting for the targeted audience. As stated by Azapagic and Perdan (2000), performance indicators used in industry can be product- or process-oriented. They can be product-oriented in order to allow comparison between products providing the same service. They can be process-oriented, allowing the company to identify advantages of processes leading to the same products. If they are company-oriented they will allow comparison between units or companies. The authors demonstrate that these kinds of company-oriented indicators can be useful for internal uses and for external communication with key stakeholders. The identification of the audience for sustainability reporting and the determination of the indicators useful to this audience seem to be a key task for any corporation. Indeed, while governments would be attentive to indicators demonstrating compliance to regulations, customers may be more interested in product responsibilities or impacts.

2.5- Conclusions

This review shows that substantial research has been conducted on sustainability

indicators and indices, on their calculation, their relevance to sector-specific sustainability issues and their acceptability for a sectors' stakeholders. As demonstrated, sustainability indicators are widely used in sustainability reporting. However, the extensive number of indicators proposed by and for corporations may not be relevant to their policy and this link should be explored. As noted in the literature, corporate vision is sometimes described in reports in a qualitative manner rather than clearly accompanied by concrete objectives and illustrated by indicator trends. While the GRI appears to be the most widely used set of reporting guidelines, there have been few studies regarding the use of other sustainability indicator programs. Moreover, there have been few studies summarizing the many indicators reported by corporations. The link between indicators used and policy management is part of the key question concerning the use of sustainability indicators in corporate management or corporate decision making. On this point, the small amount of research made on the use of sustainable development indicators in reporting, the process of sustainability reporting and on the way the data collected are used in decision-making within organisations opens opportunities for further research.

2.6- Motivation for research

This literature review provides relatively few examples of the actual use of sustainability indicators in corporations. Despite the wide range of articles and industrial sectors explored, very few details were found on how indicators are currently used in corporate decision making, education, benchmarking and other activities. The main use of indicators seems to be publication in sustainability reports, where they are used to illustrate corporate policies and goals. However, the literature review does not provide details on the indicators commonly reported by corporations, on their associated targets, or how they are used. There is a need to address this gap. The GRI guidelines are the most widely used corporate sustainability reporting framework. However, the GRI suffers from several weaknesses. In particular, the wide latitude corporations are given to select their indicators induces a high disparity in the reported fields. It is worth exploring which of the indicators suggested by the GRI have been reported by corporations. The use of other sustainability indicator programs is also worthy of exploration.

The other uses of indicators mentioned in this review beyond sustainability reporting (accounting, benchmarking and especially decision making) also merit study in greater depth. Among the interesting literature, the analytical framework developed by Gudmundsson (2003) provides an interesting tool for the exploration of the uses of corporate sustainability indicators. In particular, the relationship between indicators used for management purposes and reported indicators is not very well established and there is a need for more exploration in this domain.

3- Research questions

This research seeks to explore how corporate sustainability indicators are used in corporations. The central research question, and associated sub questions, is detailed below.

3.1- Central question

The central question for this research study is:

How are indicators used in Canadian corporate sustainability reports?

3.2- Sub questions

Several sub questions have been designed to help address the central question. They include:

- ✓ What sustainability indicators are currently reported by Canadian corporations?
- ✓ To what extent are Canadian corporations using existing sustainability indicators programs?
- ✓ How are sustainability indicators used in corporate decision making, education, benchmarking and other activities?
- ✓ How does the use of sustainability indicators in Canadian corporations differ by industry?

4- Methods

This research focused on a content analysis of sustainability reports published by Canadian corporations. A qualitative analysis of 94 Canadian corporate sustainability reports lead to the construction of a complete database of indicators highlighted in the reports. Both manual and software bases searches of keywords provided insight into the extent to which Canadian corporations were using sustainability indicator programs and on their use of sustainability indicators. Finally, an analysis of this information showed trends among industry sectors. A synopsis of the research method used is illustrated in Figure 1.

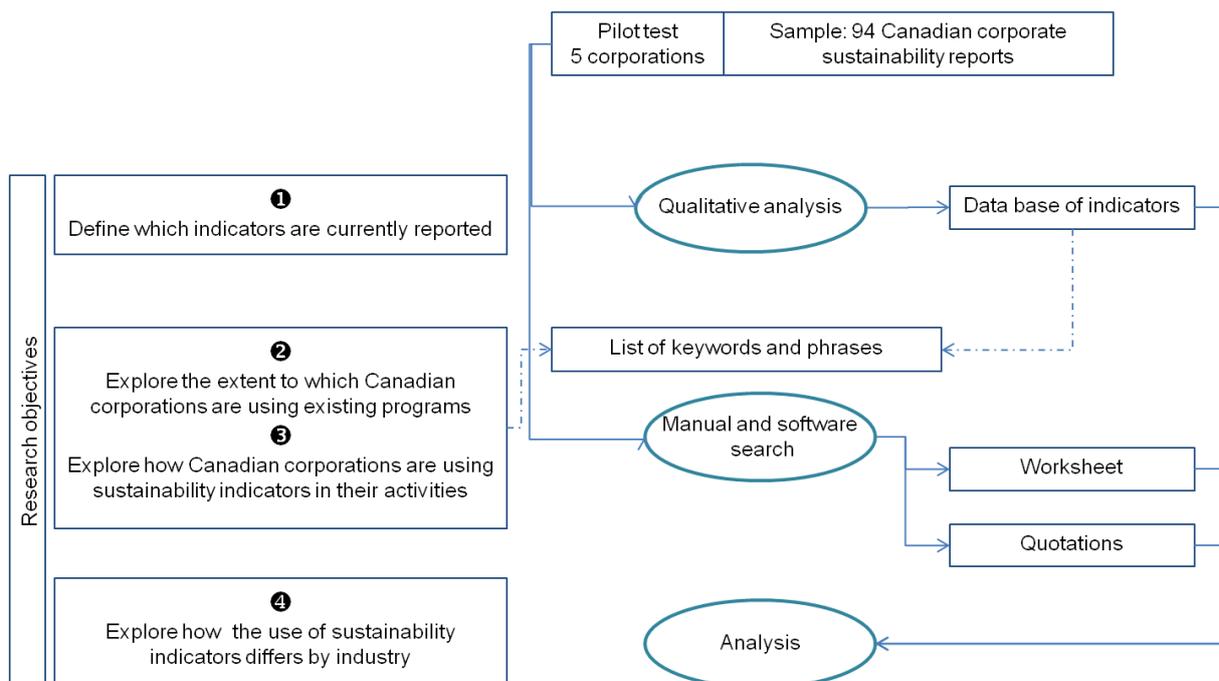


Figure 1: Synopsis of the research method.

4.1- Data collection procedure: content analysis

Content analysis is a research technique for making replicable and valid inferences from data to their context. Krippendorff (2004) explains that the content analysis technique is appropriate to problems which can be answered through a purposeful examination of texts. In this study, content analysis was used to conduct an exploration of the research questions noted in section 3. Sustainability reports published by Canadian corporations provided a basis for the analysis.

Krippendorff (1980) identified six questions which must be addressed in the preparation of every content analysis:

1. Which data are analyzed?

In this study, the data to be analysed are sustainability reports, or equivalent, published by Canadian corporations in recent years. This focus is on reports published over the last three years.

2. How are they defined?

As defined in section 2.4.1, sustainability reports consist of the publication of qualitative and quantitative information on how a company has improved its economic, environmental and social efficiency over the reporting period. The term “or equivalent” refers to other corporate reports commonly associated with sustainability such as CSR, corporate responsibility, triple bottom line, public accountability, or environmental reports.

3. What is the population from which they are drawn?

The population from which the data were drawn is the Canadian corporations that have published sustainability reports over the past three years. These corporations were identified through databases available from the GRI website (GRI, 2009), Corporate Register website (Corporate Register, 2009), a survey of Canadian corporations publishing a sustainable development report (Stratos, 2008) and international surveys of corporations publishing a sustainable development report (Slater, 2008). The reports selected for analysis were the most recent one for each corporation.

4. What is the context relative to which the data are analyzed?

As explained in the motivations for research, the context relative to this analysis is to explore how sustainability indicators are used in Canadian corporations.

5. What are the boundaries of the analysis?

This analysis is essentially bounded by a geographical criterion: only Canadian corporations were studied. The second criterion is the publication of a sustainability report.

6. What is the target of the inferences?

An inference is a deduction, or a conclusion, drawn from facts (Krippendorff, 1980). In the context of content analysis, the target of the inferences refers to the results (links or conclusions) the researchers aim to reveal from the data analysed.

In this study, the first objective is to determine which indicators are currently reported. To address this, the reports were analysed to determine the sustainability indicators reported. The first several pages of each report were read and indicators presented in the introduction or in a scorecard were recorded. After that, the remainder of the report was searched and each indicator that was highlighted either in charts, tables, framed or in bold characters was recorded. This led to the development of a database of all indicators used.

The second objective is to explore the extent to which Canadian corporations are using existing sustainability indicators programs. With respect to this aim, the following questions were explored:

- Is the corporation reporting on indicators suggested by the GRI?

- Is the corporation using composite indicators?
- Is the corporation using the balanced scorecard?
- Is the corporation using existing management system such as ISO 14001, SA 8000 and AA 1000?
- Is the corporation using The Global Compact?

The third objective is to explore how sustainability indicators are used in corporate decision making, education, benchmarking and other activities. With respect to this aim, the following questions were explored:

- What are the reported values for the indicators?
- What are the targets for the reporting period and the targets for the following period?
- Does the report provide a reason why have these indicators been selected?
- Does the report provide details on how the indicators were developed?

The fourth objective is to explore how the use of sustainability indicators in Canadian corporations differs by industry. This would be deducted from the previous steps.

The questions identified by Krippendorff (1980) are six theoretical key steps in content analysis preparation and procedure. However, these steps remain theoretical and a specific process was designed in the context of this study. As suggested by Mayring (2000) a pilot test was run in order to check the relevance of the keywords and categories of searches. This is illustrated in Figure 2.

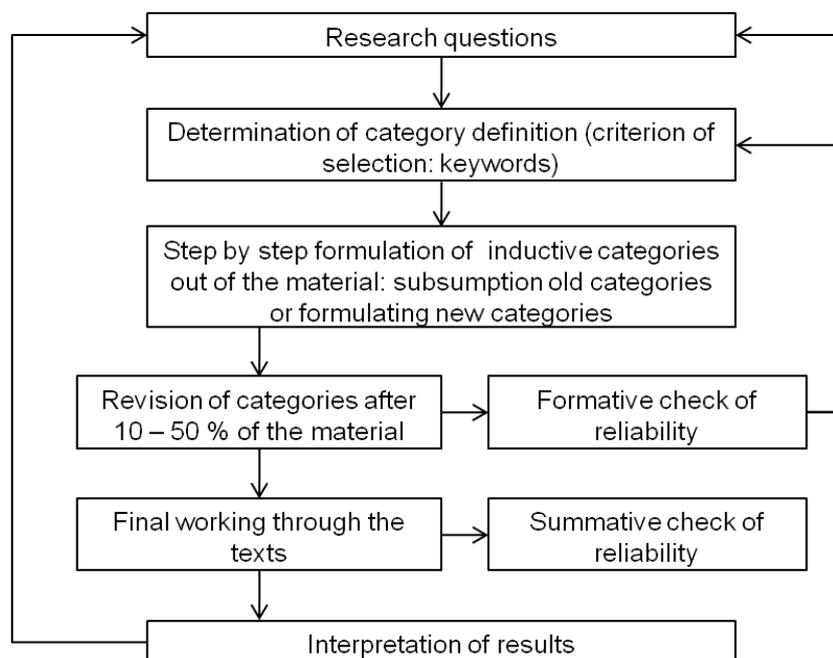


Figure 2: Step model of inductive category development (adapted from Mayring, 2000).

Figure 2 illustrates the process of keywords definition for the content analysis. Keywords and phrases to be searched in the content analysis were defined from the research questions and the efficiency of these keywords was checked. The first type of check is referred to as a “formative check” and was done during a pilot test. The pilot test helped refine the list of keywords. The formative check is done at an early stage when the list of keywords can still be modified. The “summative check” aimed to ensure that all occurrences of keywords were counted. In practice, reports with no or few occurrences were manually screened.

4.2- Sample

As of June 4, 2009 a total of 92 Canadian reporting organizations were identified for 2006, 103 for 2007, and 115 for 2008. Thirty-five reports were also published during the first five months of 2009.

This study focused on reports issued in 2008, as it is the most recent year with a complete set of reports at the time of study. As the study focused on for profit corporations, reports issued by Co-ops, Credit Unions, Institutes, Universities, Associations, and Cities were removed from the list. The list of these organizations is provided in Appendix A. After removing these reports, a total of 94 Canadian corporate sustainable development reports remained. The complete list is available in Table 8. These 94 reports formed the population for the study.

Corporations	Sector
Agrium Inc.	Chemicals
Alberta-Pacific Forest Industries Inc.	Forestry & Paper
Alcoa Canada Primary Metals	Steel & Other Metals
Aluminerie Alouette Inc.	Steel & Other Metals
ARC	Oil and gas
Atco Limited	Multi facilities
Aviva Canada Inc.	Insurance
Bank of Montreal	Banks
Bank of Nova Scotia	Banks
Banque Laurentienne du Canada	Banks
Barrick Gold Corporation	Mining
Bâtirente	Speciality & Other Finance
BC Hydro	Electricity
BCE Inc.	Telecommunication Services
Bell Aliant Regional Communications Inc.	Telecommunication Services
Bombardier Inc.	Engineering & Machinery
BP Canada Energy Company	Oil and gas
Cameco Corporation	Steel & Other Metals
Canada Post Corporation	Support Services
Canadian Imperial Bank of Commerce (CIBC)	Banks

Corporations	Sector
Canadian Natural Resources Limited	Oil and gas
Canfor Corporation	Forestry & Paper
Catalyst Paper Corporation	Forestry & Paper
Coca-Cola Bottling Company	Beverages
ConocoPhillips Canada Resources Corporation	Oil and gas
Diavik Diamond Mines Inc.	Mining
Domtar Inc.	Forestry & Paper
Elk Valley Coal Corporation	Mining
Enbridge Inc.	Oil and gas
EnCana Corporation	Oil and gas
Envision Financial	Banks
Export Development Canada	Speciality & Other Finance
Fondaction	Speciality & Other Finance
Gildan Activewear Inc.	Household Goods & Textiles
Gold Reserve Inc.	Mining
Goldcorp Inc.	Mining
Greater Toronto Airports Authority	Transport
Groupe Aeroplan Incorporation	General Retailers
Hatch	Support Services
Hemlo Gold Mines Inc.	Mining
HSBC Bank Canada	Banks
HudBay Minerals Inc.	Mining
Hudson's Bay Company	General Retailers
Husky Energy Inc.	Oil and gas
Hydro Québec	Electricity
IAMGOLD Corporation	Mining
Imperial Oil Ltd	Oil and gas
Imperial Tobacco Canada Ltd	Tobacco
Inmet Mining Corporation	Mining
Investissement Québec	Speciality & Other Finance
Investors Group	Investment Companies
Iron Ore Company of Canada	Mining
Jacques Whitford Ltd	Support Services
Kinross Gold Corporation	Mining
KPMG LLP (Canada)	Support Services
Loblaw Companies Ltd	Food & Drug Retailers
Manitoba Hydro	Electricity
Manitoba Lotteries Corporation	Leisure, Entertainment & Hotels
Manulife Financial Corporation	Life Assurance
Methanex Corporation	Chemicals
National Bank of Canada	Banks
Nestlé Canada Inc.	Food Producers & Processors
Newfoundland and Labrador Hydro	Electricity
Nexen Inc..	Oil and gas
Nienkämper Furniture & Accessories Inc.	Household Goods & Textiles

Corporations	Sector
Norbord Inc.	Forestry & Paper
Nortel Networks Corporation	Information Technology Hardware
Nova Chemicals Corporation	Chemicals
Ontario Power Generation	Electricity
Petro-Canada	Oil and gas
PFB Corporation	Construction & Building Materials
Potash Corporation of Saskatchewan Inc.	Chemicals
QIT - Fer et Titane Inc.	Mining
RBC Financial Group	banks
SaskPower	Electricity
SITQ Caisse de Dépôt et placement du Québec	Real Estate
Sun Life Financial Inc.	Life Assurance
Synchrude Canada Ltd	Oil and gas
Talisman Energy Inc.	Oil and gas
TD Financial Group	Banks
Teck Cominco Limited	Mining
Teck Cominco Metals Ltd	Steel & Other Metals
Telus Corporation	Telecommunication Services
The Empire Life Insurance Company	Insurance
The St Lawrence Seaway Management Corporation	Transport
Toronto Hydro Corporation	Electricity
TransAlta Corporation	Electricity
TransCanada Corporation	Oil and gas
Wal-Mart Canada Corporation	General Retailers
West Fraser Timber Co Ltd	Forestry & Paper
Woodbine Entertainment Group	Leisure, Entertainment & Hotels
Xstrata Copper Canada	Mining
Xstrata Nickel	Mining
Yamana Gold Inc.	Mining

Table 8: List of corporations that have published a corporate sustainability report in 2008 and their industry sector, as per the Corporate Register website.

4.3- Data analysis

The content analysis provided both quantitative and qualitative data to be analysed. The analysis of qualitative data was done by description, whereas the quantitative data was analysed through descriptive statistics (Creswell, 2003). The content analysis data was analysed through coding and categorization (Kvale, 2007). “Coding involves attaching one or more keywords to a text segment in order to permit later identification of a statement. (...) By categorization, the meaning of long interview statement is reduced to a few simple categories” (Kvale, 2007). Kvale (2007) explains that categories can be built before the analysis, or “arise ad hoc during the analysis.” A combination of manual keyword searches, qualitative analysis

and software based searches was applied for each question, as illustrated in Table 9.

Research questions	Method used	Results
What sustainability indicators are currently reported by Canadian corporations?	Qualitative analysis	Indicators database
To what extent are Canadian corporations using existing sustainability indicators programs? (GRI, ISO 14001, SFM, ...)	Manual keyword search	Worksheet
How are sustainability indicators used in corporate decision making, education, benchmarking and other activities?	Software-based searches	Worksheet
How does the use of sustainability indicators in Canadian corporations differ by industry?	Qualitative analysis	Details per sector

Table 9: Type of search for each research sub question.

Once the sample of the study had been established, a content analysis of the reports was conducted in order to address the research questions. A worksheet was developed to record the results for each corporation (by row) for each research question or sub question (by column). The worksheet is available in Appendix B. The first section of the worksheet (first 14 columns) addresses the research sub-question regarding the use of sustainability indicator programs. Keywords in each column (GRI, ISO 14001, SFM, etc.) were manually searched in each report. In addition, if any other program was mentioned in the report, it would be noted in this section as well. Examples of other programs include: Towards Sustainable Mining, Sustainable Forest Initiative and Responsible Care. If one of these existing sustainability indicators programs were found in a report, a “Y”, standing for “yes” was put in the corresponding row of the table. In addition, if the statement made in the report was relevant to the study a “Q” for “quote” was noted in the table. The quotations were then pasted in another working file. The use of “Y” and “Q” is reproduced in each section of the worksheet. The next nine columns are dedicated to the indicators and measures of performance. These focus on addressing the research sub-question concerning the use of sustainability indicators in corporate decision making, education, benchmarking and other activities. In this section all keywords related to the measurement of performance were searched for in order to provide information on the use of indicators in Canadian corporations. The following sections of the worksheet refer to various corporate activities: supply chain, operations, research and development, management, education and training and communication.

Before launching the content analysis of the 94 reports, a pilot test was run in order to determine the most appropriate way to address the research questions. The pilot test was carried out on sustainability or equivalent reports, by corporations identified as best reporters in a 2008 Stratos study (Stratos, 2008). The seven reporters identified by Stratos were BC Hydro, Enbridge, Suncor Energy, Syncrude, Telus, Transalta, and Vancity. Out of these seven

reporters, Vancity was removed from our study as it is a not for profit corporation and Suncor Energy’s report was not studied since no report was issued in 2008. The pilot test helped refine the structure of the indicators database and the worksheet. Following the completion of the pilot study, the full analysis of the reports was carried out, one industry sector after another.

To address aspects of the research questions, content analysis software was used. The use of software facilitated an objective, consistent and accurate search of identified keywords. The software was selected on the basis of several criteria. These were the capability of the software to compare a large sample (made up with multiple text files), to count keywords in each report and compare frequencies, and to provide the context surrounding the keywords which would need to be analysed. Three software demo versions were downloaded and tested: Crawdad tech (two files comparison), Atlas.ti (limited content analysis functionality) and Concordance. At the end of the trials, Concordance was selected based on its ease of use and its ability to meet the criteria above. Its high degree of personalisation of keywords search and expression allows the search for keywords, phrases, and analysis of proximity. In addition, the context of each occurrence is accessible immediately.

The lists of phrases and keywords were designed once the indicator database was built. Indeed, it seemed logical to analyse the kind of indicators highlighted before trying to find out how they are used in corporate reporting. The lists of keywords or phrases searched are listed in Table 10.

Some of the selected keywords generated so many occurrences that it was decided to refine the screening. Therefore, the “search by proximity” function of the software was used. This function allows keeping a keyword if it is found near other keywords as illustrated in Figure 3.

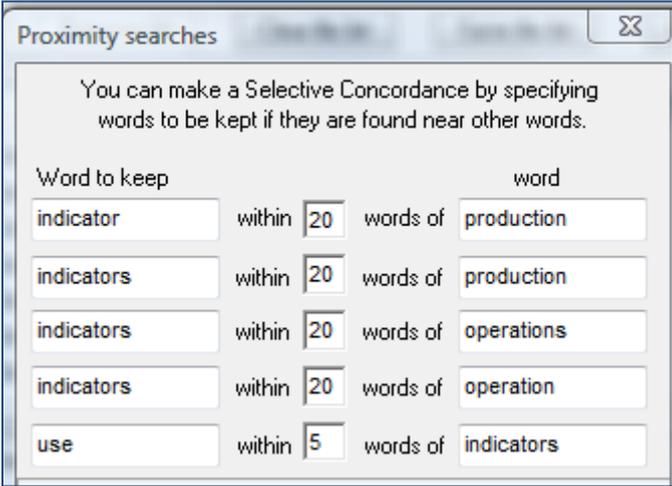


Figure 3: Proximity searches in Concordance software.

It is worth mentioning that a few of the reports were not available in pdf format and thus

not recordable in a text format usable for the Concordance software. For these reports, manual searches of the same keywords were conducted. In addition, for the few French language reports, the lists of keywords were translated.

Themes	Keywords or phrases	Number of occurrences
Existing sustainability indicator programs	GRI	293
	Global Compact	57
	EMS / Environmental management system	36 / 60
	ISO 14001	94
	ISO 14031	0
	OHSAS 18001	27
	Z 1000	0
	AA 1000	4
	SA 8000	1
	SFM / Sustainable Forest Management	3 / 21
	DJSI / Dow Jones Sustainability Index	2 / 7
	Balanced scorecard	8
	Composite indicators	1
	Index	292
Indices	8	
Use of indicators	Indicator	192
	Index	292
	Framework	267
	Measure	242
	Method	102
	Metric	79
	Monitor	151
	Performance	2156
	Scorecard	39
	Management	Audit
Decision		142
Decision-making / Decision making		48 / 10
Supply chain	Purchase	253
	Supplier	114
	Supply-chain / Supply chain	3 / 44
Health and safety	Health and safety	621
	Safety	2250
Research and development	R&D	6
	Research and development	42
Education and training	Education and training	21
	Education	546
	Training	1148
Communication	Communication	167
	Benchmark	77

Table 10: List of keywords and phrases by theme and their number of occurrences.

5- Results and discussion

The results are presented below in several subsections. The findings are based on the analysis of the indicators database and on the records of the content analysis provided in Appendix B. The first subsection presents the demographic analysis of the sample. The second sub-section analyzes the database of indicators that was developed from the study of the reports and details the following topics: the number of indicators highlighted per report, the frequency of use of indicators, the areas of the report where indicators can be found, the breakdown of indicators in categories, the use of indicators and targets in the reports and the indicators used per industry sector. The third subsection is dedicated to the use of existing sustainability indicators programs with an emphasis on the use of the GRI indicators. Finally, the fourth subsection summarizes the findings concerning the way corporations are reporting on their selection and their use of indicators in their corporate activities such as management, research and development, supply chain, education and training, and communication and benchmarking.

5.1- Population analysis

This sub-section describes the basic analysis made on the sample. The breakdown of the corporations by industry sectors is presented below, in addition to statistics on the type of reports published and their average length. A breakdown by province is also presented.

5.1.1- Industry sectors and provinces

The 94 Canadian corporate sustainable development reports are categorized by sector. The sector categories used by the Corporate Register website were sometimes grouped in order to have homogeneous topics and sizes of sector. This is illustrated in Table 11. All services corporations were grouped in one sector. Insurance, investment and other financial corporations were grouped in one sector as well, whereas banks remained in a separate sector.

Industry Sector	Corporate Register Sector	Number of corporations
Mining	Mining	16
Oil and gas	Oil and gas	13
Electricity	Electricity / Multi facilities	9
Banks	Banks	9
Finance	Speciality & Other Finance Insurance Life Assurance Investment Companies Real Estate	10
Forestry & Paper	Forestry & Paper	6
Engineering, construction and chemicals	Chemicals Construction & Building Materials Engineering & Machinery	6
Steel	Steel & Other Metals	4
Transport, communication and services	Support Services Telecommunication Services Transport Information Technology Hardware	10
Retail & Food	General Retailers Household Goods & Textiles Leisure, Entertainment & Hotels Beverages Food & Drug Retailers Food Producers & Processors Tobacco	11
Total		94

Table 11: Number of corporations per sector.

Extraction and energy industries (mining, oil and gas, electricity) account for 40 percent of the reports studied. This may be due to the great public attention these industries are attracting. These sectors may feel pressure to address environmental and social concerns in their communications with their stakeholders. Banks and financial companies represent 20 percent of the sample. It is worth noting that, in Canada, it is mandatory for these companies to publish an accountability statement.

Reports were mapped according to the Canadian province or territory where the corporation headquarters are located. As illustrated in Figure 4, corporations that have published sustainability reports in 2008 are spread all over Canada. The largest number of reports was issued by corporations registered in Ontario. Seven out of the 10 industry sectors are represented in Ontario alone. With Toronto being the economic capital of the country and holding the Toronto Stock Exchange, it is not surprising that many corporations have their head office situated in the Toronto area. Banks and Finance and Mining industry are particularly well represented in Ontario. The province with the next highest number of reports is Alberta, which accounted for 20 of the sampled reports. This is mainly due to the oil and gas sector: all 13 oil and gas companies are registered in Alberta. The province of Quebec is also well represented with 17 corporations. It is worth noting that all sectors excluding oil and gas are present in Quebec. In British Columbia 7 out of the 10 industry sectors are represented.

The breakdown of sectors by province and territory is provided in Figure 4.

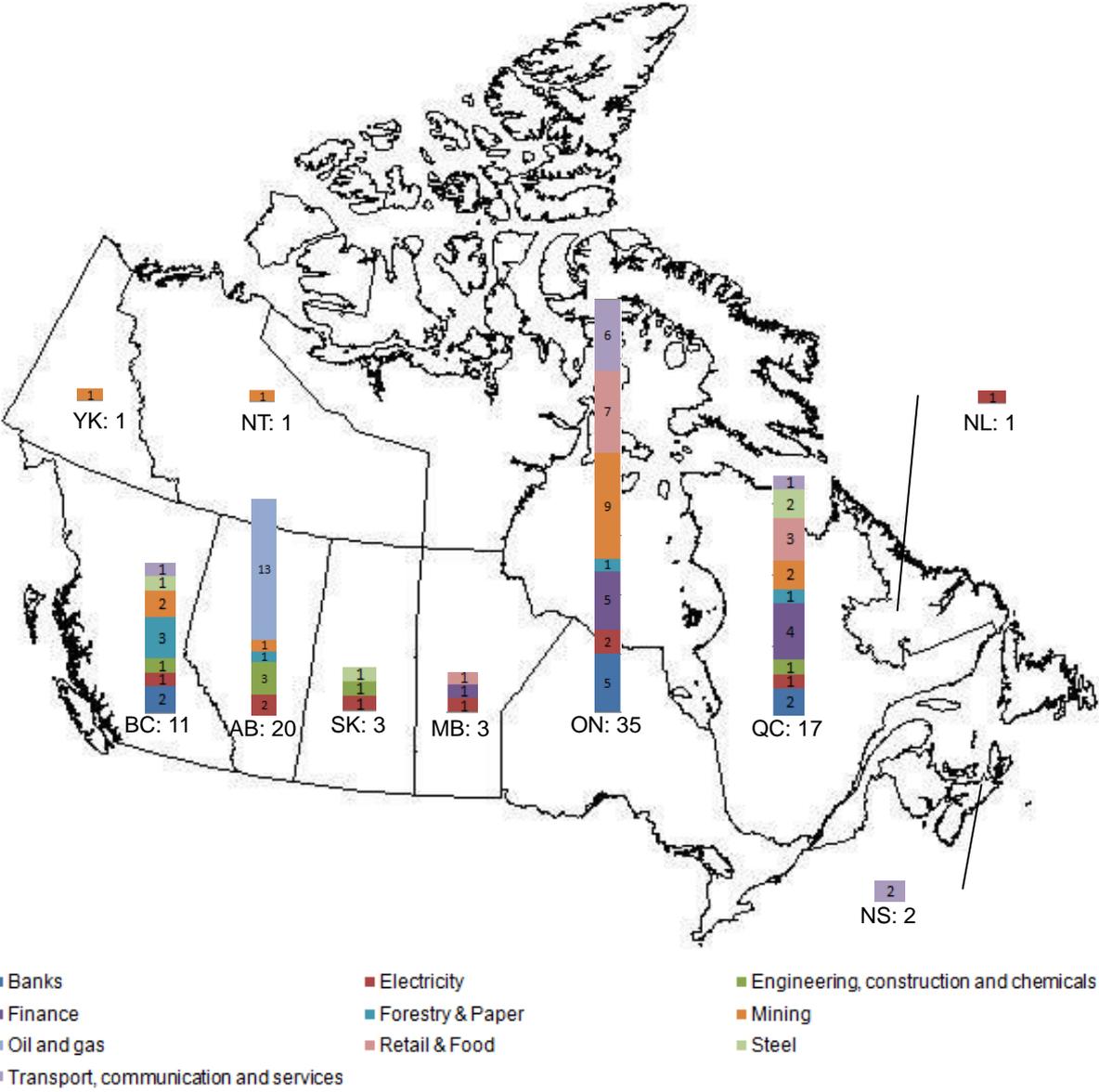


Figure 4: Number of reports and breakdown of sectors by province and territory.

5.1.2- Types of reports

Since the study focused on sustainability reports or equivalent, the sample is made of reports with a number of different titles. Figure 5 provides details regarding the variety of reports studied. It shows that a majority (73%) of the studied reports are called either sustainability, corporate social responsibility or responsibility reports. Of this total, 30% of the titles are focused on responsibility. Annual reports and accountability reports can be considered as wider than just a sustainability report, while environmental and environment, health and safety (EHS) reports have a more narrow scope. The other titles found in the sample (report to community, report to stakeholders, citizenship report, responsibility report or Responsible Care) are similar to sustainability reports regarding their scope, their structures

and the type of subjects they address.

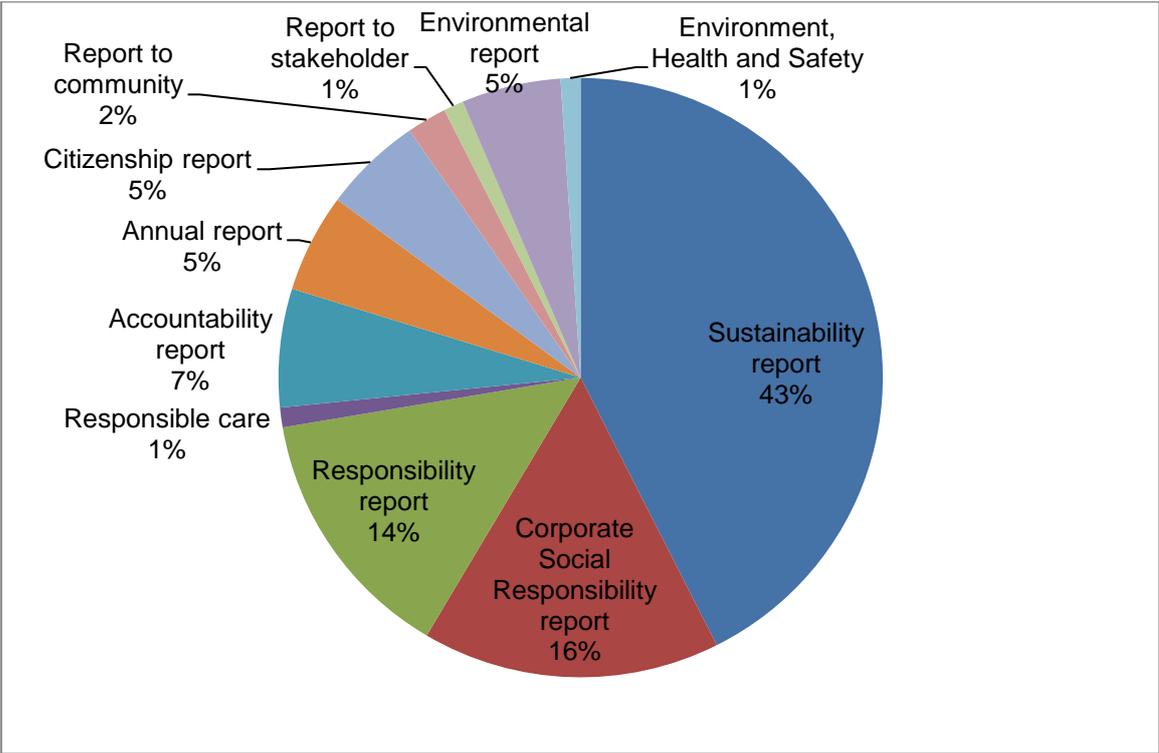


Figure 5: Breakdown of the types of reports.

5.1.3- Average length of reports

The mean value of length of reports was calculated for each type of report. A summary is provided in Table 12, including the minimum and maximum lengths. The calculations of mean and median values did not include the two reports that are only available online: Hudson's Bay Company and Newfoundland and Labrador Hydro.

There is a wide range of report lengths in the studied sample. Indeed, the longest report has 183 pages and the shortest has 3 pages. Among the shortest reports, The Empire Life Insurance Company highlights its involvement in the community. It is worth noting that this is not consistent with the title of the report: 2007 Corporate Accountability Report. Another short report is the responsibility report issued by Cameco Corporation. This report is more a handout on their responsible vision and actions than a comprehensive report. At the other end of the spectrum, there are only five reports longer than 100 pages, among which three are annual reports (BC Hydro, 106 pages and Investissement Québec, 136 pages) or accountability reports (CIBC, 183 pages). Despite these abnormal values at both ends, it is worth noting that for most types of reports the mean and median values are close. The common length of sustainability reports, responsibility reports and CSR reports is between 40 and 45 pages. This range is also valid for accountability reports if extreme values are not considered. For annual

reports the common length is around 70 pages. Environmental reports in this sample are generally shorter. Other types of reports may not be enough represented in the sample to draw any relevant conclusions.

Type of report	Number of reports	Mean length	Maximum length	Minimum length	Median value
Accountability report	6	60	183	3	43
Annual report	5	70.4	136	6	73
Citizenship report	5	29.2	64	6	28
Corporate social responsibility (CSR)	15	43.4	71	20	42
Environment, health and safety report	1	12	12	12	12
Environmental report	5	16.2	36	8	11
Report to community	2	30	36	24	30
Report to stakeholders	1	22	22	22	22
Responsibility report	13	36.7	75	3	40
Responsible Care	1	20	20	20	20
Sustainability report	40	47.2	170	10	44
Global statistics	94	43.3	183	3	40

Table 12: Average length of report per type of report.

5.2- Database of indicators

The first research sub-question of this study was to determine which indicators are currently reported. To address this, the reports were manually analysed to identify the sustainability indicators highlighted in the reports.

5.2.1- Indicators used

The study primarily focused on the indicators listed at the beginning of the report or in the introduction. Indeed, it was assumed that the CEO statement, board introduction and performance scorecards would highlight indicators which are most important to the company. Looking at the scorecards and introductions is straight-forward and instantaneously provides the sustainability vision and trends of the company. In addition scorecards are convenient tools to present several indicators at the same time: they allow a clear factual description of the goals, the targets and the performance of the corporation. However, the indicators highlighted in other areas of the report were also considered.

The list of indicators highlighted by the 94 sampled corporations is available in Appendix C. Appendix C highlights that a total of 585 different indicators were reported by the 94 corporations. It is important to note that some companies do not highlight any indicators or highlight a limited number of economic indicators.

Basic descriptive statistics on the sample reveal that the number of indicators per report

varies from 0 to 62. The mean number of indicators is 19.5 per report with a standard deviation of 14.6 and a median value of 16.5. The close values of the mean and the standard deviation highlights a very high dispersion of indicators within the 94 reports. Indeed, out of the total 585 indicators, 324 indicators are used only once, 91 are highlighted by two corporations, and 40 are mentioned by three corporations. Looking at the other extremity, very few indicators are highlighted in a majority of reports: six indicators are highlighted in more than 20 reports, one indicator is used in 30 reports, and three indicators are highlighted in more than 40 reports. The most frequently mentioned indicators include:

- Funding, donations, sponsorship: 42 mentions
- Greenhouse gas / CO₂ equivalent emissions: 42 mentions
- Total employees: 41 mentions
- Taxes and royalties: 30 mentions

The frequency of use of indicators is illustrated in Figure 6.

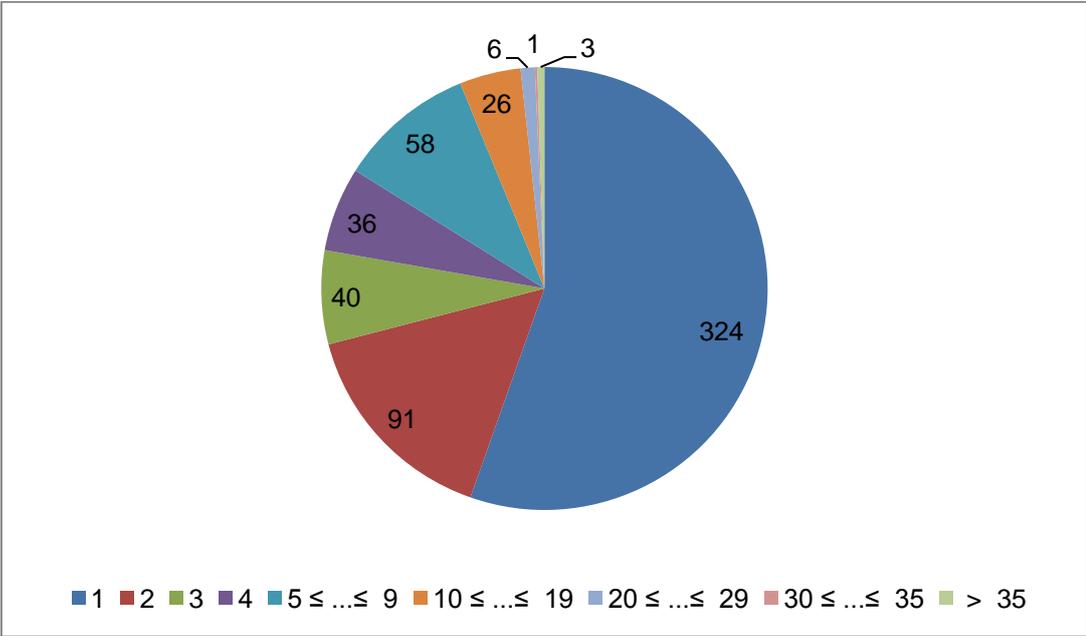


Figure 6: Frequency of use of indicators

With such a high diversity of indicators used, a focus was made on the 20 indicators that were used most frequently. Table 13 below details the top 20 indicators used in the reports and how they are highlighted.

TOP 20 indicators	Total	Intro	Score	Chart	Table	Box
Funding, donations, sponsorship	42	13	8	10	10	1
Greenhouse gas / CO ₂ equivalent emissions	42	3	11	17	10	1
Total employees	41	19	12	2	7	1
Taxes and royalties	30	3	3	2	20	2
Lost time injury frequency	29	5	7	9	6	2
Breakdown of donations	24	0	1	19	3	1
Employees by region	23	0	0	6	17	0
Total production	24	7	7	4	4	2
Environmental spills and releases	22	0	7	9	5	1
Total revenues	20	1	7	2	9	1
Number of women	19	0	0	7	11	1
Wages and benefits	19	1	2	3	12	1
All injury frequency	18	7	6	3	2	0
Energy use intensity	16	0	3	7	6	0
Greenhouse gas emissions intensity	15	1	2	9	3	0
Number of employees with disabilities	15	0	1	4	10	0
Number of aboriginal descent employees	15	1	2	4	8	0
Number of employees from visible minorities	15	0	1	4	10	0
Regulatory notifications and fines	14	3	2	0	8	1
Total assets	14	3	2	2	5	2

Table 13: Top 20 of highlighted indicators.

An analysis of Table 13 shows that similar issues can be illustrated with different indicators. Some themes can be seen in Table 13. For example, greenhouse gas (GHG) emissions can be illustrated by different indicators such as GHG / CO₂ equivalent emissions, CO₂ emissions (direct and indirect), or GHG emissions intensity. In this theme various indicators can be found, all slightly different. These indicators are:

- ✓ CO₂ emissions (direct / indirect / total)
- ✓ CO₂ emissions intensity
- ✓ CO₂ emissions (direct / indirect / total) by sources
- ✓ CO₂ emissions from vehicle fleet
- ✓ Greenhouse gas / CO₂ equivalent emissions
- ✓ Greenhouse gas emissions intensity

The total number of corporations that mentioned at least one of these indicators is 58 out of 94. This theme is the most illustrated in this sample. The second theme frequently illustrated is the contribution to the community. Indicators such as funding, donations and sponsorship, taxes and royalties, wages and benefits and breakdown of donations illustrate the

corporation's contribution to the community or the region. The health and safety theme is the third frequently mentioned theme in this sample, with indicators such as lost time injury frequency or all injury frequency. Finally, indicators describing employees, including those illustrating employee diversity, are also used quite often. However, diversity is not illustrated in the same way by different corporations. While a majority detailed all components (women, disabled, visible minorities and aboriginals), there are some examples of corporations that highlighted only a particular aspect of diversity. Indeed, the number of women indicator is more used than the other diversity indicators (disabled, visible minorities, aboriginals); Inmet Mining Corporation, Bombardier Inc., ARC and EnCana Corporation highlighted the number of women in their employees but they do not detail the other parameters of employee diversity. Another example is provided by the Bank of Montreal which presented in its scorecard all parameters of ethnic diversity but excluded the number of women. Finally, the number of aboriginal descent employees is sometimes not treated as the other ethnic parameters: Diavik Diamond Mines Inc and Syncrude Canada Ltd both specifically highlighted this indicator in introduction and in scorecards. All themes are discussed in more detail in section 5.2.5- Types of indicators.

Regarding the way the top 20 indicators are presented, indicators describing the corporation (total employees and total production for example) are mostly presented in the introduction. Tables are more used when a comparison or a breakdown has to be highlighted. Examples include taxes and royalties, employee diversity or employees by region. Charts are used a lot to illustrate breakdown (of donations for example) or trends over the past years: greenhouse gas (or CO₂ equivalent) emissions, lost time injury frequency and funding, donations, sponsorship are some examples. It is worth noting that all indicators in the top 5 are provided by all available means: introduction, scorecard, chart, table and box. This highlights that a variety of methods are used to highlight even the most used indicators.

5.2.2- Indicators near the beginning of the report

One key area of focus was on indicators highlighted at the beginning of the report either in a scorecard or in the CEO's introduction. It is worth noting that 31 reports do not highlight any indicators in the introduction or scorecard near the beginning of the reports. These reports are mainly a summary of activities for the reporting period. Although indicators may be found in other areas of the report, these 31 reports do not include scorecards and the CEO's introduction does not mention any measurable performance indicators. Moreover, 8 corporations do not highlight any indicators at all.

Of the remaining 63 reports, 9 corporations selected only one indicator to highlight in the introduction near the beginning of the report. In these cases, 8 different indicators were used,

revealing the extreme diversity in the information corporations choose to highlight. These indicators were: funding / donations / sponsorship, total employees (twice), greenhouse gas emissions, all injury frequency, number of trees planted, number of clients, number of employees hired, and customer reduction of greenhouse gases. Thirty five corporations highlighted between 2 and 9 indicators near the beginning of the report. For these corporations, it is worth noting that indicators were either in the introduction (28 reports) or in a scorecard (BCE Inc, ARC, Methanex Corporation, Export Development Canada, EnCana Corporation, Bank of Nova Scotia and Fondaction). None of them provided indicators in both the introduction and the scorecard. Twelve corporations highlighted between 10 and 19 indicators at the beginning of the report: in these cases indicators were found in scorecards, in the introduction, or in both. Finally, only 8 corporations highlighted more than 20 indicators near the beginning of the report. Table 14 provides further details on these 8 corporations. As illustrated by Table 14, higher numbers of indicators were highlighted in a scorecard than in the introduction.

Corporation's name	Indicators in introduction	Indicators in scorecard	Subtotal beginning
Hemlo Gold Mines Inc	3	28	31
Elk Valley Coal Corp.	0	28	28
BC Hydro	0	27	27
Teck Cominco Metals Ltd	4	23	27
CIBC	0	26	26
Bank of Montreal	0	25	25
Telus Corporation	0	23	23
Canada Post Corporation	0	21	21

Table 14: Corporations highlighting more than 20 indicators near the beginning of the report.

It is interesting to note that, even at the beginning of the report, there is no identified standard in the indicators that are reported. Indeed, out of the 94 reports, 285 different indicators can be found in the introduction or scorecard near the beginning of the report. There are 7 indicators mentioned 10 times or more in the introduction and scorecard. Six of them are in the top 20 indicators highlighted (funding, donations and sponsorship, greenhouse gas emissions, total employees, lost time injury frequency, all injury frequency, and total production). The seventh is “fatalities” (10 mentions), which is often mentioned in the introductions when corporations had to acknowledge and explain a fatal accident. The frequency of the most reported indicators is highlighted in Table 15. The only indicators presented more in the introduction than in the scorecard are funding and total employees.

Indicators	sub total	intro	scorecard
Funding, donations, sponsorship	21	13	8
Total employees	31	19	12
Greenhouse gas (or CO2 equivalent) emissions	14	3	11
Lost time injury frequency	12	5	7
Total production	14	7	7
All injury frequency	13	7	6
Fatalities	10	4	6

Table 15: Indicators highlighted more than 10 times at the beginning of the reports.

It is also worth noting that 122 indicators (21% of the total highlighted indicators) were found only near the beginning of the report. This means they are never particularly highlighted by charts, tables or bold characters. Only 16 of those 122 indicators were selected by more than one corporation.

5.2.3- Indicators highlighted in other areas

An analysis of the reports showed that there are 300 indicators that are illustrated exclusively in charts, tables or boxes. The 94 reports provided a total of 526 charts, 605 tables and 83 boxes. In 35 reports, some of the indicators illustrated in charts, tables or boxes were previously presented in the introduction or scorecard.

The 526 charts present 275 different indicators. Only 51 of them are used more than twice. Regarding the charts, the most frequently used indicators were:

- Breakdown of donations: 19 charts
- Greenhouse gas (or CO₂ equivalent) emissions : 17 charts
- Funding, donations and sponsorship: 10 charts
- Emissions of sulphur dioxide (SO₂): 9 charts
- Greenhouse gas emissions intensity: 9 charts
- Environmental spills and releases: 9 charts
- Lost time injury frequency: 9 charts
- Water consumption: 8 charts

Within these charts, the emissions of sulphur dioxide and the water consumption indicators are the only ones that are not in the top 20 of indicators used. Beside the top 20 indicators, the indicators frequently (more than twice) illustrated in charts focus primarily on environmental issues (45 percent of charts). Social indicators represent 28 percent of indicators illustrated more than twice in charts, whereas economic indicators represent only 11 percent. These charts not only highlight a punctual performance of the corporations, they also allow comparison with previous years. An example chart is provided in Figure 7. Charts could also show a trend toward an objective.

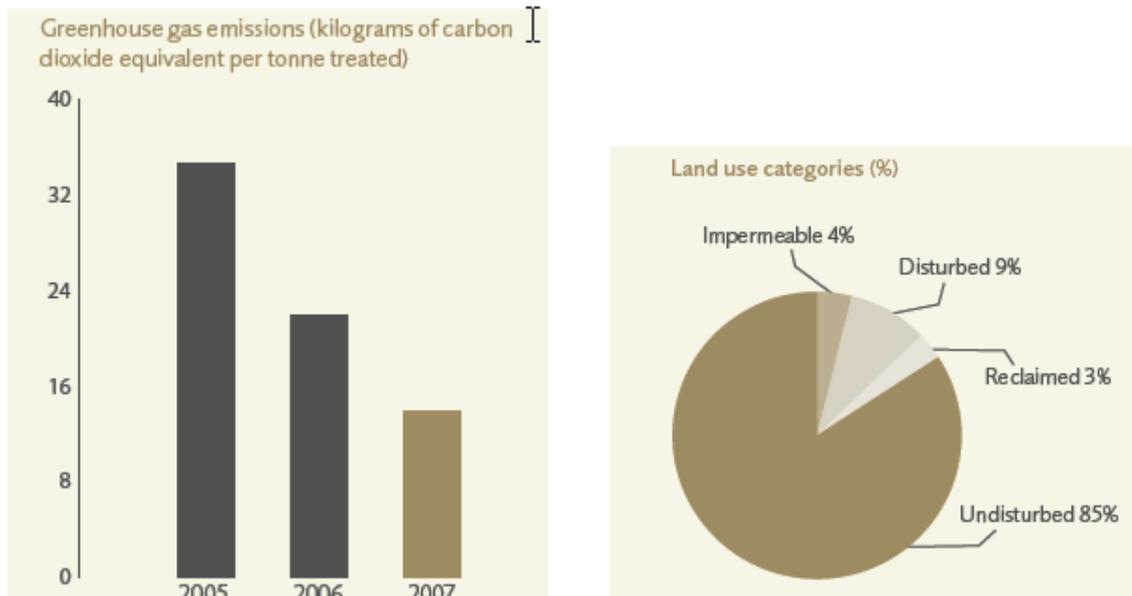


Figure 7: Examples of charts (GHG emissions and land use) provided by Goldcorp

Within the 605 tables, there are 288 different indicators presented. Only 64 of these indicators are used more than twice. The indicators that are most frequently found in tables are:

- Taxes and royalties: 20 tables
- Employees per regions: 17 tables
- Wages and benefits: 12 tables
- Number of women: 11 tables
- Funding, donations and sponsorship: 10 tables
- Greenhouse gas (or CO2 equivalent) emissions: 10 tables
- Diversity of employees (disabled, visible minorities): 10 tables
- Total revenues: 9 tables
- Number of executive women: 9 tables
- Diversity of employees (aboriginal): 8 tables

All these indicators are present in the top 20 indicators. Beyond the top 20 indicators, the indicators frequently (more than twice) illustrated in tables are roughly evenly distributed into the three dimensions of sustainability. Tables allow descriptions of facts and comparisons. Trends can be seen over the past years. An example table is provided in Figure 8.

Contributions & Donations (in thousands of CDN \$)						
	2002	2003	2004	2005	2006	2007
Various Charities	105	90	38	53	88	117
Scholarships	40	46	33	34	24	23
Hockey Club	20	20	15	15	26	31
Total	165	156	86	102	138	171

Figure 8: Example of table (breakdown of donations) provided by HudBay Minerals Inc.

Concerning the boxes, there is no visible pattern: the 83 boxes describe 74 different indicators. Only 9 of the indicators are used twice and all the others are used only once. Each corporation used boxes to highlight various indicators. Some of them are then detailed in tables or charts. Boxes are often a way to highlight an important fact for the company: total production, solid waste recycled, and investment in training are a few examples of the indicators highlighted in boxes.

5.2.4- Indicators and targets

Indicators are closely tied with goals and targets. Indeed, as mentioned in the literature review, indicators are designed to measure progress towards a specific goal. They can be used to provide information necessary for decision making, and are particularly useful in highlighting trends. However, in the studied sample, very few indicators are presented along with their corresponding target. Therefore, although a huge list of indicators has been found, in most cases the reader cannot know whether or not the corporation is progressing towards its own goals.

Fifteen out of 94 corporations (16%) are presenting targets for some of their indicators. However, targets were not provided for all of the indicators listed. The reports that presented the most targets are: BC Hydro, 55% of indicators are presented with targets (26/47); Telus Corporation, 44% (22/50); Alcoa Canada Primary Metals, 39% (9/23); and Diavik Diamond Mines Inc, 35% (6/17).

Out of the total 585 indicators, only 74 (12.6%) are in some cases presented with the corresponding targets. The lost time injury frequency indicator is highlighted in 29 reports, but only 4 times with a target. Among the most reported indicators, targets for greenhouse gas emissions, all injury frequency and regulatory notifications and fines are presented by 3 corporations each. Targets for fatalities are presented only twice for 12 mentions on this indicator. Six other indicators are presented twice with targets. This is illustrated in Table 16. Targets for the remaining 63 indicators are provided only once.

Indicators presented with corresponding targets	Total mentions	Number of targets
Lost time injury frequency	29	4
Greenhouse gas (or CO2 equivalent) emissions	33	3
All injury frequency	18	3
Regulatory notifications and fines	14	3
Fatalities	12	2
Reportable environmental incidents	10	2
Energy saved	9	2
Return on regulatory equity (%)	3	2
Transmission & distribution capital expenditures	2	2
Productivity ratio	2	2
Cell phone recycling	2	2

Table 16: Number of indicators reported with targets.

Regarding the presentation of targets, there are differences among industry sectors. The Mining sector is the only one where corporations are consistently presenting targets: 6 corporations out of 16 are publishing some of their targets. A limited number of corporations from Steel, Banks, Electricity, and from Transport, Communication and Services sometimes presented their targets. Others sectors of the studied sample never presented targets in their reports.

This low count of targets within the sample does not match with the theory described in the literature review (section 2.3.1). It raises questions on the real use of indicators in corporate activities and in sustainability reporting and on the reason why corporations would not disclose their targets along with their performance. At this stage conclusions would be premature. However, this lack of communication on targets could have several meanings; either the corporations do not want to publish and explain a disappointing performance, or the vision of sustainability and the related goals are not clear. Another meaning could be that the role of indicators is pure communication in sustainability reporting and indicators do not have any impact on corporations: the performance on the indicators does not steer any improvement. This study focused on information disclosed in sustainability reports: it would be very interesting to look deeper into corporate communications and to investigate in greater detail issues regarding the use of targets.

5.2.5- Types of indicators

As mentioned in section 5.1.2- Types of reports, the studied reports have different titles and thus different scopes. It is worth noting that all highlighted indicators have been considered and this might be an explanation for the very high diversity of indicators. Despite this, the 585 indicators can be split into the 3 dimensions of sustainability, namely:

environmental, economic and social issues. Figure 9 illustrates the breakdown of the indicators along the three dimensions of sustainability. Annual and accountability reports represent 10% of the total number of reports and this may help explain the pre-eminence of economic indicators.

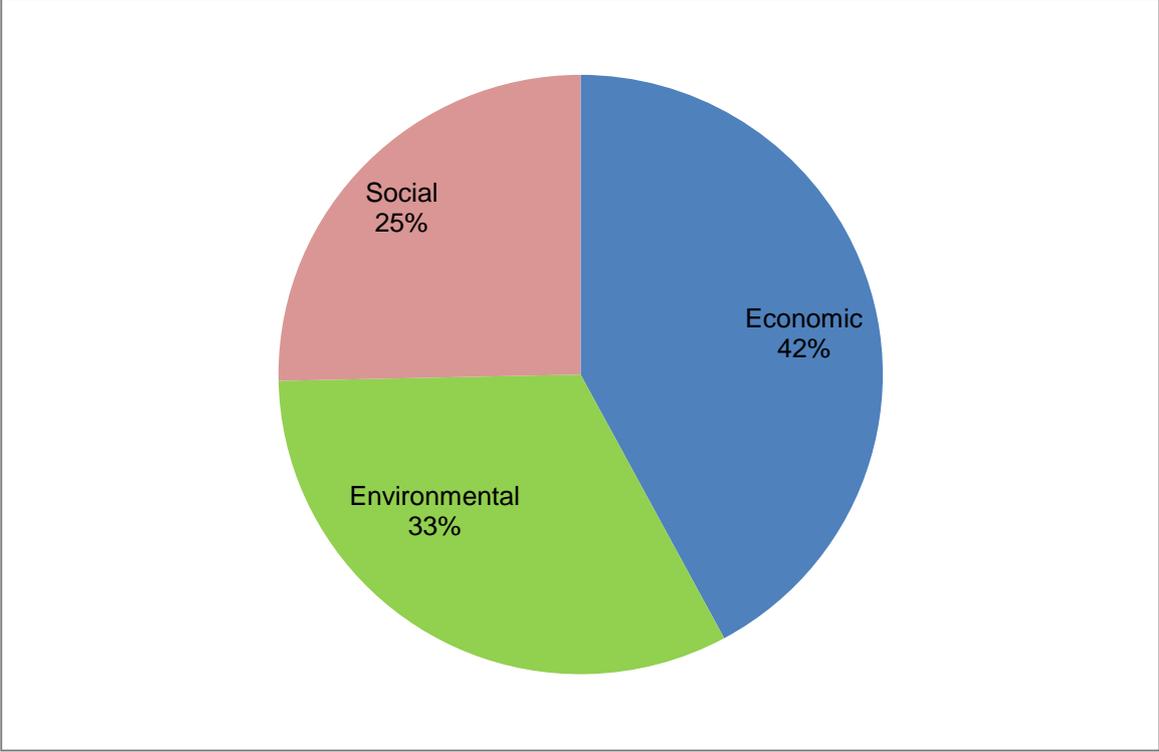


Figure 9: Breakdown of the 585 indicators along the 3 dimensions of sustainability.

It is worth noting that within the 20 indicators most often used, 50 percent focus on the social dimension of sustainability, whereas economic and environmental dimensions are worth 25 percent each. This proportion is not consistent with the global breakdown of indicators illustrated above. While there isn't any standard on the indicators to highlight in a sustainability report, this raises questions on a possible consensus regarding social indicators that are frequently used. Indeed, amounts and breakdown of donations, diversity within the employees' population and health and safety themes are very well represented in the top 20 indicators.

It is not the aim of this study to explain the differences between the different types of reports. However, Figure 10 shows the number of reports per type of report and the breakdown of indicators into the Triple Bottom Line categories.

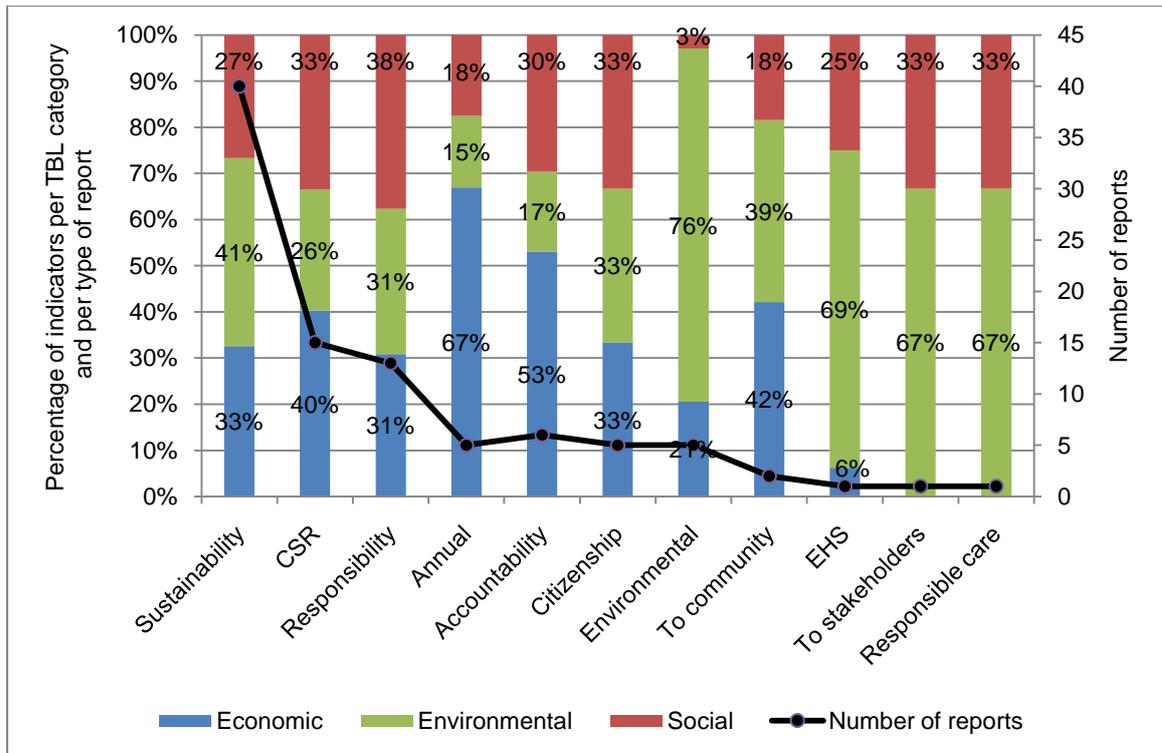


Figure 10: Percentage of indicators in the triple bottom line categories per type of report

As expected, a snapshot at Figure 10 shows that annual and accountability reports present a majority of economic indicators. It is also interesting to note that reports to community and CSR reports also put an emphasis on economic indicators. Responsible Care reports and reports to stakeholders (counting for 2 out of 94 reports) do not highlight any economic indicators and present a majority of environmental indicators. Interestingly enough, EHS and environmental reports present also a huge majority of environmental indicators but still highlight several economic indicators. Environmental reports show a low percentage of social indicators highlighted. However, the majority of reports are sustainability reports (40), CSR reports (15) and responsibility reports (13). These three types of reports represent 72% of the sample and though each of these types of reports shows a preeminent dimension, they present a reasonably balanced breakdown of indicators along the three dimensions of sustainability.

The breakdown of the indicators into the Triple Bottom Line categories is interesting. However, as mentioned in the literature review, the triple bottom line alone is not sufficient to look at various corporate activities. Indeed, many activities are relevant to more than one dimension of sustainability. Therefore, it is interesting to split the 585 highlighted indicators into different categories. These categories came up logically during the construction of the database. Indeed, these are recurrent themes corporations choose to highlight in their reports and it is interesting to look deeper into these categories and to link the categories with the use of indicators in corporate activities. Fifteen themes were identified:

- Interaction with community: this category regroups all indicators related to contributions, community investment, funding and sponsorship, employee personal giving to charitable organisations, etc.
- Emissions and effluents: indicators in this category deal with quality of air, emissions into air (especially CO₂ or GHG), effluents, non compliances, spills and storage of CO₂.
- Employees: these indicators describe ages, diversity and social profiles within employees' population, or provide detail on hiring processes, training, headcount, and participation and results to internal employees' survey.
- Energy: this category regroups all indicators related to energy costs, sources of energy, energy savings and energy efficiency. More than 50% of these indicators are related to energy consumption.
- Financial: statistics on company profile, details on shares and shareholders, operating costs and expenses, and information on capital, assets and debts are all in this category.
- Health and safety: these indicators detail accidents, exposure to hazards, lost time and medical treatment due to incidents and management of H&S in the corporation.
- Management: this category regroups all indicators linked to audits, projects, maintenance and environmental management systems or other management systems.
- Operations: all of these indicators are those chosen by corporations to describe their main activity. Depending on the industry sector, indicators as different as number of automated banking machines and global chemical consumption both belong to this operations category.
- Purchasing: all indicators linked to the selection, evaluation and location of suppliers, or the amount of goods and services purchased.
- Research and development: there are only two indicators in this category (number of patents and investment in R&D).
- Reclamation: this category regroups indicators related to the rehabilitation processes, the costs of reclamation and the status of land.
- Satisfaction: indicators in this category describe client or stakeholder satisfaction and the corporation's image.
- Service: all indicators linked to online services, interruptions or maintenance of service and customer calls resolution are grouped here.
- Waste: this category deals with waste generation, diversion of waste, landfill, incineration, hazardous waste.

- Water: indicators linked to water consumption or water treatment are grouped here.

Within these categories, some are entirely devoted to one dimension of sustainability (interactions with community, for example), whereas others address multiple dimensions. As an illustration, indicators describing employees, management and operations are linked to the three aspects of sustainability. Details are available in Table 17.

Categories	Economic	Environmental	Social	Total
Community			13	13
Emissions & effluents		63		63
Employees	4	1	60	65
Energy		27		27
Financial	139			139
H&S			52	52
Management	3	20	10	33
Operations	58	26	5	89
Purchasing	7		5	12
R&D	2			2
Reclamation		13		13
Satisfaction	16			16
Service	18	2		20
Waste		24		24
Water		17		17

Table 17: Links between the categories and the three dimensions of sustainability.

The number of indicators for each category is illustrated in Figure 11. The percentage of the total number of indicators represented by each category is also shown in the figure. An analysis of Figure 11 shows a pre-eminence of financial indicators. There are two possible explanations. First, annual and accountability reports represent a total of 10% of the sample and these reports tend to show more economic and financial indicators than the others. Secondly, banks and financial institutions count for 20% of the corporations and these sectors tend to provide greater details on their financial situation. In addition, this huge amount of financial indicators illustrates the lack of standard in the kind of information corporations chose to disclose. For example, within the bank sector, there is a total of 39 different financial indicators: CIBC highlighted 26 of them and had only 7 in common with the Bank of Nova Scotia. The number of indicators in the operations category is also important: this is due to the high variety of activities described in this category. Indeed, a wide range of different activities, from offering bank service to customers to extracting oil, are detailed in sustainability reports. A high number of indicators in a category can be due to either many corporations reporting on this topic or a lack of standard in the information to be disclosed (or both). Conversely, a low quantity of indicators in a category tends to show that either few corporations are mentioning

the subject or there is a consensus on the indicators to use. An example is the R&D theme: there are only two indicators; one of them is used by all four corporations mentioning their R&D activities.

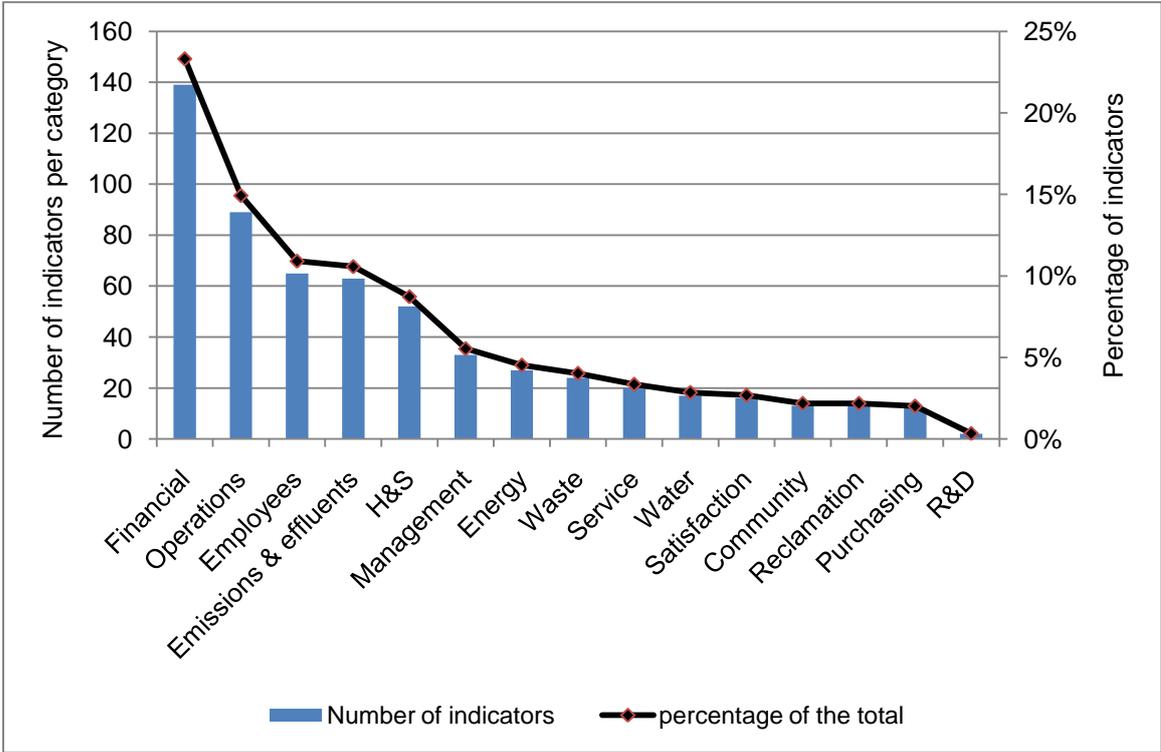


Figure 11: Number of indicators per theme and percentage of the 585 indicators

5.2.6- Indicators per industry sector

In this study, one of the research objectives was to find out whether or not there are differences in the indicators reported by industry sector. Sectors were identified based on the Corporate Register website classification and grouped as illustrated in Table 11 so that they would be homogeneous in topic and in size.

The mean number of indicators, minimum and maximum values along with the median values are given in Figure 12. The mean values show that engineering, construction and chemicals, banks and oil and gas sectors tend to use more indicators per report while finance and retail and food sectors seem to publish fewer indicators. Figure 12 shows close values of mean and median for sectors such as forestry and paper, banks, mining and oil and gas. It indicates that these sectors are more consistent in the number of indicators used. The relatively big differences between mean and median values (more than 30%) for the transport, communication and service, the retail and food and the finance sectors show that there is a discrepancy in the number of indicators corporations choose to highlight within these sectors.

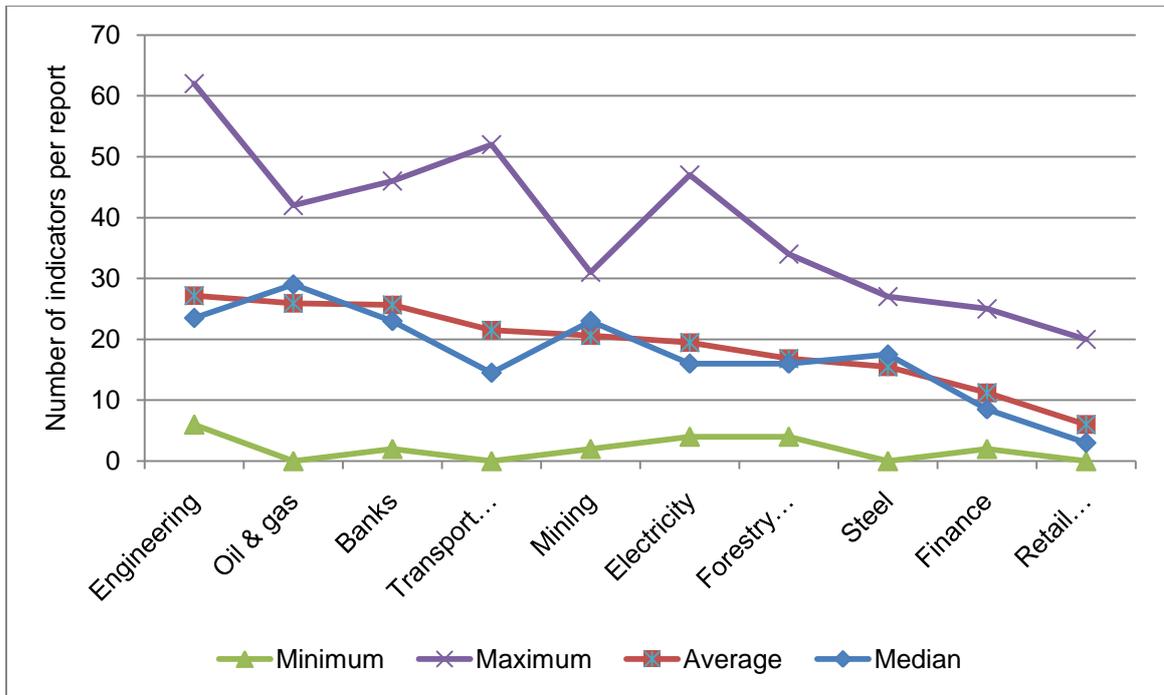


Figure 12: Number of indicators per report

Regarding the nature of indicators used by industry sector, Figure 13 illustrates the total number and breakdown of highlighted indicators by industry sector.

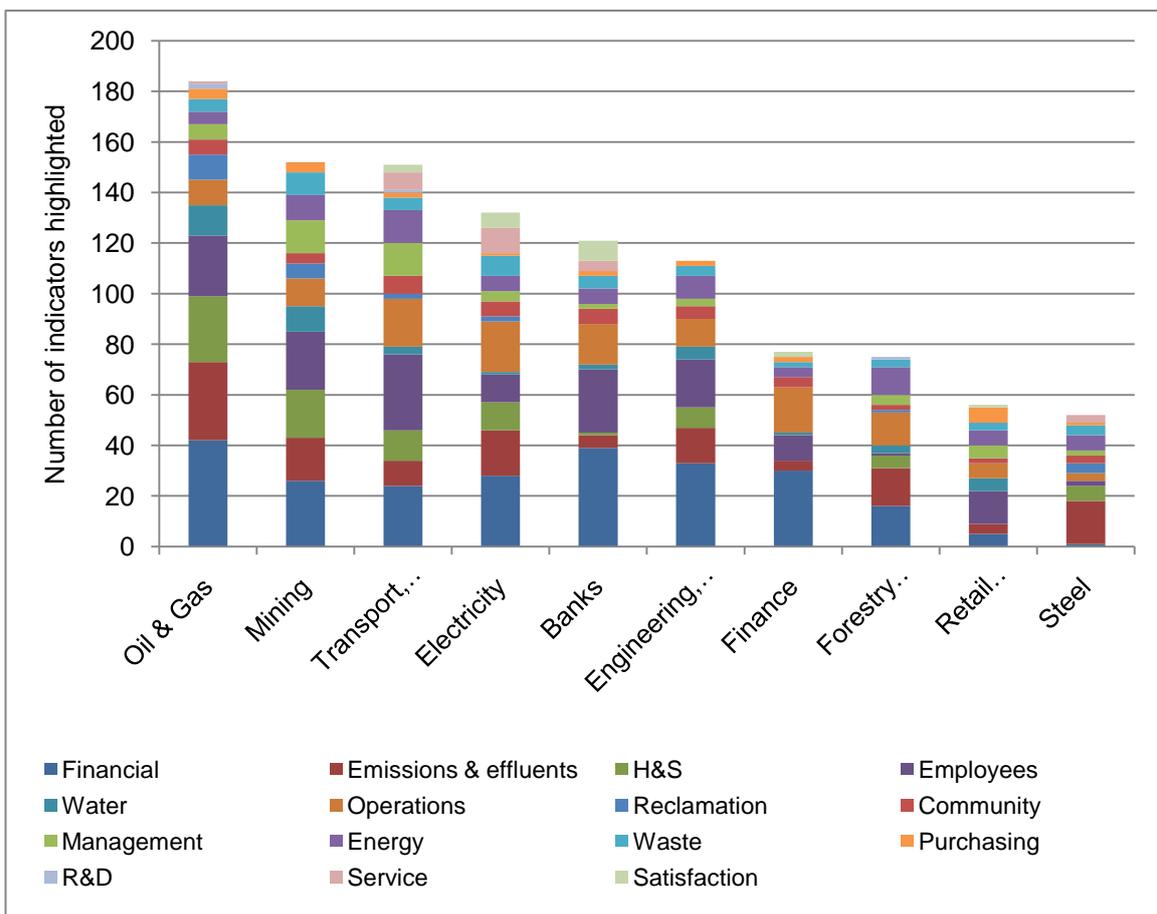


Figure 13: Number and breakdown of highlighted indicators by industry sector

From this chart, we can note that heavy industries such as oil and gas, mining, or electricity sectors present a high diversity of indicators. However, the number of indicators per report varies considerably within each industry sector.

Figure 13 clearly shows that financial indicators are preeminent in most sectors, except in the retail & food and the steel sectors. Categories of indicators such as emissions, H&S and employees are very well represented in every sector. The emissions category is the most prevalent in the steel sector. Performances on emissions are mentioned in all sectors. Heavy industrial sectors tend to detail their emissions per pollutant, whereas service sectors tend to focus on greenhouse gas emissions or greenhouse gas emissions intensity. H&S is well represented, particularly in the oil and gas, mining, electricity, and engineering, construction and chemicals sectors. It is also widely addressed in the service sectors, such as the banks. The employee indicators category is the most reported for retail and food and for transport, communication and services. Reclamation indicators are highlighted primarily by heavy industries and by forestry and paper. Corporations from engineering, construction and chemicals sector do not focus on these indicators. Indicators related to the interaction with the community are highlighted by all sectors. This category is quite consistent. Few indicators are highlighted in all activity sectors: amount of donations and breakdown of donations are among the most used indicators. Waste and purchasing related indicators are also consistent categories: total waste, quantity of recycled materials, amount of goods and services purchased, amount of goods and services purchased locally (or in Canada, or in Quebec, or in Northern territories). Every sector reported on energy. Based on the number of indicators, this category is, however, more important relatively in forestry and paper than in other sectors. Banks, electricity providers and companies from transports, communication and other services provide indicators that focus on their service capacities: access, continuity of service, advantages to their clients. R&D indicators are reported only in oil and gas, forestry and paper, and transports, communication and services.

Regarding the oil and gas sector, it is noticeable that the triple bottom line categories are balanced, with a very slight advantage for the environmental dimension: 36% of indicators used. More than 25 indicators were used in financial, emissions and effluents and H&S categories. With the exception of the satisfaction category, all other types of indicators were mentioned. The three most often used indicators in the oil and gas sector were: funding, donations and sponsorship (10 mentions for 13 corporations), greenhouse gas (or CO₂ equivalent) emissions (9/13) and total employees (8/13).

In the mining sector, indicators related to the environmental dimension of sustainability were represented in higher proportion than the social and economic dimensions. There was no mention of R&D or service indicators by any of the corporations in this sector. Beside financial indicators, employees, H&S and emissions and effluents indicators were well represented

categories of indicators. The lost time injury frequency indicator was the most used with 14 mentions in 16 reports. The all injury frequency number indicator was highlighted 9 times. The third indicator frequently used was funding, donations and sponsorship (7 times). Regarding the presentation of targets, the mining sector was the most consistent in presenting targets: 6 corporations out of 16 were publishing some of their targets.

The sector of transport, communication and services presented a relatively balanced representation of indicators across the triple bottom line. It is worth noting that the employees category of indicators counted 30 different indicators. The next most frequently represented categories were financial and operations. Among the 10 reports in this sector there was no indicator that was used really frequently. However, the funding, donations and sponsorship indicator was used 5 times and indicators describing employees diversity are mentioned 4 times.

In the electricity sector, there were many more indicators related to the economic dimension of sustainability (43%) than indicators regarding the social issues (23%). This was in part due to the BC Hydro annual report which counted 34 economic indicators. Financial and operations categories were the two preeminent classifications of indicators in the electricity sector. Besides those, the emissions and effluents, employees and H&S categories counted more than 10 indicators each. The three most used indicators were found only 4 times among the 9 reports. These were: environmental spills and releases, total revenues and all injury frequency.

The banks sector emphasized also the economic dimension of sustainability. This was in part due to the heavy emphasis on these indicators in the three accountability reports (out of 9 reports). The financial category was by far the most represented with 39 indicators. It is worth noting that employees and operations categories totalled more than 15 indicators each, while the others counted a maximum of 8 indicators. Within the most used indicators, the employees per region indicator was mentioned in 7 reports, such as the taxes and royalties indicators. Several indicators were used 6 times: number of branches, total employees, women executives, employees with disabilities, visible minorities' employees and distribution of donations. This sector showed a relatively widespread agreement regarding the indicators most frequently used.

Regarding the engineering, construction and chemical sector, the economic dimension was a little more developed than the two others. Beyond the financial category (34 indicators), the employees, emissions and effluents and operations categories were well represented. There were no indicators in R&D, reclamation, satisfaction and service. The greenhouse gas (or CO₂ equivalent) emissions indicator was mentioned in 5 out of 6 reports and energy consumption was reported 4 times. Several indicators were reported 3 times: regulatory notifications and fines, total employees, employees by region, total revenues, total assets, lost

time injury frequency, hazardous waste and water consumption.

In the finance sector, the economic dimension was preeminent with 64% of the indicators reported. This was due to the 3 accountability reports and 2 annual reports (out of 10 reports) and to the type of activities in these corporations. After the financial category (30 indicators), the two most represented categories were operations (18 indicators) and employees (10 indicators). There were no indicators in H&S, management, R&D and reclamation and there were 4 or less indicators in each remaining category. The most 3 frequently used indicators were: funding, donations and sponsorship (5 mentions), total employees (5 mentions) and number of individual clients (4 mentions).

The environmental dimension of the forestry and paper sector contained the majority of reported indicators with 53% of the indicators used. The social dimension counted only 12%. Financial and emissions and effluents were the most important categories of indicators, with 16 and 15 indicators respectively. Purchasing, satisfaction and service were not represented. The greenhouse gas (or CO₂ equivalent) emissions indicator was mentioned by all 6 corporations in this sector. Total suspended solids and biochemical oxygen demand indicators were both highlighted in 4 reports.

In the retail and food sector, the environmental dimension counted more indicators than the economic and social dimensions (41%). The employees category was the most represented with 13 different indicators, while all other categories counted 6 or less indicators each. There were no indicators in the H&S, R&D, reclamation and service categories. This sector was one of the least homogeneous; over the 11 reports, the most used indicator was funding, donations and sponsorship and it was highlighted only 4 times. The low repetition rate of indicators is an indication of a lack of standards on reporting. In addition, the most used indicator is not sector specific.

In the steel sector, there was a large majority of indicators belonging to the environmental dimension (67%). The emissions and effluents category accounted for a majority of indicators reported. Except for the R&D and service categories that were not represented, all other categories counted between 1 and 6 indicators. This sector counted only 4 corporations. The greenhouse gas (or CO₂ equivalent) emissions indicator was highlighted by 3 of them. Several indicators were also reported by 2 corporations. These were: total fluoride emissions, total PAH emissions, energy consumption, all injury frequency, total production and number of planted trees.

Statistics for all sectors are provided in Appendix C.

5.3- Existing sustainability indicators programs

The second objective of this study was to explore the extent to which Canadian corporations are using existing sustainability indicators programs. With respect to this aim,

several sub-questions were explored:

- Is the corporation reporting on indicators suggested by the GRI?
- Is the corporation using composite indicators?
- Is the corporation using the balanced scorecard?
- Is the corporation using existing management systems such as ISO 14001, SA 8000 and AA 1000?
- Is the corporation using The Global Compact?

To address these questions, keywords such as ISO 14001, ISO 14031, OHSAS 18001, SA 8000, AA 1000, Z 1000, SFM, DJSI and Global Compact were used to run the Concordance software in order to find all occurrences.

5.3.1- Is the corporation reporting on indicators suggested by the GRI?

Forty-five out of 94 corporations (47.9%) are using the GRI G3 reporting guidelines. Thirty-one of them (68.9%) identify the specific GRI indicators they are using directly in the report. Within these 31 corporations, 2 corporations are reporting part of the GRI indicators directly in their report and some indicators on their website. These corporations are Hydro Quebec (47 indicators on their website) and EnCana Corporation (21 indicators on their website). Another 4 corporations indicate the GRI indicators they used are available on their website. The remaining 10 corporations do not detail which GRI indicators they choose to report on. Table 18 lists the number of corporations per sector that report their performance on the GRI indicators. All sectors do not report equally on the GRI. While banks, engineering, construction and chemicals, mining, transport, communications and services, and oil and gas are well represented, companies from electricity and retail and food are not using the GRI in large numbers.

Industry Sector	Percentage of corporations presenting GRI indicators → number of corporations
Mining	31% → 5
Oil and gas	46% → 6
Banks	44% → 4
Electricity	22% → 2
Forestry & Paper	33% → 2
Engineering, construction and chemicals	50% → 3
Finance	30% → 3
Steel	0% → 0
Transport, communication and services	50% → 5
Retail & Food	9% → 1
Total	33% → 31

Table 18: Number of corporations per sector that present their GRI indicators.

Within the 79 GRI indicators, all indicators are used at least once. The least frequently used indicators are reported by 5 corporations. These indicators are EN25, PR2 and PR4.

Each corporation reported on between 10 and 79 GRI indicators. Among the corporations that reported on more than 50 GRI indicators, there are:

- Hydro Québec: 79 indicators (including 47 on their website)
- Potash Corporation of Saskatchewan Inc: 70 indicators
- TransAlta Corporation: 66 indicators
- Goldcorp Inc: 66 indicators
- Telus Corporation: 63 indicators
- TD Financial Group: 60 indicators
- Talisman Energy Inc: 59 indicators
- Kinross Gold Corporation: 55 indicators
- Greater Toronto Airports Authority: 52 indicators
- Xstrata Copper Canada: 51 indicators
- EnCana Corporation: 50 indicators (including 21 on their website)

A detailed list of the GRI indicators reported is available in Appendix D. It is worth noting that the most often cited indicators are EC1 (Direct economic value generated and distributed) with 28 mentions out of the 31 reporting corporations, LA1 (Total workforce by employment type, employment contract, and region), EN16 (Total direct and indirect greenhouse gas emissions by weight) and EN3 (Direct energy consumption by primary energy source) with 27 mentions each and finally LA13 (Composition of governance bodies and breakdown of employees per category) with 26 mentions. It is interesting to note that, these 5 GRI indicators are consistent with 12 of the most frequently highlighted indicators in the reports as explained in section 5.2.1. Table 19 illustrates the similarities between these GRI indicators and the indicators frequently highlighted.

GRI indicators	Indicators highlighted in reports
EC1 (Direct economic value generated and distributed)	Funding, donations and sponsorship Wages and benefits Taxes and royalties Total revenues
LA1 (Total workforce by employment type, employment contract, and region),	Total employees Employees by region
EN16 (Total direct and indirect greenhouse gas emissions by weight)	Greenhouse gas (or CO ₂ equivalent) emissions
EN3 (Direct energy consumption by primary energy source)	Energy use intensity
LA13 (Composition of governance bodies and breakdown of employees per category)	Number of women Number of employees with disabilities Number of aboriginal descent employees Number of employees from visible minorities

Table 19: Similarities between GRI indicators and corporate indicators frequently highlighted.

However, it was worth looking deeper into the use of GRI indicators by categories and by industry sectors. With respect to economic indicators, Table 20 below shows the frequency of use of the GRI indicators in all sectors and Table 21 illustrates the frequency of use per industry sector:

		Reports
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	28
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	19
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	19
EC4	Significant financial assistance received from government.	18
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	16
EC3	Coverage of the organization's defined benefit plan obligations	14
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	13
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	11
EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.	6

Table 20: Frequency of use of the GRI economic indicators.

An inspection of Table 20 shows that EC1 (Direct economic value generated and distributed) is used in all sectors, by almost all corporations. Only three corporations from mining, banks and forestry and paper sectors decided not to publish this indicator value directly in their report. The least used indicator is EC5.

Sectors (number of corporations reporting on GRI)	Number of mentions of the indicators								
	EC 1	EC 2	EC 3	EC 4	EC 5	EC 6	EC 7	EC 8	EC 9
Banks (4)	3	2	2	1		1	1	2	1
Electricity (2)	2	2	2	2	2	2	2	2	1
Engineering, construction and chemicals (3)	3	1	2	2	1	2	2	2	2
Finance (3)	3	1	1	2	2		1	1	2
Forestry & Paper (2)	1	1				1			
Mining (5)	4	3	1	5	1	5	5	4	2
Oil and gas (6)	6	4	3	2		5	2	2	2
Retail & Food (1)	1					1			
Transport, communication and services (5)	5	5	3	4		2		3	1
Total (31)	28	19	14	18	6	19	13	16	11

Table 21: Frequency of use of the GRI economic indicators per industry sector.

Table 21 shows differences in the use of economic indicators by industry sector. While

corporations in the bank sector reported on all economic indicators except EC5, corporations from the finance sector did not report on EC6. The two corporations from the electricity sector both reported on almost all indicators, only EC9 was not disclosed by TransAlta Corporation. Similarly, all economic indicators are disclosed at least once by corporations in engineering, construction and chemicals. The two corporations in the forestry and paper sector did not choose the same economic indicators to report on. Mining is the only sector where the most used GRI economic indicators are EC4, EC6 and EC7. Regarding the oil and gas sector, EC1, EC6 and EC2 are the most frequently disclosed three indicators. The retail and food sector counted only one corporation reporting on the GRI indicators: Coca-Cola Bottling Company. This corporation only reported on EC1 and EC6. Finally, the transport, communication and services sector reported mostly on EC1, EC2 and EC4.

This would tend to show that EC1 is highly relevant for Canadian corporations. Indeed, the direct generated value is a notion that is very present in the 585 indicators highlighted by corporations. Beyond indicators such as funding, donations and sponsorship, wages and benefits, taxes and royalties and total revenues, some corporations highlighted their own local economic value indicators. For example, an indicator such as investment with economical impact in Québec (used by Fondation and Investissement Québec) can be seen as an adaptation of the GRI EC1 indicator. In addition, corporations from the oil and gas and mining sectors, which are operating in the Yukon, Northwest Territories and in the Northern Alberta, often explained in their reports their strong willingness to contribute to First Nations' wealth. Their investments in the community are developed in their reports and through the EC1 indicator.

Regarding environmental indicators, Table 22 shows the frequency of use of each environmental indicator for all sectors and Table 23 details the frequency of use of these indicators per sector. A snapshot at Table 22 shows that EN16 and EN3 are the most used GRI environmental indicators. This is consistent with the database of 585 indicators used by Canadian corporations. Indeed, greenhouse gas emissions and energy consumption are among the most frequently highlighted indicators.

		Reports
EN16	Total direct and indirect greenhouse gas emissions by weight.	27
EN3	Direct energy consumption by primary energy source.	27
EN8	Total water withdrawal by source.	23
EN4	Indirect energy consumption by primary source.	22
EN22	Total weight of waste by type and disposal method.	22
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	22
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	22

		Reports
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	21
EN23	Total number and volume of significant spills.	21
EN5	Energy saved due to conservation and efficiency improvements.	19
EN20	Nox, SOx, and other significant air emissions by type and weight.	19
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	18
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	17
EN1	Materials used by weight or volume.	16
EN21	Total water discharge by quality and destination.	16
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	15
EN13	Habitats protected or restored.	15
EN9	Water sources significantly affected by withdrawal of water.	14
EN2	Percentage of materials used that are recycled input materials.	12
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	12
EN10	Percentage and total volume of water recycled and reused.	12
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	12
EN17	Other relevant indirect greenhouse gas emissions by weight.	12
EN19	Emissions of ozone-depleting substances by weight.	12
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	12
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	11
EN30	Total environmental protection expenditures and investments by type.	9
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations by level of extinction risk.	7
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	7
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.	5

Table 22: Frequency of use of the GRI environmental indicators.

Table 23 helps clarify the differences between the sectors. In the bank sector, there is a wide range in the number of GRI environmental indicators reported. While the Bank of Montreal did not report on any of these indicators, the TD Financial Group reported on 15 of them, but not on the EN16. The last two corporations each selected three indicators: CIBC reported on EN3, EN4 and EN16 and National Bank of Canada selected EN5, EN7 and EN26.

The reports show that there is no consistent application of the GRI in this sector. Within the finance sector (real estate, investment, insurance and life assurance corporations) 7 indicators are reported by all 3 corporations: EN1, EN2, EN3, EN4, EN7, EN16 and EN22. This reveals that corporations in this sector are particularly concerned by indirect energy use and material use. EN19, EN25, EN27 and EN 30 were not selected in this sector. In the electricity sector, the response rate on the GRI environmental indicators is high: Hydro Quebec reported on all GRI environmental indicators (including 10 on their website) and TransAlta Corporation selected 25 indicators to report on. While the number of electricity companies reporting on the GRI is too small to draw any general conclusions, this would tend to illustrate that all environmental indicators are relevant to the electricity sector. In the engineering, construction and chemicals sector, 7 indicators are reported by all corporations: EN3, EN5, EN8, EN16, EN18, EN22 and EN 26. These indicators, related to direct energy use, greenhouse gas emissions, waste and water consumption are highly relevant to these industries. EN7, EN17 and EN29 were not selected in this sector. The two corporations in the forestry and paper sector selected 6 common indicators: EN8, EN16, EN20, EN23, EN26 and EN28. Mining is the only sector where the EN21 (water discharge) is reported by all corporations. The other most reported indicators are EN3, EN8, EN11, EN16 and EN23. Regarding the oil and gas sector, there are only 3 indicators disclosed by all corporations. These are EN16, EN 23 and EN28. In the retail and food sector, Coca-Cola Bottling Company selected 16 GRI environmental indicators but they did not report on EN16. Finally, the transport, communication and services sector mostly reported on EN3, EN4, EN16 and EN26.

Sectors (number of corporations reporting on GRI)	Number of mentions of the indicators																													
	EN 1	EN 2	EN 3	EN 4	EN 5	EN 6	EN 7	EN 8	EN 9	EN 10	EN 11	EN 12	EN 13	EN 14	EN 15	EN 16	EN 17	EN 18	EN 19	EN 20	EN 21	EN 22	EN 23	EN 24	EN 25	EN 26	EN 27	EN 28	EN 29	EN 30
Banks (4)	1	1	2	2	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Electricity (2)	2	1	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	1	2	2
Engineering, construction and chemicals (3)	1	1	3	2	3	1	3	1	1	1	1	2	1	1	1	3	3	1	2	2	3	1	1	1	1	3	1	2	1	1
Finance (3)	3	3	3	3	1	1	3	2	2	1	2	1	1	1	1	3	2	2	1	2	3	1	1	1	2	2	2	2	2	2
Forestry & Paper (2)	1	1	1	1	1	1	2								2	1	1	2	1	1	2	1	1	2		2			2	
Mining (5)	4	2	5	4	3	3	1	5	4	3	5	4	3	4	2	5	3	4	3	4	5	4	5	2	1	4	2	4	2	2
Oil and gas (6)	1	1	5	2	2	5	2	5	3	4	1	2	3	4	6	2	4	1	5	2	4	6	2	1	2	6	1	2	1	2
Retail & Food (1)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Transport, communication and services (5)	3	2	5	5	4	3	3	3	1	1	2	3	2	3	2	5	3	4	4	3	1	4	3	2	2	5	1	2	3	2
Total (31)	16	12	27	22	19	18	12	23	14	12	12	15	15	17	7	27	12	21	12	19	16	22	21	11	5	22	7	22	12	9

Table 23: Frequency of use of the GRI environmental indicators per sector.

Regarding social indicators, Table 24 shows the frequency of use of each social indicator for all sectors and Table 25 to 27 detail the frequency of use of these indicators per sector.

		Reports
LA1	Total workforce by employment type, employment contract, and region.	27
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	26
LA7	Rates of injury, occupational diseases, lost days, absenteeism and total number of work-related fatalities, by region.	25
LA4	Percentage of employees covered by collective bargaining agreements.	25
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	23
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	22
HR4	Total number of incidents of discrimination and actions taken.	21
LA10	Average hours of training per year per employee by employee category.	20
LA2	Total number and rate of employee turnover by age group, gender, and region.	20
SO5	Public policy positions and participation in public policy development and lobbying.	18
LA8	Education, training, counselling, prevention and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	17
LA12	Percentage of employees receiving regular performance and career development reviews.	16
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	16
HR5	Operations identified in which the right to exercise freedom of association or collective bargaining may be at significant risk, and actions taken to support these rights.	16
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	16
SO4	Actions taken in response to incidents of corruption.	16
SO2	Percentage and total number of business units analyzed for risks related to corruption.	15
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	15
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	14
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	14
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	14
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	13
HR6	Operations identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour.	13
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	13
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	13
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and	13

		Reports
	sponsorship.	
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	12
HR7	Operations identified as having significant risk for incidents of forced or compulsory labour, and measures taken to contribute to the elimination of forced or compulsory labour.	12
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	12
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	12
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	11
S07	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes.	11
LA14	Ratio of basic salary of men to women by employee category.	10
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that underwent human rights screening.	10
LA9	Health and safety topics covered in formal agreements with trade unions.	9
PR3	Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.	9
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	8
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.	6
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services, by type of outcomes.	5
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.	5

Table 24: Frequency of use of the GRI social indicators.

An analysis of Table 24 shows that labour related indicators are more often disclosed than other categories of social indicators. LA1, LA13 and LA7 are the three most employed labour related indicators. This is highly consistent with the indicators highlighted by Canadian corporations. These GRI indicators correspond to the employees by region, employees' diversity indicators and all injury frequency.

Number of mentions of the indicator														
Sectors (number of corporations reporting on GRI)	LA 1	LA 2	LA 3	LA 4	LA 5	LA 6	LA 7	LA 8	LA 9	LA 10	LA 11	LA 12	LA 13	LA 14
Banks (4)	3	1	1	1	1	1	1	2	1	2	3	2	4	
Electricity (2)	2	2	2	2	2	1	2	2	2	2	2	2	2	2
Engineering, construction and chemicals (3)	3	2	1	3	1	2	3	1	1	3	2	2	3	
Finance (3)	3	3		3	1		1	2	1	2		1	2	3
Forestry & Paper (2)				1	1		1						1	
Mining (5)	5	3	2	5	2	5	5	3		4	3	3	3	1
Oil and gas (6)	5	4	2	5	2		6	3	1	2	2	1	5	1
Retail & Food (1)	1	1		1	1	1	1					1	1	
Transport, communication and services (5)	5	4	4	4	2	3	5	4	3	5	4	4	5	3
Total (31)	27	20	12	25	13	13	25	17	9	20	16	16	26	10

Table 25: Frequency of use of the GRI labour indicators per sector.

Number of mentions of the indicator										
Sectors (number of corporations reporting on GRI)	HR 1	HR 2	HR 3	HR 4	HR 5	HR 6	HR 7	HR 8	HR 9	HR 10
Banks (4)			1	2	1	1	1	1	1	1
Electricity (2)	1	2	2	2	2	2	2	2	1	2
Engineering, construction and chemicals (3)	1	3	2	2	1	1				
Finance (3)	2	3	1	3	3	1	1			
Forestry & Paper (2)					1	1	1	1		
Mining (5)		2	2	3	5	4	3	3	2	3
Oil and gas (6)		1	1	2	3	1	1	1	1	2
Retail & Food (1)	1					1	1	1		
Transport, communication and services (5)		2	2	4	4	2	2	2	3	4
Total (31)		10	14	16	21	16	13	12	8	12

Table 26: Frequency of use of the GRI human right indicators per sector.

Sectors (number of corporations reporting on GRI)	Number of mentions of the indicator							
	SO 1	SO 2	SO 3	SO 4	SO 5	SO 6	SO 7	SO 8
Banks (4)	1	3	3	1	2	2	1	1
Electricity (2)	2	2	2	2	2	1	2	2
Engineering, construction and chemicals (3)	2	1	2	1	2	2	1	1
Finance (3)	2	1	2	2	1			2
Forestry & Paper (2)	1		1	1	1			
Mining (5)	5	3	4	4	3	2	3	4
Oil and gas (6)	5	2	3	2	5	3	1	2
Retail & Food (1)	1		1				1	
Transport, communication and services (5)	4	3	4	3	2	3	2	3
Total (31)	23	15	22	16	18	13	11	15

Table 27: Frequency of use of the GRI social indicators per sector.

Sectors (number of corporations reporting on GRI)	Number of mentions of the indicator								
	PR 1	PR 2	PR 3	PR 4	PR 5	PR 6	PR 7	PR 8	PR 9
Banks (4)	1	1	1	1	2	1	1	1	1
Electricity (2)	1	1	1	2	2	2	2	2	2
Engineering, construction and chemicals (3)	3	1	1	1	3	1	1	2	1
Finance (3)	1		1		2	1	1	2	2
Forestry & Paper (2)									
Mining (5)	2	1	1			1		1	2
Oil and gas (6)	2		2			2		1	2
Retail & Food (1)	1		1		1	1			
Transport, communication and services (5)	3	1	1	1	4	4	1	2	2
Total (31)	14	5	9	5	14	13	6	11	12

Table 28: Frequency of use of the GRI product related indicators per sector.

Analysis of Table 25, Table 26, Table 27 and Table 28 does not reveal many differences between the sectors. In the banks sector, TD Financial group is the only corporation which reported on almost all GRI indicators in this dimension (LA14, HR1 and SO4 are missing). The other 3 corporations selected between 5 and 8 indicators. All of them reported on the LA 13. In the finance sector, all corporations reported on LA1, LA2, LA 4 and LA 14, as well as on HR2, HR4 and HR5. In the electricity sector, Hydro Quebec reported on all indicators, including 31 on their website. TransAlta Corporation reported on all indicators except LA6, HR1, HR8, SO6, PR1, PR2 and PR3. The corporations in the engineering, construction and chemical sector

reported on several indicators: LA1, LA4, LA7, LA10, LA 13, HR2, PR1 and PR5. The 5 labour related indicators selected by this sector are the most frequently used overall. The two corporations working in the forestry and paper sector selected very few indicators: Domtar selected 3 indicators, including LA7, while Catalyst Paper Corporation picked 9 other indicators including LA13. In the mining sector, all 5 corporations selected LA1, LA4, LA6, LA7, HR4 and SO1. Regarding the oil and gas sector, there is only one indicator selected by all corporations. This is LA7. LA6, PR4, PR5 and PR7 were not selected in this sector. In the transport, communication and services sector, LA1, LA7, LA 10 and LA13 were selected by all corporations.

Analysis of Table 25, Table 26, Table 27 and Table 28 shows that among the labour related indicators LA1, LA4, LA7, LA10 and LA 13 are used very often in all sectors (except LA1 in Forestry and paper). Compared to the other categories of GRI social indicators (HR, SO and PR), the labour related indicators have a better reporting rate. HR3, HR4 and HR5 are regularly disclosed, as are SO1 and SO3. Product related indicators have a lower disclosure rate. In this category PR1 and PR5 are the most frequently reported.

Out of the 94 corporations studied, almost one third published some of the GRI indicators in their reports whether they are economic, environmental or social related. There is a better and more homogeneous response rate on the economic indicators. Environmental indicators are quite often disclosed and indicate important differences between sectors. Social indicators are somewhat used. However, there is no identified sector related pattern.

5.3.2- Is the corporation using composite indicators or indices?

Within the population of reports, 12 corporations are reporting on their use of composite indicators or indices (12.8%). The complete list of indices used is provided in Table 29. Among these corporations, the indices are focused on a variety of measures. The most frequent are the measurement of customer satisfaction and loyalty (4/12) and employee satisfaction and engagement (3/12). Further details on the indices reported are provided in the next few paragraphs. Table 29 also shows that indices are more used in the bank and electricity sectors.

For example, the Bank of Nova Scotia discusses the results of its customer loyalty index, “as measured by customers’ responses to four key questions” and its employee satisfaction index, “as measured by our internal ViewPoint survey”. Similarly, Canada Post “introduced the customer value index (...) which measures customer loyalty” and measures progress on employee engagement, by using “an index that is based on anonymous responses to several questions contained in an annual employee survey”. The index developed by Xstrata Nickel “takes into account employee responses to questions regarding their motivation to do a good

job and help the Company succeed, their job satisfaction and fulfillment, their desire to be involved, their pride to work for Xstrata Nickel, and other related topics”. As part of their employee management, Bank of Montreal uses a Learning Index with which they are measuring “the degree to which our employees believe they can access the learning they need (...) [and] how well employees believe they can apply learning on their jobs”. Similarly, the Diversity Index used by the Bank of Nova Scotia “measures employee perceptions of workplace fairness, respect, and manager sensitivity to work/life demands.” TD Financial Group explains that the results of its Customer Experience Index (CEI) and Customer Service Index (CSI) “are used to drive improvement within individual branches, offices and electronic channels.” TD also details the components of its employee experience index. In the introduction to its report, Barrick Gold mentions that “the data are aggregated globally and intensity indices are used where relevant” but does not give any further explanations.

Corporations	Index used
BC Hydro	ASAI: Average System Availability Index CAIDI: Customer Average Interruption Duration Index CEMI-4: Customers Experiencing Multiple Interrupts CELID-6: Customers Experiencing Longest Interruption Duration CSAT: Customer satisfaction Employee Engagement Overall Customer Satisfaction index
Hydro Québec	Employee motivation and satisfaction Public satisfaction index
Ontario Power Generation	Environmental Performance Index
Toronto Hydro Corporation	SAIDI: System Average Interruption Duration Index SAIFI: Average Interruption Frequency Index
Imperial Oil Ltd	Energy intensity index
Bank of Montreal	Learning index
Bank of Nova Scotia	The Scotiabank Customer Loyalty Index Employee Satisfaction Index Diversity Index
Canadian Imperial Bank of Commerce (CIBC)	Employee Commitment Index which measures the strength of our employees’ relationship with the organization,
TD Financial Group	Customer Experience Index (CEI) Customer Service Index (CSI).
Canada Post Corporation	Customer Value Index (CVI) Employee Engagement Index
Barrick Gold Corporation	Intensity indices
Xstrata Nickel	Employee Engagement Index

Table 29: List of indices used by Canadian corporations.

BC Hydro provide some discussion regarding their customer satisfaction index: “BC Hydro introduced a new method for calculating the CSAT index in fiscal 2008. Customer Satisfaction (CSAT) is defined as the percentage of customers who rated BC Hydro as “very satisfied” or “satisfied” on a four-point verbal scale across an equally weighted “index” of five key drivers of customer satisfaction. Customers are divided into three segments: residential, small/medium business and key accounts; all three segments are equally weighted and reported as a four-

quarter rolling average using a continuous surveying methodology”.

In a few cases, indices used by corporations are developed at the sector level and used as industry standards. For example, BC Hydro reported its use of a reliability composite indicator which is roughly defined as “a combination of Average System Availability Index (ASAI) and Customer Average Interruption Duration Index (CAIDI)”. Two similar sub indices (system average interruption duration and system average interruption frequency indices) are also used by Toronto Hydro which provides the following explanation: “the total monthly number of customer power interruptions is divided by the number of customers served to obtain the monthly SAIFI.” A second example is the energy index used by Imperial Oil: “The energy intensity index is a measure of energy efficiency for petroleum refineries. A lower energy intensity index number indicates a more energy-efficient facility.” However, while the results are provided, the method used to calculate the composite indicators is not given.

Finally, Ontario Power Generation is the only corporation that discusses the measure of an Environmental Performance Index: “OPG’s environmental practices are assessed annually using an Environmental Performance Index (EPI). The EPI was first introduced in 2001, and it is based upon weighted scores calculated relative to voluntary performance benchmarks for spills, regulatory compliance, energy efficiency, radiation emissions and waste management. The scoring system ranges from zero to 150, with higher scores reflecting better performance. An overall score of 100 indicates that, on average, benchmarks were met, scores greater than 100 indicate performance better than benchmarks, and scores less than 100 indicate performance that did not meet benchmarks.”

The methods used to collect data and build these indices can be split in three different types: answers to surveys, operations records and use of existing indicators. The customer satisfaction, employee satisfaction and employee engagement indices are developed based on survey responses. As far as it was explained in the reports, these indices are global scores or an average of each response obtained. The interruptions or availabilities of systems indices appears also to be a simple division of the number of interruptions by the number of customers. The calculation of intensity indices mentioned by Barrick Gold is similar. Indices appearing in the reports are not full composite indices: their construction does not follow the 10 steps recommended by Nardo et al. (2008). They are more similar to single indicators. In the calculation of such survey based indices, some of the recommended steps could be relevant: the imputation of missing data, the multivariate analysis and weighting and aggregation could be relevant. Conversely, the EPI used by Ontario Power Generation is closer to the definition of a composite index. None of the 10 steps recommended by Nardo et al (2008) is explained in the report. In this last case, imputation of missing data, multivariate analysis, normalisation, weighting and aggregation and sensitivity analysis should have been done prior to the use of the EPI and the publication of the results. These steps may have been

followed and not explained in the report; this would worth a deeper investigation.

5.3.3- Is the corporation using the Balanced Scorecard?

Only 4 of the 94 reports sampled discussed the use of the Balanced Scorecard: Aluminerie Alouette Inc, Bank of Nova Scotia, CIBC and Jacques Whitford Ltd. A representative example is provided by Jacques Whitford Ltd: “We employed a Balanced Scorecard approach to measure each of our office’s performance against certain targets and to gauge our company’s overall progress towards meeting our business objectives. Our Balanced Scorecards evaluate key performance indicators regarding our people, our clients, the efficiency of our operations and our financial performance”.

The relative lack of use of the Balanced Scorecard was surprising as the Balanced Scorecard is a tool highlighted in the literature review as a key leverage point. Indeed, as demonstrated by Figge et al. (2002), Dias-Sardinha and Rejinders (2005) and Hubbard (2009), management of sustainability issues would benefit from the Balanced Scorecard Approach. In addition, Palme and Tillman (2008) noted that the use of the Balanced Scorecard could help the development of future-oriented indicators, which in turn would improve the decision making processes within corporations. With such positive support, it is surprising that only 4 Canadian corporations were reporting on their use of the Balanced Scorecard. It is recognised that some corporations may be using the Balanced Scorecard even though they did not report on its use. The use of the Balanced Scorecard in Canada is another potential avenue for further research.

5.3.4- Is the corporation using existing management systems?

Management systems help organizations manage environmental, social or other issues systematically, efficiently, and effectively. Therefore it was interesting to look at the management systems used by Canadian corporations. The list of the searched management systems or standards and the percentage of corporations mentioning them is available in Table 30.

Existing management system	Percentage of corporations
Environmental Management System (EMS)	36.2
ISO 14001	35.1
OHSAS 18001	9.6
AA 1000 or Accountability 1000	4.3
Sustainable Forest Management (SFM)	3.2
SA 8000	1.1
Z 1000	0.0
ISO 14031	0.0

Table 30: Percentage of corporations mentioning existing management systems.

Among the studied corporations, none mentioned ISO 14031 or the Z1000 program for

occupational safety. SA 8000 was mentioned only once, by Kinross Gold Corporation, concerning working conditions in mines in Brazil. SFM is mentioned by only three corporations: Canfor Corporation, Alberta-Pacific Forest Industries Inc. and West Fraser Timber Co Ltd. The other three corporations in the Forestry and Paper industry sector did not mention their registration to this standard. AA1000 was mentioned four times by: Nexen, Imperial Tobacco Canada Limited, Barrick Gold Corporation and Teck Cominco Limited. Within the 94 reports, 9.6% mentioned OHSAS 18001, with corporations in sectors such as electricity, mining, and oil and gas being particularly noteworthy.

Of significant note is the number of corporations that mentioned an Environmental Management System. There is an overlap between EMS and ISO 14001. On the one hand, among the 34 corporations that discussed their use of an EMS, 3 did not mention ISO 14001. On the other hand, 33 corporations mentioned ISO 14001, either for all or for some of their facilities and subcontractors. For Telus, the percentage of sites that have implemented their EMS is a measured objective. As Canadian Natural Resources Limited notes, “The primary focus of the Environmental Management System is to ensure our field operations minimize their environmental impact and meet all regulatory requirements and meet or surpass corporate standards”. This quote is an illustration of the way corporations are describing their environmental measures. The implementation of an EMS may imply that corporations are using indicators to measure environmental performance. In addition, none of these corporations mentioned the use of ISO 14031.

Table 31 shows the number of corporations mentioning either an EMS or ISO 14001. Table 31 shows that corporations from mining, oil and gas, electricity and forestry and paper sectors are more frequently mentioning the use of environmental management systems.

Industry Sector	Number of corporations mentioning EMS	Number of corporations mentioning ISO 14001
Mining	10	11
Oil and gas	5	4
Banks	-	-
Electricity	7	7
Forestry & Paper	4	4
Engineering, construction and chemicals	3	3
Finance	1	-
Steel	1	1
Transport, communication and services	4	3
Retail & Food	-	-
Total	34	33

Table 31: Number of corporations mentioning an EMS or ISO 14001 per industry sector.

Besides formal management systems, corporations also mentioned several other sustainability initiatives, including the Global Compact principles (18.1%) or their affiliation to the Dow Jones Sustainability Index (16%). Fifteen corporations mentioned the DJSI in their sustainability report. An illustrative example is provided by TransAlta: “The DJSI North America selects the top 20 per cent of companies in each sector according to sustainability practices out of the 600 largest North American companies. This is the second year that TransAlta has been included on the DJSI North America Index.” The other corporations are mainly in the oil and gas (5 corporations) and banking (4 corporations) sectors. Seventeen corporations discussed their participation in the United Nations Global Compact. As a representative example, Catalyst Paper Corporation explains: “as a global compact participant, Catalyst is part of a worldwide network of companies, governments, and non-governmental and labour organizations that have agreed to work with the UN to support 10 principles in the areas of human rights, labour, the environment and anti-corruption. Catalyst believes its policies and performance are in accordance with the 10 principles, and that progress towards their fuller implementation was made.” Corporations from all sectors, except the steel sector, noted their participation in the Global Compact.

5.4- The use of sustainability indicators

The third objective is to explore how sustainability indicators are used in corporate decision making, education, benchmarking and other activities. The other activities may be purchasing, supply chain management, sales, production, waste management and energy, water or resources consumption, research and development, development of new technologies, etc. With respect to this aim, the following questions were explored:

- Does the report provide a reason why the listed indicators were selected?
- Does the report provide details on how the indicators were developed?
- Does the report explain how the indicators were used?

The first subsection below presents the results on the selection and use of sustainability indicators as described in corporate reports. The subsections that follow detail the results on the use of indicators in corporate activities such as decision making, audit, research and development, supply chain, education and training, communication and benchmarking.

5.4.1- Selection and use of indicators

The corporations with significant statements regarding the selection and use of indicators are listed in Table 32. All quotes are provided in Appendix E

Statements related to	Corporations
Calculation and definition of indicators	Telus Toronto Hydro
Calculation of indicators	Bell Alliant Inmet Mining Corporation Jacques Whitford Nexen
Corporate vision - Targets	Alcoa BC hydro Diavik Diamond The St Lawrence Seaway Management Corporation
Development of new indicators	Export Development Canada Toronto Hydro
Selection of indicators	Bell Inc Jacques Whitford Talisman
Use of indicators	Enbridge Inmet Mining Corporation Nestlé Transalta

Table 32: Corporations with significant statements related to their selection and use of indicators.

For the majority of the indicators listed in the reports, few reasons are given for the selection or the development of the indicators. Bell Alliant describes its method to determine health and safety indicators: “We measure two key components of safety to determine success or failure. The first component is compliance, which is a measure used to determine how a team is doing at keeping their training current, conducting observations and inspections, and holding regular meetings with safety-related topics. A formula is used to determine a group’s overall compliance (...). The second key safety component we measure is related to incidents occurring in the workplace”. Nexen details its sustainability significance indicator: “this indicator measures both the number of spills and the number of exceedances of regulatory permits”. Toronto Hydro’s report contained half a page of indicator definitions in its appendix. As an example, it provides a definition of the Call Centre Customer Service Telephone Response Time and Response Quality: “this indicator consists of two values. The first represents the average percentage of calls monthly that are answered in less than 30 seconds. The second value takes into account the average quality score for all calls monitored per month”. In addition, Toronto Hydro published a sample process map. This chart showed the evolution of the data concerning the system average interruption frequency index, from the occurrence of the interruption event to the presentation of the scorecard to the Senior Executives. Inmet provides an explanation on how data are compiled and used: “Data for the indicators are collected and compiled using information from a standard template that each

operation (...) completes and returns to our head office in Toronto. Operations are asked to explain significant deviations in year-over-year trends and any challenges in meeting performance targets.”

It is also very interesting to note that Jacques Whitford links the development of a new indicator to a key objective: “corresponding with our objective to expand provision of external sustainability services, a new indicator is being introduced in FY09 to assess our net revenue from sustainability services as a percentage of our total net service revenue. A more comprehensive set of sustainability-oriented indicators is being considered.”

Regarding the use of indicators, there are even fewer details that are given in the reports. Nestlé Canada provides a common definition of indicators: “Environmental Performance Indicators (EPIs) are used to measure and drive positive environmental impacts, based on indicators such as the use of energy and water, as well as waste water and air emissions. EPIs ensure that preserving natural resources and minimizing waste are an integral part of the day-to-day activities in all Nestlé operations.” Despite this statement, it remains difficult to visualize how Nestlé Canada is really using the results to steer any improvement or management decision. A good example of use is given by Jacques Whitford. They describe their use of health and safety indicators to evaluate employees: “we also track health and safety metrics and statistics, incorporating key health and safety indicators into employee performance evaluations as well as quarterly progress reviews for each region.” Enbridge is similarly using its safety indicators.

These examples of selection and use of indicators are interesting but they remain insufficient to understand how Canadian corporations are using these indicators. There are, however, several mentions of a strategic framework: an illustrative example is provided by Alcoa: “Sustainable development is the foundation of Alcoa’s vision for the years ahead. To this end, a strategic framework has been developed setting out clear targets by which progress in carrying out this vision can be measured”. Another interesting example is provided by Diavik Diamond. In their Social well being chapter, it is mentioned that Diavik was “recognized as a leader in Aboriginal relations by reaching the prestigious Gold level of achievement under the Canadian Council for Aboriginal Business (CCAB) Progressive Aboriginal Relations (PAR) program.” Then it is explained that “The PAR program provides a framework for setting objectives, developing action plans, measuring performance, [and] achieving results”, but it does not detail which indicators were selected to measure these performances. Were the aboriginal related indicators highlighted by Diavik selected using this framework? The report does not make any clear correlation.

None of the other reports described the corporation’s indicators framework. Therefore the reports were screened to determine if there was a link between indicators and the current activities of corporation, such as management, research and development, supply chain

management, education and training, communication, benchmarking, etc.

5.4.2- Decision making

The corporations with significant statements regarding the use of indicators in their decision making processes are listed in Table 33. All quotes are provided in Appendix E

Statement related to	Corporations
Description of corporate decision making processes	Agrium ARC Nortel Yamana
Diversity for better decision making	Bank of Nova Scotia TD Financial Group
Explanation of decision making processes to stakeholders	Export Development Canada
Integration of carbon issues into decision-making models	Teck Cominco
Integration of environmental considerations into decision making	Bank of Montreal Bank of Nova Scotia Royal Bank of Canada
Integration of indicators in decision making	Petro-Canada
Integration of sustainability principles (or TBL or SD or corporate responsibility commitments) in decision making	BC Hydro Investissement Quebec Ontario Power Generation Talisman Telus

Table 33: Corporations with significant statements related to use of indicators in their decision making processes.

One aim of this study was to investigate how sustainability indicators are used in Canadian corporations. Therefore, one key focus of the content analysis was searching how decision making processes were linked to these performance measures. Out of the 94 corporations studied, 29 are mentioning their decision making processes. A majority of them (20) mention the incorporation of stakeholders’ opinion into their day to day decision making processes. As examples, Agrium states that “owners are also able to contribute to company decision-making through their participation in our Annual General Meeting process” and BC Hydro ensures that those stakeholders and First Nations who may be affected [by projects] are involved in the decision-making process.”

Few corporations link their policy or their code of conduct to their decision making. Investissement Quebec provides a good example of incorporating sustainable development in the corporation’s policy or code of conduct: “the members of the Board have mandated the Sustainable Development Committee to draw up a socially-responsible financing policy by late 2008 according to the guidelines provided in 2007. This policy will enable Investissement

Québec to incorporate sustainable development principles in its decision-making and to define its commitment in this respect”. As another illustrative example, Nexen mentions that “economic, environmental and social factors are evident at the highest levels of Nexen’s business decision making”. In addition, Iron Ore Company of Canada explains that sustainable development decision making criteria were implemented for capital projects, and they expected their operations “to incorporate SD in every aspect of the business.” In building plants for their clients, Hatch uses customised sustainable development design tools that “helps quantify fiscal and non-fiscal criteria to: (...) aid in decision making.” Both TD Financial Group and Bank of Nova Scotia highlight the case of diversity within their employees for better decision making. However, in none of the reports was the link between indicators, measurable actions, sustainability tools, and decision making developed.

While BC Hydro’s employees “developed a framework and tools to help ensure more consistent and effective triple bottom line decision-making, whether it involves purchasing office supplies, disposing of waste, extending power lines, or deciding how best to achieve energy conservation”, the Bank of Nova Scotia “launched internal initiatives aimed at reducing consumption, and we routinely factor environmental considerations into our strategic decision-making process”. These two statements reveal the corporation’s intention to measure and manage environmental issues. However, they are not precise enough to explain the real link between indicators and decision making. Finally, Petro Canada explained that they developed water principles which helped Petro Canada to “provide a visual indicator of what [they] already do. [They] want them to be integrated in the thought and the decision-making process of employees who deal with water-related issues every day (...). Having the Principles integrated into business decision-making has already helped Petro-Canada experience successes on the water front.” This is the only example where indicators values are said to be integrated into decision making processes and steered improvement.

5.4.3- Audit

The corporations with significant statements regarding the use of indicators in their audit activities are listed in Table 34. All quotes are provided in Appendix E.

Auditing is one key way in which the studied corporations evaluate their sustainability performance. The keyword “audit” had 320 occurrences in 58 different reports. It is described in many reports as a way to measure compliance towards standards. Indeed, 48 corporations are mentioning either their environmental, health and safety or financial audits, whether they are internal or third party audits. As such, auditing appears to be a measuring tool rather than an activity generated by previous performance measures.

Statements related to	Corporations
Identifying gaps towards targets and issuing recommendations	Canadian Natural Resources Limited Gildan Inmet Jacques Whitford Manitoba Hydro Methanex TD Financial Group
Audit of GHG emissions	Enbridge Husky Energy Inc.
Investigation following indicator evolutions	Enbridge Woodbine

Table 34: Corporations with significant statements related to their use of indicators in their audit activities.

According to Canadian Natural Resources Limited, their “performance is measured through auditing [their] systems and operations.” Manitoba Hydro provided explanations on the use of audit findings: “once audit findings have been communicated to Hydro, work begins on investigating, correcting, and preventing non-conformances from reoccurring.” With the same ideas, Methanex recognized that “the audit results highlighted key areas for improvement, prompting terminal operators to develop plans for better performance in health and safety, environmental protection, community awareness and emergency response. These improvements have further reduced business risks and have enhanced the terminals from a sustainability perspective.” As another illustrative example, Gildan “will enhance the way [they] process social and environmental audit data so that it focuses on impacts and root causes”. The report does not give any further explanation on how the results of the audits are used but it is reasonable to assume that these audits help provide a basis for decisions and improvements. In addition, Jacques Whitford mentions: “Together with data from our carbon audit, the environmental audit data provides a baseline for tracking our company’s performance with regard to these indicators over time.” Similarly, TD Financial group hopes “The audit will identify gaps and generate recommendations for TD to achieve green building certification.” Inmet notes that “the biennial Safety and Health audit at the site helped management focus its action plan for improving safety performance.” These companies use auditing as a way to identify gaps towards their targets and issue recommendations. Another illustrative example is provided by Husky Energy: they had their greenhouse gas emissions and calculation methodology audited by an independent third party “to ensure its emissions comply with domestic reporting and emission regulations.” Enbridge also mentioned a “report based on an independent third-party audit of [their] GHG emissions data management system for [their] Canadian operations.”

Audits appear to be used primarily by corporations as a way to identify gaps or

performance improvements. One exception to this use of the audit is briefly described by Woodbine: “we will investigate and audit all injuries and incidents and use the knowledge to continuously improve.” This is an example where each occurrence of an event will lead to an audit. This is tightly linked to the injury frequency indicator. However, the role of the audit is still a kind of baseline audit in order to decrease the number of injuries in the future, rather than initiated by the indicator itself. Enbridge also states: “we conducted 60 internal inspections in 2007, and external auditors conducted 40 inspections. These inspections were based on either environmental indicators or health and safety indicators”. Although the report does not provide any further details on the indicators which cause the inspection, it is anticipated that Enbridge uses its indicator values to guide an inspection.

5.4.4- Research and development

The corporations with significant statements regarding the use of indicators in their research and development activities are listed in Table 35. All quotes are provided in Appendix E.

Statements related to	Corporations
Establishment of partnership in R&D	Alcoa Catalyst Enbridge
R&D investments	Alberta Pacific Forest Catalyst Syncrude
R&D results	Imperial Oil Syncrude Talisman Teck Cominco

Table 35: Corporations with significant statements related to their use of indicators in their audit activities.

In the studied reports, 17 corporations mentioned their Research and Development activities, though only 4 of them disclosed indicators. Indicators used in this area are related to the number of patents, investments and partnerships. For example, Alcoa clearly states that one of its objectives is: “Establishment of a partnership in research and development innovation.” It is worth noting that Alcoa is not among the corporations reporting on a partnership indicator. In some reports, the research and development activities are mentioned through the description of partners and research projects. For example: “Catalyst continued its partnership with the Pulp and Paper Centre at the University of British Columbia in 2007, through the Catalyst Grants Program. This involves \$60,000 commitments and in-kind support for each of three research projects (one of which was completed prior to 2007), which are also

supported by the Natural Sciences and Engineering Research Council of Canada”. Alberta Pacific Forest explained that “the calculation of research and development investments is based on the definition of research and development used by the federal government for tax purposes and does not include routine spending to improve existing products or procedures.”

R&D activities are discussed extensively by corporations in the oil and gas or mining sectors. It is interesting to note here that from these two sectors only Imperial Oil highlighted indicators such as number of patents and R&D investments. For example, Syncrude notes that “Science and technology provide the keys to unlocking the potential of the oil sands resource.” Talisman’s strategic approach to climate change consists in “investing in research and development in emissions management technology”, while Teck Cominco’s short-term efforts will focus on “investing in research and development of low-carbon technology for mining and smelting, as well as carbon capture and storage opportunities.”

In a majority of these reports, there is a clear link between sustainability issues (mainly environmental) and the research and development projects that are held. For example, Imperial Oil explained that “efforts are aimed at upgrading bitumen at much lower pressures and temperatures, thereby reducing energy requirements. Research to date has resulted in two patents, and research programs continue to expand.” However, the management of R&D projects and the measurement of progress in terms of research results are never disclosed. It is understandable that these topics remain confidential but it would be interesting to investigate if there is a relationship between the evolution of sustainability indicators and research and development objectives.

5.4.5- Supply chain

The corporations with significant statements regarding their use of indicators in their supply chain management are listed in Table 36. All quotes are provided in Appendix E.

Statements related to	Corporations	
Contribution to local economy	Conoco Philips Canada Diavik Diamond	
Location of markets	Domtar	
Long-term supplier relationships, selection of suppliers	Aviva BCE CIBC Gildan	Imperial Oil Loblaw TD Financial Group Wal-Mart
Operations	Canada Post	

Table 36: Corporations with significant statements related to their use of indicators in their audit activities.

Supply chain management in the reporting corporations was studied through the screening of the reports with keywords such as supply chain, supply-chain, supplier and purchase. Results of this screening are provided in Table 37. Therefore, several corporations developed parts of their supply chain management in their report without highlighting any indicators.

Keyword	Mentions	Quotes of interest
Purchase	54	4
Supply chain (supply-chain)	23	8
Supplier	31	4

Table 37: Results of reports screening for supply chain management.

Among the corporations studied, most of them mentioned supply chain and suppliers in the context of long-term supplier relationships, such as Aviva Canada Inc., or for suppliers' evaluations and selections. In this selection process, suppliers' indicators may come into play. For example, "Catalyst has developed a detailed Sustainable Supply Chain Management Questionnaire for suppliers outside of North America; it addresses factors including human rights, freedom of association, and forced and child labour." Generally, "in addition to undergoing a financial evaluation, proposals from suppliers are assessed against requirements for technical and safety performance. In each case, a preference is given to companies with a strong commitment and record for workplace safety" (Imperial Oil). Similar statements concerning suppliers' selection and evaluation were found in many reports: CIBC, Wal-Mart, Loblaw, Gildan, Bell Inc and TD Financial Group.

Domtar provides an interesting example where a geographic indicator is linked to supply chain management: "Domtar's supply chain also supports our sustainability objectives. Our broad geographic footprint places us within a one-day truck drive from all of our major markets". This is then illustrated by the impact this decision had on other indicators: "This means not only better customer service and lower transportation costs, but also reductions in fuel consumption and emissions, as well as more optimal use of our fleet and drivers."

The keyword "purchase" is closely linked to indicators such as GHG emissions, clean power purchases, or contributions to the local economy (especially for Quebec or aboriginal communities), which is part of the GRI indicator EC6. For example, Conoco Philips Canada wanted "to share the benefits of [their] operations with northern people through employment, education, training and the local purchase of goods and services." Diavik Diamond also illustrated this, stating that they will "take all reasonable steps, acting in good faith, to work towards ensuring at least 66 per cent northern employment and at least 40 per cent Aboriginal employment during operations; for purchase of goods and services, the objective is at least 70

per cent northern.” Those two last examples show that indicators are used to illustrate progress towards this policy.

Finally, Canada Post linked their purchasing activities to their operations: “we are focused on two key strategies to reduce fuel consumption and cut CO₂ emissions in the near term. The first is to purchase vehicles suitable for our delivery operations that have smaller engines and are more fuel efficient. These vehicles are scheduled to replace our larger, less efficient, step vans between 2010 and 2015.”

Despite numerous occurrences of keywords such as supplier, supply chain and purchase, there are relatively few interesting statements concerning the way corporations are managing their supply chain in regard to their sustainability issues. Most of the indicators used in this area were either adapted or came directly from the GRI EC6 (policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation) and HR2 (percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken). However, two indicators were specifically developed by corporations such as the procurement from Aboriginal suppliers developed by EnCana Corporation, or the renewable energy purchased indicator used by the Bank of Montreal. In all reports, few examples were available on how indicators were used in supply chain management. Further research on the development and use of indicators in this area would be needed.

5.4.6- Education and training

The phrase “Education and training” occurred 21 times in the content analysis. None of these occurrences was related to indicators. Through the individual keywords search “education” had 516 occurrences and “training” had 1122 occurrences. Screening was refined with a proximity search. It is quite important to note that while there are so many paragraphs on education or training in the reports, the only link with indicators deals with the training of the corporate responsibility team about indicators: “A key aspect of the training process was a discussion about indicators. The indicator framework was explained, including domain, issue, Goal, Hybrid (Goal/issue) and Casual models” (Toronto Hydro). This example is very interesting because it reveals the importance Toronto Hydro gives to indicators in general. However, it does not provide any information on the use of indicators in corporations.

Despite the lack of information regarding the use of indicators in training activities, It is worth noting here that the database of indicators counted 8 indicators related to education and training and that they were used by 20 corporations. Three of these indicators were adapted from the GRI LA10 (Average hours of training per year per employee by employee category). The remaining 5 indicators have clear link with sustainability objectives. These indicators and corporations are detailed in Table 38.

Indicators	Corporation
Mandatory EH&S training	TransAlta Corporation
Number of employees for Energy and GHG training sessions	Hemlo Gold Mines Inc
Number of employees who received environmental training	Telus Corporation
Number of employees who received SD training	Ontario Power Generation
Number of suppliers and factory managers attending Ethical Standards training session in 2007 (globally)	Wal-Mart Canada Corporation

Table 38: Training indicators linked to sustainability issues highlighted by corporations.

In these reports, there is no link between these highlighted indicators and the corporation's performance on the related sustainability issues. For example, no correlation is discussed between the evolution of the number of mandatory EH&S training indicator and the other six H&S indicators highlighted by TransAlta Corporation (All injury frequency, Contractor recordable injury frequency rate, disabling injury frequency rate, employee recordable injury frequency rate, incident investigation quality and accident frequency).

Finally, Kinross Gold stated that they "also measure leading indicators of performance, such as internal inspections, environmental training of employees, and additional water and air sampling over and above permit requirements. [...] These leading indicators provide us with a proactive look at the management programs in place that will prevent releases, permit excursions and enforcement actions." This statement shows that the corporation makes a clear link between environmental training and their general environmental performance. However, what they called "their proactive look at management systems" is not detailed.

This lack of information regarding the link between training and sustainability issues raises questions about the corporations' willingness to disclose such information. It is a possible that either the information is confidential, or the sustainability report is not the right place to disclose such information. In both cases, further research could help understanding better how these training indicators are used.

5.4.7- Communication and benchmarking

The corporations with significant statements regarding their use of indicators in their benchmarking are listed in Table 39. All quotes are provided in Appendix E.

Statements related to	Corporations
Benchmark for future	Bank of Nova Scotia Nestlé Canada
External benchmark tool	BC Hydro Canadian Natural Resources Limited Goldcorp KPMG

Statements related to	Corporations
	Loblaw
Communication	Canadian Natural Resources Limited Nexen Wal-Mart

Table 39: Corporations with significant statements related to their use of indicators in their benchmarking activities.

A search of the keywords “benchmark” and “benchmarking” yielded 77 occurrences. The context of each occurrence was studied and it revealed that indicators are commonly used as a benchmark for the future, or a baseline reference. An illustrative example is given by Nestlé Canada: “Tracking environmental performance indicators gives Nestlé Canada a benchmark on current environmental performance, and charts our course for further improvements in managing future sustainability.” The Bank of Nova Scotia describes a similar intention regarding the employee satisfaction index: “a recent survey reported an employee satisfaction index rating of 75 per cent, and this benchmark will help us target continued improvements and measure our progress in the years ahead.”

Indicators were also used as an external benchmark tool. For example, BC Hydro defines its metrics as “Measures [that] are results-based to provide a more accurate evaluation on our performance. We also participate in benchmarking studies to determine where improvement may be required.” Additionally, Canadian Natural Resources Limited compares their “safety benchmarking results with other industry top performers to ensure [their] performance is solid and improving”. Similarly, KPMG benchmarks their “learning performance as an organization against the Conference Board of Canada’s Learning Performance Index regarding learning vision, culture, dynamics, and infrastructure / investment”. Goldcorp and Loblaw explain the use of the GRI report as a benchmark tool, noting that sustainability reports based on the GRI Framework can be used to benchmark organizational performance with respect to laws, norms, codes, performance standards and voluntary initiatives. Wal-Mart highlights the use of sustainability indicators as a communication tool: “we know we must be judged not just by what we say but also by what we do. This requires the kind of metrics you’ll find in our report – the key performance indicators we will use to measure and show our CSR commitments and improvements. And, though they may be refined or expanded over time, we offer these metrics as the benchmark by which we can be judged.” Canadian Natural Resources Limited uses the metrics to state that: “our results are significantly better than the peer benchmark average”. Nexen describes its learning investment level as “a level that is more than double the average U.S. benchmark for staff training.”

As reviewed in the literature, benchmarking is one of the primary possible applications of

sustainability indicators. While external benchmarking is slowed down by a lack of standardization of indicators in various corporations (Palme and Tillman, 2008) corporations tend to use their indicators to “benchmark themselves.” They used their performance at a given time to compare upcoming data. In addition, the use of the GRI indicators may help the development of benchmarking within activity sectors, as mentioned by Goldcorp or Loblaw.

5.4.8- Summary of findings

With respect to the third objective of the study, corporate sustainability reports were screened to explore how the use of sustainability indicators was explained in corporate Canadian sustainability reports. Although there was an extensive use of keywords related to indicators in the reports, few corporate statements reveal the actual use of sustainability indicators in corporations. A majority of the corporate statements are related to:

- The definition of indicators and decision making process,
- The description of corporate decision making,
- The integration of sustainability principles into their policy or their decision making process.

Of significant note are the statements related to:

- The integration of H&S indicators employees’ evaluation,
- The use of H&S or environmental indicators to initiate audits or inspection,
- The use of suppliers’ sustainability indicators in suppliers selection processes,
- The use of sustainability indicators for internal benchmark for future, external benchmark and communication purposes.

Although there is an obvious link between sustainability issues and topics covered by R&D projects or training indicators, none of the reports clearly identify the use of sustainability indicators to manage these activities.

6- Conclusions

6.1- Summary

The literature review showed that extensive research had been conducted on sustainability indicators, performance measurement, development of indicators and indices and sustainability reporting. However, there is a lack of information provided on the actual use of sustainability indicators in corporate reporting and on the way these indicators help in the management of sustainability issues. Therefore, the objectives of this thesis were: (1) to construct a database of all indicators highlighted in Canadian corporate sustainability reports; (2) to determine to what extent Canadian corporations are using existing sustainability indicators programs (GRI, ISO 14001, SFM); (3) to determine how sustainability indicators are used in corporate decision making, education, benchmarking and other activities; and (4) to identify possible patterns in the use of sustainability indicators in Canadian corporations by industry.

These objectives were addressed through a comprehensive content analysis of selected Canadian corporate sustainability reports. First, Canadian corporations that have published sustainability reports (or corporate social responsibility reports, responsibility reports, accountability reports, annual reports, environmental reports) and their industry sector were identified. A database of indicators highlighted in the reports was developed, addressing the first objective. Regarding the second and third objectives, both software and manual based keywords searches were carried out to explore the extent to which existing sustainability indicators programs were used and to determine if the use of sustainability indicators was detailed in the reports. Finally, an analysis of the types of indicators highlighted and of their use aimed to identify differences and trends by industry sectors, addressing the fourth research objective.

This study provides a database of 585 indicators highlighted in Canadian corporate sustainability reports. While it was shown that 324 of them were used by one corporation only, it was also demonstrated that a few indicators were used relatively often. The most frequently highlighted indicators are: (1) funding, donations, sponsorship, (2) total employees, (3) greenhouse gas / CO₂ equivalent emissions and (4) taxes and royalties. It is interesting to note that very few indicators are presented with their targets. It raises questions on the actual use of these highlighted indicators by corporations. Indeed, the target is closely tied to the role of the indicators in the management of any issue. The lack of targets raises several questions. For example, without targets, how could one know if there is any improvement toward the objective? And why would one measure performance if not to compare with a target?

In addition to the triple bottom line categories, the 585 indicators were split into thematic categories. It was demonstrated that of the 585 indicators highlighted, 139 are

financial, 89 are operational and 65 are related to employees. It does not necessarily mean that corporations are reporting more on these themes, but that there is a higher diversity in the indicators selected. Almost all corporations report on their interaction with the community, their financial indicators and their operations. While the analysis shows relatively widespread agreement on the indicators highlighted for the community theme, there is a high discrepancy on financial and operations indicators.

Out of the 94 corporations studied, almost one third published some of the GRI indicators in the economic, environmental or social dimensions. The GRI indicators are used and disclosed by corporations from all sectors, except steel. Economic indicators are the most widely used GRI indicators in Canadian corporate sustainability reporting. Environmental indicators are frequently disclosed as well, though there are important differences between sectors. For example, while the indirect energy use and material use indicators are most reported in the Finance sector, the water discharge indicators are most frequently reported in the Mining sector. The corporations in the electricity sector disclose almost all GRI environmental indicators. Social indicators are less extensively used without any identified sector related pattern. Overall, the most reported GRI indicators are EC1, LA1, EN16, EN3 and LA13. This is consistent with the database of indicators.

The literature review highlighted that the high number of GRI indicators is particularly criticised. However, the GRI indicators are clearly defined and present the advantage of being comparable. Indeed, it is worth noting that, in this study, corporations selected a much higher number of indicators. In comparison with the GRI indicators, the 585 indicators highlighted by Canadian corporations are all used differently with scarce explanations on their calculation.

Few corporations are using indices (12 out of 94). These indices are mostly related to customers and employees satisfaction or to the interruption of services and are calculated based on answers to surveys and operations records. However, the indices are not constructed using scientifically sound approaches identified in the literature. One corporation used existing indicators to build up a composite index, the construction of which is not detailed in the report.

The Balanced Scorecard was barely mentioned, which was surprising as it is a tool which the literature emphasizes as a key leverage point. Management systems and other programs are also mentioned in these 94 Canadian corporate sustainability reports. EMS or ISO 14001 are widely cited, especially in mining, oil and gas, electricity and forestry and paper sectors. The affiliation to the Global Compact or to the DJSI is also frequently highlighted as a sign of sustainability good practices. Canadian corporations from the oil and gas and the bank sectors are often members of the DJSI.

The content analysis reveals that there are very few details given in the reports on how sustainability indicators are selected, developed or used by Canadian corporations in their

current activities. In particular, the indicator frameworks are never mentioned or explained. In some cases, the definition of the indicators provides insight on its development. The corporation's policy often links the indicators to the decision making processes. Audits seem to be a measuring tool rather than an action generated by previous performance measurements. The daily use of the indicators to steer improvements within corporations is sometimes noted or suggested but it is rarely described. While the analysis of the categories of indicators highlighted and of the affiliation to existing sustainability indicators programs by industry sector reveal identifiable patterns, the description of how the indicators are used does not seem to be sector specific.

The high number and variety of indicators reported suggest that these are not calculated for publication or communication purposes only. There might be few reasons explaining this lack of information in the reports: this kind of information might be confidential and the sustainability report might not be the right place to disclose it, or the sustainability indicators selected are not really used to manage sustainability issues.

6.2- Contributions

As highlighted by the literature review, there are relatively few published examples regarding the actual use of sustainability indicators in corporations. This study helped provide insight into sustainability reports, sustainability policies, indicators and the way these tools are used by Canadian corporations. This helps address key gaps in the academic knowledge base. Indeed, the complete list of indicators highlighted in Canadian sustainability reports is provided, along with the GRI indicators that are disclosed. This is the first study to provide this information. The research showed that the indicators reported are relatively evenly distributed along the three dimensions of sustainability. The research also revealed an incredible diversity in the indicators reported. This underscores the difficulty of developing standard sets of indicators that are broadly applicable. In addition, the results highlight that the GRI indicators are relatively widely used by Canadian corporations. This study provides details on the indicators commonly reported by corporations, on their associated targets, or how they are used. This study did not focus on an in-depth investigation of the use of EMS in Canadian corporations; however, the widespread use of EMS among the studied corporations is worth noting. Sector specific patterns were also identified. It was particularly interesting to note that the one sector required by Canadian law to report on sustainability issues (i.e. the banking sector), did not meaningfully differ in its reporting from other sectors. This study also provides several examples on how indicators are currently used in corporate decision making, education, benchmarking and other activities. These original contributions provide a much needed baseline to advance research on sustainability measurement and reporting in Canada.

It is anticipated that the results of this research will find several applications among

Canadian corporations and will help spur improvement concerning management of sustainability issues. Insight into how sustainability indicators are currently used will help steer reflection within corporations and provide insight into how they could improve their management with respect to their sustainability policies. Information on how corporations in other sectors are using sustainability indicators can be used in a benchmarking approach and lead corporations to improve their own use of sustainability indicators. Corporations and industry associations may use these results to help inform the development of sector specific indicators. A better understanding of the use of sustainability indicators by corporations will help refine guidelines for the design and implementation of sustainability indicators and indices and for reporting. Nevertheless, literature reviews along with the results of this thesis show that the methods used to design and implement sustainability indicators or indices may be explored in greater depth to get a better understanding and a more accurate measure of the progress towards sustainability.

6.3- Limitations

Several limitations of this research have been identified. First, the content analysis involved a comprehensive identification of all Canadian corporations that have published a sustainability report or equivalent within the last three years. The use of overlapping databases was used to identify all possible corporations. However, it remains possible that some corporations have not been identified and included. Beyond these points, this study focuses on Canadian corporations that have published sustainability report or equivalent over the last three years: the use of sustainability indicators in corporations outside Canada was not studied. Furthermore, sustainability management practices and uses of indicators in corporations which are not publishing any report were not taken into account in this study.

6.4- Recommendations for further research

The content analysis of the reports raises several questions on the development of indices, the use of the Balanced Scorecard and the real use of indicators in corporate management of sustainability issues. These questions may not find any answer written in sustainability reporting. Therefore, it would be worth investigating these subjects deeper through direct contact with corporate managers through questionnaires, interviews and case studies. For example, questionnaires would be appropriate tools to explore in greater depth how the usefulness of the GRI indicators is perceived in Canadian corporations. Interviews would allow corporate managers to explain their approach on many questions, such as how the indicators were selected for disclosure in the report, how it was decided which methods would be used to highlight each indicator (scorecard, charts, tables or boxes), how the company decided what targets to disclose, how the targets were selected, and how the

reported indicators are used in corporate management. Finally, case studies could provide insight into the process of developing, implementing, using, and improving indicators and indices over time. It could also be interesting to explore issues highlighted in the literature, such as the use of the Balanced Scorecard approach in the management of sustainability issues. Other topics for further research could be to explore the use of sustainability indicators beyond corporations or in other jurisdictions, such as the United States, the United Kingdom, Western Europe, or Australia. The results of this thesis provide a baseline for comparisons with other jurisdictions. Finally, rather than studying the indicators reported at an instant in time, research could be conducted on the evolution of indicators reported over time. This could provide interesting insight into the use of indicators and enable a study of the factors that influence reporting (such as the introduction of a requirement to report in the banking sector).

APPENDICES

Appendix A: Organizations removed from the study

This is the list of the organizations that were found on the Corporate Register website and removed from the study. The status explains the reason for the removal.

Organizations	Status
Alterna Savings and Credit Union Limited	Credit union
Caisse d'économie solidaire	Credit union
Canadian Chemical Producers Association	Association
Coast Capital Savings	Credit union
Dockside Green	Association and city
École Polytechnique Montréal	University
First Calgary Savings and Credit Union Ltd	Credit union
Green Mountain Power	Not Canadian
International Institute for Sustainable Development	Institute
La Caisse d'économie solidaire Desjardins	Credit union
Mountain Equipment Co-operative	Co op
Northern Alberta Institute of Technology	Institute
The Cement Association of Canada	Association
The Co-operators	Co op
The Mining Association of Canada	Association
Toronto and Region Conservation Authority	City
University of Toronto	University
VanCity	Co op
Vancouver 2010 (VANOC)	not-for-profit company without share capital
Vancouver City Savings Credit Union	Credit union
Vancouver International Airport Authority	Not-for-profit organization

Appendix B: Worksheet of content analysis

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Agrium Inc	Sustainability	AB	56	Engineering, Construction and Chemicals	Y								Y				
Alberta-Pacific Forest Industries Inc	Sustainability	AB	36	Forestry & Paper											Y		
Alcoa Canada Primary Metals	Sustainability	QC	38	Steel									Y				
Aluminerie Alouette Inc	Sustainability	QC	42	Steel			Y										
ARC	Responsibility	AB	28	Oil and gas	Y												
Atco Limited	Environmental	AB	8	Electricity													
Aviva Canada Inc	CSR	ON	62	Finance													
Bank of Montreal	Accountability	ON	52	Banks	Y								Y	Y			
Bank of Nova Scotia	CSR	ON	50	Banks	Y	Y							Y				Y
Banque Laurentienne du Canada	CSR	QC	32	Banks													
Barrick Gold Corporation	Responsibility	ON	38	Mining	Y		Y	Y				Y	Y	Y			
Bâtirente	Annual	QC	73	Finance	Y								Y				
BC Hydro	Annual	BC	106	Electricity	Y	Y	Y	Y					Y				Y
BCE Inc	Responsibility	QC	43	Transport, communication & services	Y								Y	Y			
Bell Aliant Regional Communications Inc	Sustainability	NS	48	Transport, communication & services			Y										

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Bombardier Inc	Sustainability	QC	54	Engineering, Construction and Chemicals	Y			Y	Y	Y			Y	Y			
BP Canada Energy Company	Environmental	AB	10	Oil and gas				Y	Y								
Cameco Corporation	Responsibility	SK	3	Steel	Y			Y	Y								
Canada Post Corporation	CSR	ON	71	Transport, communication & services	Y												
Canadian Imperial Bank of Commerce (CIBC)	Accountability	ON	183	Banks	Y	Y								Y			
Canadian Natural Resources Limited	Report to stakeholders	AB	22	Oil and gas	Y			Y	Y								
Canfor Corporation	Sustainability	BC	16	Forestry & Paper				Y	Y							Y	
Catalyst Paper Corporation	Sustainability	BC	60	Forestry & Paper	Y			Y	Y				Q				
Coca-Cola Bottling Company	Sustainability	ON	34	Retail & Food	Y								Y				
ConocoPhillips Canada Resources Corporation	Sustainability	AB	128	Oil and gas													
Diavik Diamond Mines Inc	Sustainability	NT	52	Mining				Y	Y								
Domtar Inc	Sustainability	QC	44	Forestry & Paper	Y												
Elk Valley Coal Corporation	Sustainability	AB	12	Mining	Y				Y								
Enbridge inc	CSR	AB	58	Oil and Gas	Y								Y	Y			
EnCana Corporation	Responsibility	AB	42	Oil and gas	Y									Y			
Envision Financial	Citizenship	BC	6	Banks													

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Export Development Canada	CSR	ON	42	Finance													
Fondaction	Sustainability	QC	44	Finance	Y		Y										
Gildan Activewear Inc	Citizenship	QC	28	Retail & Food	Y												
Gold Reserve Inc	Sustainability	YK	26	Mining	Y												
Goldcorp Inc	Sustainability	BC	61	Mining	Y		Y	Y									
Greater Toronto Airports Authority	CSR	ON	39	Transport, communication & services	Y		Y	Y									
Groupe Aeroplan Incorporation	Annual	QC	6	Retail & Food													
Hatch	Sustainability	ON	16	Transport, communication & services													
Hemlo Gold Mines Inc	Sustainability	ON	12	Mining	Y		Y	Y									
HSBC Bank Canada	Report to the Community	BC	36	Banks													
HudBay Minerals Inc	Sustainability	ON	40	Mining													
Hudson's Bay Company	Responsibility	ON	web	Retail & Food	Y								Y				
Husky Energy Inc.	Sustainability	AB	46	Oil and gas													
Hydro Québec	Sustainability	QC	44	Electricity	Y		Y	Y									
IAMGOLD Corporation	Sustainability	ON	36	Mining	Y		Y	Y									
Imperial Oil Ltd	Citizenship	AB	40	Oil and gas	Y		Y	Y	Y								
Imperial Tobacco Canada Limited	Responsibility	QC	15	Retail & Food									Y				

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Inmet Mining Corporation	Sustainability	ON	80	Mining	Y			Y	Y	Y			Y				Y
Investissement Québec	Annual	QC	136	Finance	Y												
Investors Group	Citizenship	MB	64	Finance													
Iron Ore Company of Canada	Sustainability	QC	36	Mining				Y	Y								
Jacques Whitford Ltd	Sustainability	NS	68	Transport, communication & services	Y		Y										
Kinross Gold Corporation	Responsibility	ON	75	Mining	Y			Y	Y	Y	Y						
KPMG LLP (Canada)	CSR	ON	52	Transport, communication & services	Y												
Loblaw Companies Ltd	CSR	ON	38	Retail & Food													
Manitoba Hydro	Sustainability	MB	20	Electricity				Y	Y								
Manitoba Lotteries Corporation	CSR	MB	22	Retail & Food													
Manulife Financial Corporation	Accountability	ON	42	Finance													
Methanex Corporation	CSR	BC	24	Engineering, Construction and Chemicals				Y	Y								
National Bank of Canada	CSR	QC	37	Banks	Y								Y				
Nestlé Canada Inc	Environmental	ON	11	Retail & Food									Y				
Newfoundland and Labrador Hydro	Sustainability	NFL	web	Electricity				Y	Y								
Nexen	Sustainability	AB	56	Oil and gas	Y			Y	Y			Y	Y	Y			Y
Nienkämper Furniture & Accessories Inc	Environmental	ON	16	Retail & Food													

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Norbord Inc	Environment, health and safety report	ON	12	Forestry & Paper				Y	Y								
Nortel Networks Corporation	Citizenship	ON	8	Transport, communication & services				Y	Y	Y			Y				
Nova Chemicals Corporation	Responsible Care	AB	20	Engineering, Construction and Chemicals													
Ontario Power Generation	Sustainability	ON	52	Electricity				Y	Y	Y							
Petro-Canada	Report to the Community	AB	24	Oil and gas													
PFB Corporation	Sustainability	AB	10	Engineering, Construction and Chemicals													
Potash Corporation of Saskatchewan Inc	Sustainability	SK	170	Engineering, Construction and Chemicals	Y				Y								
QIT - Fer et Titane Inc	Sustainability	QC	46	Mining				Y	Y								
RBC Financial Group	Accountability	ON	44	banks	Y									Y			
SaskPower	Environmental	SK	36	Electricity				Y	Y								
SITQ Caisse de Dépôt et placement du Québec	Responsibility	QC	24	Finance													
Sun Life Financial Inc	Accountability	ON	36	Finance													
Syncrude Canada Ltd	Sustainability	AB	72	Oil and gas													
Talisman Energy Inc.	Responsibility	AB	46	Oil and gas	Y			Y					Y	Y			
TD Financial Group	Responsibility	ON	62	Banks	Y												
Teck Cominco Limited	Sustainability	BC	58	Mining	Y			Y	Y	Y		Y	Y				
Teck Cominco Metals Ltd	Sustainability	BC	12	Steel													

Demographic analysis					Existing program used												
Corporations	Type of report	Province	nb pages	Industry sector	GRI	Composite indicators	Balanced scorecard	EMS	ISO 14001	OHSAS 18001	SA 8000	AA 1000	Global Compact	DJSI	SFM	Z 1000	Other
Telus Corporation	CSR	BC	44	Transport, communication & services	Y		Y	Y						Y			
The Empire Life Insurance Company	Accountability	ON	3	Finance													
The St Lawrence Seaway Management Corporation	Annual	ON	31	Transport, communication & services													
Toronto Hydro Corporation	Responsibility	ON	21	Electricity	Y												
TransAlta Corporation	Sustainability	AB	89	Electricity	Y		Y	Y	Y					Q			
TransCanada Corporation	Responsibility	AB	43	Oil and gas										Y			
Wal-Mart Canada Corporation	CSR	ON	60	Retail & Food													
West Fraser Timber Co Ltd	Sustainability	BC	15	Forestry & Paper			Y	Y						Y		Y	
Woodbine Entertainment Group	CSR	ON	20	Retail & Food													
Xstrata Copper Canada	Sustainability	ON	44	Mining	Y												
Xstrata Nickel	Sustainability	ON	26	Mining													
Yamana Gold Inc	Sustainability	ON	40	Mining					Y								

Y = Yes

Q= Quote from the report

Corporations	Indicator and measure of performance										Management	Supply - chain	R&D	Training	Benchmark					
	indicator metric	measure framework	monitor performance	index / indices	scorecard	decision	decision-making	audit	health and safety	purchase	supply chain	supplier	sourcing	research	development	research & development	education	training	benchmark / benchmarking	communication
Agrium Inc								Y	Y	Y	Y									
Alberta-Pacific Forest Industries Inc										Y					Y				Y	
Alcoa Canada Primary Metals									Y	Y					Q				Y	
Aluminerie Alouette Inc									Y	Y										
ARC								Y	Y	Q	Y									
Atco Limited																				
Aviva Canada Inc										Y	Q								Y	
Bank of Montreal					Q		Q	Y	Y	Y									Y	
Bank of Nova Scotia					Q		Q	Y	Y	Y	Y								Q	
Banque Laurentienne du Canada																				
Barrick Gold Corporation					Q			Y	Y	Y										
Bâtirente																				
BC Hydro	Y	Y	Y	Y	Q	Y	Q	Y	Y	Y	Y	Y			Y				Q	
BCE Inc								Y	Y	Y	Q								Y	
Bell Aliant Regional Communications Inc								Y	Q	Y	Y									
Bombardier Inc																				
BP Canada Energy Company								Y												
Cameco Corporation																				
Canada Post Corporation					Q			Y	Q											
Canadian Imperial Bank of Commerce (CIBC)					Q		Y	Y	Y	Q	Y								Y	

Corporations	Indicator and measure of performance										Management	Supply - chain				R&D	Training	Benchmark					
	indicator	metric	measure	framework	monitor	performance	index / indices	scorecard	decision	decision-making	audit	health and safety	purchase	supply chain	supplier	sourcing	research	development	research & development	education	training	benchmark / benchmarking	communication
Canadian Natural Resources Limited										Q		Y										Q	
Canfor Corporation										Y													
Catalyst Paper Corporation										Y		Y	Q	Y				Q					
Coca-Cola Bottling Company										Y		Y	Y	Y									Y
ConocoPhillips Canada Resources Corporation										Y			Q		Y								
Diavik Diamond Mines Inc				Q						Y		Q	Q										
Domtar Inc													Q										Y
Elk Valley Coal Corporation										Y													
Enbridge inc	Y	Y			Y	Y				Q		Y					Y				Y		
EnCana Corporation										Y													
Envision Financial																							
Export Development Canada			Y		Y					Y	Y	Y											
Fondaction																							
Gildan Activewear Inc										Q			Q	Y									
Gold Reserve Inc																							
Goldcorp Inc										Q	Y	Y	Y										Y
Greater Toronto Airports Authority																							
Groupe Aeroplan Incorporation																							
Hatch										Q			Y					Y					
Hemlo Gold Mines Inc										Y													
HSBC Bank Canada			Y																				

Corporations	Indicator and measure of performance										Management	Supply - chain				R&D	Training	Benchmark					
	indicator	metric	measure	framework	monitor	performance	index / indices	scorecard	decision	decision-making	audit	health and safety	purchase	supply chain	supplier	sourcing	research	development	research & development	education	training	benchmark / benchmarking	communication
HudBay Minerals Inc																							
Hudson's Bay Company																							
Husky Energy Inc.										Q		Y						Y					
Hydro Québec						Q						Y						Y					
IAMGOLD Corporation									Y													Y	
Imperial Oil Ltd						Q						Y	Q	Y				Y					
Imperial Tobacco Canada Limited									Y	Y													
Inmet Mining Corporation	Y								Y	Q		Y											
Investissement Québec									Y	Y		Y						Y					
Investors Group												Y											Y
Iron Ore Company of Canada									Q	Y				Y									Y
Jacques Whitford Ltd	Q								Y	Q	Q	Y	Y	Y									Y
Kinross Gold Corporation									Y	Y		Y	Y										Y
KPMG LLP (Canada)									Y			Y											Q
Loblaw Companies Ltd									Y			Y	Q										Y
Manitoba Hydro										Q		Y											Y
Manitoba Lotteries Corporation									Y			Y		Y									
Manulife Financial Corporation									Y			Y		Y									
Methanex Corporation										Q		Y	Y	Y									Y
National Bank of Canada									Y	Y		Y		Y									
Nestlé Canada Inc	Y									Y			Y										Q
Newfoundland and Labrador																							

Corporations	Indicator and measure of performance										Management	Supply - chain			R&D	Training	Benchmark						
	indicator	metric	measure	framework	monitor	performance	index / indices	scorecard	decision	decision-making	audit	health and safety	purchase	supply chain	supplier	sourcing	research	development	research & development	education	training	benchmark / benchmarking	communication
Hydro																							
Nexen	Q								Q	Y		Y	Y										Q
Nienkämper Furniture & Accessories Inc														Y									
Norbord Inc																							
Nortel Networks Corporation									Y				Y	Y				Y					Y
Nova Chemicals Corporation												Y											
Ontario Power Generation						Q			Y	Y		Y											Q
Petro-Canada									Q	Y													Y
PFB Corporation																							Y
Potash Corporation of Saskatchewan Inc										Y		Y	Y	Y									Y
QIT - Fer et Titane Inc																							
RBC Financial Group									Q	Y		Y	Y	Y									Y
SaskPower										Y		Y		Y				Y					
SITQ Caisse de Dépôt et placement du Québec										Y													
Sun Life Financial Inc										Y		Y											Y
Syncrude Canada Ltd			Y		Y	Y		Y	Y		Y		Y		Y			Q					
Talisman Energy Inc.									Y	Y		Y							Q				
TD Financial Group						Q			Y	Q		Y		Q									Y
Teck Cominco Limited									Y	Y		Y											Y
Teck Cominco Metals Ltd																			Q				
Telus Corporation	Y	Y	Y			Y		Y	Y	Y			Y					Y	Y	Y	Y		Y

Corporations	Indicator and measure of performance										Management		Supply - chain			R&D		Training		Benchmark			
	indicator	metric	measure	framework	monitor	performance	index / indices	scorecard	decision	decision-making	audit	health and safety	purchase	supply chain	supplier	sourcing	research	development	research & development	education	training	benchmark / benchmarking	communication
The Empire Life Insurance Company																							
The St Lawrence Seaway Management Corporation	Y								Y	Y			Y										
Toronto Hydro Corporation	Q						Q				Y												
TransAlta Corporation	Y	Y	Y		Y	Y			Y	Y		Y	Y	Y				Y	Y	Y	Y		
TransCanada Corporation									Y	Y		Y		Y				Y					
Wal-Mart Canada Corporation										Y		Y	Q	Q									Q
West Fraser Timber Co Ltd												Y											
Woodbine Entertainment Group										Q		Y											Y
Xstrata Copper Canada												Y											
Xstrata Nickel							Q			Y		Y		Y									
Yamana Gold Inc									Y	Y													

Y = Yes

Q= Quote from the report

Appendix C: database of indicators

Indicator	Category	Mentions
Funding, donations, sponsorship and community investments	Community	42
Greenhouse gas / CO ₂ equivalent emissions	Emissions & effluents	42
Total employees	Employees	41
Taxes and royalties	Financial	30
Lost time injury frequency	H&S	29
Distribution of donations	Community	24
Total production	Operations	24
Employees by region - percentage of local employees	Employees	23
Environmental spills and releases	Emissions & effluents	22
Total revenues	Financial	20
Number of women	Employees	19
Wages and benefits	Financial	19
All injury frequency (Number of employee injury incidents per 200,000 hours worked)	H&S	18
Energy use intensity	Energy	16
Employees with disabilities	Employees	15
Greenhouse gas emissions intensity	Emissions & effluents	15
Percentage of aboriginal descent employees	Employees	15
Visible minorities employees	Employees	15
Regulatory notifications and fines	Emissions & effluents	14
Total assets	Financial	14
Water consumption	Water	14
Energy consumption (Production)	Energy	13
Net income (\$ in millions)	Financial	13
Water consumption intensity	Water	13
All injury frequency rate (TRIF)	H&S	12
Electricity use	Energy	12
Emissions of sulphur dioxide (SO ₂)	Emissions & effluents	12
Employee turnover rate	Employees	12
Fatalities	H&S	12
Investment in learning / training	Employees	11
Sales	Financial	11
Solid waste material recycled (t) / reused	Waste	11
Women executives	Employees	11
CO ₂ emissions (direct / indirect / total)	Emissions & effluents	10
Reportable environmental incidents	Management	10
Value added and community benefits	Financial	10
Disabled in management	Employees	9
Earning per share (basic and diluted)	Financial	9
Energy saved	Energy	9
Fuel energy use	Energy	9
Health and safety (H&S) incidents	H&S	9
Net earning	Financial	9
Total recordable case rate	H&S	9
Breakdown by age	Employees	8

Indicator	Category	Mentions
Energy use (total electricity and fuel used (TJ))	Energy	8
Number of individual client	Operations	8
Number of planted trees	Reclamation	8
Payments to providers of capital (dividends & interest)	Financial	8
Permit excursion	Management	8
Common shares price / value	Financial	7
Community donations as % of domestic pre-tax profits	Community	7
Emissions of nitrogen oxides (NOx)	Emissions & effluents	7
Hazardous waste	Waste	7
Number of branches / building	Operations	7
Total shareholder return	Financial	7
Total surface water withdrawal (m3/yr)	Water	7
Total waste	Waste	7
Training hours	Employees	7
Visible minorities in management	Employees	7
Volume of spills / weight	Emissions & effluents	7
Amount of debt financing authorized	Financial	6
Amount of purchase of goods and services locally	Purchasing	6
Capital expenditure	Financial	6
Cash flow provided by operating activities	Financial	6
Contribution to local initiatives	Community	6
Cost of all goods, material and services purchased from suppliers	Purchasing	6
Employee personal giving for 2007 to United Way/ Centraide and other charities	Community	6
Employee satisfaction	Employees	6
Fossil fuel intensity	Energy	6
Medical treatments	H&S	6
Paper consumption	Operations	6
Promotion of online services / billing	Service	6
Quantity of waste landfilled	Waste	6
Reclaimed to date (ha)	Reclamation	6
Total acreage / surface	Operations	6
Vessels accident rate / accident frequency	H&S	6
Water consumption (Production) industrial or not mentioned	Water	6
Business volume by Industry sector	Operations	5
Business volume by product / type of product	Operations	5
Carbon intensity in product (direct / total)	Emissions & effluents	5
Cash flow	Financial	5
Breakdown by gender (in union, management and staff)	Employees	5
Energy efficiency plan	Energy	5
Energy use by source	Energy	5
Land status	Reclamation	5
Land to be reclaimed (ha)	Reclamation	5
New reclamation for the year (ha)	Reclamation	5
Number of employees hired	Employees	5
Number of factory audits / workplace inspections	Management	5
Number of unionized employees	Employees	5

Indicator	Category	Mentions
Total groundwater withdrawal (m3/yr)	Water	5
Total suspended solids (TSS)	Emissions & effluents	5
Waste diversion (from network operations)	Waste	5
Water discharged / waste water overflow	Water	5
Air compliance / GAP	Emissions & effluents	4
Amount of purchase of goods and services in Canada	Purchasing	4
Assets under management	Financial	4
Biochemical oxygen demand (BOD)	Emissions & effluents	4
Business volume by geographic market	Operations	4
CO ₂ emissions (direct / indirect / total) by sources	Emissions & effluents	4
CO ₂ emissions intensity	Emissions & effluents	4
Common shares outstanding	Financial	4
Complaints from community	Management	4
Disabling injury frequency rate	H&S	4
Breakdown by unit / operation	Employees	4
Dividends payout ratio	Financial	4
Emissions of total reduced sulphur (TRS)	Emissions & effluents	4
Employee engagement index	Employees	4
Employee recordable injury frequency rate	H&S	4
Estimated CO ₂ equivalent annual reduction (tonnes)	Emissions & effluents	4
Formaldehyde emissions	Emissions & effluents	4
Fossil fuel use	Energy	4
Full time / part time employees	Employees	4
Liquid materials recycled (m3)	Waste	4
Market capitalization	Financial	4
Number of Automated Banking Machines	Operations	4
Number of Business clients	Operations	4
Number of employees who received training	Employees	4
Number of individual volunteering	Employees	4
Number of major production facilities	Operations	4
Operating capacity	Operations	4
Operating costs	Financial	4
Paper use intensity	Operations	4
Quantity of paper shredding - recycling	Operations	4
R&D spending	R&D	4
Shareholder's equity	Financial	4
Solid waste disposal	Waste	4
Total volume of water recycled/reused (m3/yr)	Water	4
Unit price	Financial	4
VOC emissions	Emissions & effluents	4
Volunteer hours	Community	4
Amount of capital projects	Management	3
Amount of debt financing authorized per region	Financial	3
Amount spent on land reclamation / reclamation costs	Reclamation	3
Amounts reported as required under the Canadian National Pollution Release Inventory (NPRI/INRP) legislation	Emissions & effluents	3
Annual dividend on common shares	Financial	3
AOX–Absorbable Organic Halides	Emissions & effluents	3

Indicator	Category	Mentions
Breakdown by visible minorities (in union, management and staff)	Employees	3
Business volume by Canadian region	Operations	3
Client Satisfaction	Satisfaction	3
CO ₂ emissions from vehicle fleet	Emissions & effluents	3
Contractor recordable injury frequency rate	H&S	3
Customer complaints and claims (number)	Satisfaction	3
Distribution Line km (\$)	Operations	3
Earning before interest	Financial	3
Employee compensation	Employees	3
Energy consumption (Building)	Energy	3
Expenses / Expenditure	Financial	3
Flaring & venting	Emissions & effluents	3
Global material consumption	Operations	3
Hours worked / exposure hours	H&S	3
In mines reserves	Operations	3
Investments with economical impact in Québec	Purchasing	3
Jobs maintained or created	Purchasing	3
Long-term debt, including current portion	Financial	3
Non hazardous waste	Waste	3
Non-occupational absences / work absence by leave type	Employees	3
Non-saline water diverted	Water	3
Operating expenses	Financial	3
Operating income	Financial	3
Ozone depleters	Emissions & effluents	3
Passenger (customer) overall satisfaction	Satisfaction	3
Reduction of freshwater demand	Water	3
Return on Regulatory Equity (%)	Financial	3
Sources of Greenhouse Gas Emissions	Emissions & effluents	3
Total dividends paid to Governments	Financial	3
Total items recycled (count)	Waste	3
Waste intensity	Waste	3
Water compliance	Emissions & effluents	3
Work-related accident frequency (Lost time + Medical assistance/200,000 hrs)	H&S	3
Aboriginal in management	Employees	2
Air emissions (SO ₂ , gas flared, benzene, solution gas conservation)	Emissions & effluents	2
Annual employee survey (participation rate)	Employees	2
Average daily production	Operations	2
Awards and recognition	Management	2
Breakdown of shareholders	Financial	2
Breakdown of total annual economic contributions	Financial	2
Business travel (air travel)	Operations	2
Business with Aboriginal Customers	Operations	2
By-product	Waste	2
Capital investment	Financial	2
Cash and cash equivalent	Financial	2
Cell phone recycling / recovering	Operations	2

Indicator	Category	Mentions
Clean Energy (%)	Energy	2
Client surveyed	Satisfaction	2
Closure security / closure provision	Financial	2
Combined emissions of sulphur dioxide (SO ₂), nitrogen oxides (NOx) and volatile organic compounds (VOCs)	Emissions & effluents	2
Common shares purchased	Financial	2
Criteria air contaminant (CAC) : emissions of sulphur dioxide (SO ₂), nitrogen oxides (NOx) and particulate	Emissions & effluents	2
Daily production by product	Operations	2
Daily sales volumes (tonnes) by product	Financial	2
Days-away injury frequency	H&S	2
Debt financing to business	Financial	2
Debt to capitalization	Financial	2
Delays	Service	2
Demand-side management (GWh /year, cumulative since F2008)	Energy	2
Dividend declared per share	Financial	2
Earning before tax	Financial	2
Electricity intensity	Energy	2
Emissions of methane	Emissions & effluents	2
Emissions of sulphur dioxide (SO ₂) intensity	Emissions & effluents	2
Employee Engagement Index (Score out of five)	Employees	2
Energy costs	Energy	2
Energy saved by customers (using PFB products or using energy wisely)	Energy	2
Ensuring access (percentage of branches accessible to individuals with disabilities)	Service	2
Environmental costs (\$ millions)	Management	2
Environmental site assessments	Management	2
Equator principles assessments	Management	2
Financial partner satisfaction	Satisfaction	2
First aid frequency rate	H&S	2
Freshwater withdrawn	Water	2
Fuel consumption (fleet)	Operations	2
Global chemical consumption	Operations	2
Gross income distribution	Financial	2
Growth in internet banking solutions subscribers	Service	2
Halon removal	Operations	2
High-risk accident / Life-threatening occupational injuries	H&S	2
High-risk site assessments	Management	2
Integrity incidents regarding policy	Management	2
Length of employee service	Employees	2
Locations serving Aboriginal communities (number of communities)	Operations	2
Lost-time accidents per 200,000 hours worked	H&S	2
Lost-time injury frequency rate	H&S	2
Medical aid injuries	H&S	2
Natural gas use	Energy	2
Net debt-to-total capitalization	Financial	2
Net income per share	Financial	2

Indicator	Category	Mentions
Nitrous oxide (N2O) emissions	Emissions & effluents	2
Number of Canadian suppliers and service providers	Purchasing	2
Number of corporate and franchised stores / facilities	Operations	2
Number of employee HR complaints (internal / formal)	Employees	2
Number of employees promoted / modified duty	Employees	2
Number of environmental regulatory inspections	Management	2
Number of formal community meetings	Community	2
Operating earnings from continuing operations (\$ millions)	Financial	2
Organizational reputation and leadership	Employees	2
Particulate emissions	Emissions & effluents	2
Percentage of electrical insulating oil reused	Waste	2
Percentage of hybrid vehicles in service fleet (Canada/US)	Operations	2
Percentage water recycled and reused	Water	2
Political contribution	Community	2
Presence in countries	Operations	2
Primary air pollutant emissions	Emissions & effluents	2
Procurement from aboriginal suppliers	Purchasing	2
Production carbon intensity (PCI) (tonnes of CO ₂ e cubic metres – m ³ of oil equivalent)	Emissions & effluents	2
Proved reserves	Financial	2
Quantity of waste incinerated	Waste	2
Reducing customers greenhouse gas emissions	Emissions & effluents	2
Reduction of greenhouse gas emissions	Emissions & effluents	2
Remediation activity (number of sites)	Reclamation	2
Retained earning	Financial	2
Return on assets (%)	Financial	2
System Average Interruption Frequency Index SAIFI (frequency, excluding major events)	Service	2
Tier 1 capital (ratio)	Financial	2
Total factor productivity (%) / productivity ratio	Operations	2
Total fluoride emissions	Emissions & effluents	2
Total PAH emissions	Emissions & effluents	2
Trade volume and average sales price / Average realized price	Financial	2
Turnover by age / gender / country	Employees	2
Waste reduction	Waste	2
Water use by source	Water	2
Workforce injury count	H&S	2
10-year compound annual return (%)	Financial	1
Abandoned wells and pipelines (awaiting reclamation)	Reclamation	1
Absenteeism management costs	H&S	1
Absenteeism rates hourly employees	Employees	1
Acid gas emission rate	Emissions & effluents	1
Additions to property, plant and equipment	Financial	1
Adjusted EBITDA	Financial	1
Age-class distribution and forest types in the FMA area	Operations	1
Amount of authorized financing and corresponding Number of jobs	Operations	1
Amount of global trade facilitated	Operations	1

Indicator	Category	Mentions
Annual average value of pollutant (fluoride / aluminum / particulate)	Emissions & effluents	1
Approximate number of customers interviewed in our banking, wealth management and wholesale businesses in Canada to gauge satisfaction	Satisfaction	1
ASAI2 (% , excluding major events)	Service	1
Ash & Gypsum diverted from landfill	Waste	1
Asset retirement obligations	Financial	1
Attrition by age group (percentage)	Employees	1
Authorized business loans	Operations	1
Average ambient air quality	Emissions & effluents	1
Average annual five-year total shareholder return	Financial	1
Average calories	Operations	1
Average carbon monoxide exposure for QIT employees and contractor	H&S	1
Average daily delivery	Service	1
Average fee rate	Financial	1
Average realized gold price per ounce	Operations	1
Average recycled content of paper	Operations	1
Average salary	Employees	1
Billing accuracy (% of bills that are accurate)	Service	1
Bond fund gross annualised returns	Financial	1
Breakdown by age in the board	Employees	1
Breakdown of financing by type of operation	Operations	1
Breakdown of internal social indicators costs	Employees	1
Breakdown of investment assets	Financial	1
Breakdown of investments	Financial	1
Breakdown of operating cash	Financial	1
Breakdown of purchased energy : purchased energy mix and renewability	Energy	1
Breakdown of QIT's effect on employment	Financial	1
Breakdown of social compliance audits type	Management	1
CAIDI (hours, excluding major events)	Service	1
Canadian equity multi fund gross annualised returns	Financial	1
Capital accumulation plan / asset ratio	Financial	1
Capital expenditure by province	Financial	1
Capture rate of fly ash at SaskPower's generating facilities (Percentage)	Emissions & effluents	1
Cash efficiency ratio	Financial	1
Cash flow provided by operating activities per share	Financial	1
CELID-62 (% , excluding major events)	Service	1
CEMI-4 (% , excluding major events)	Service	1
Changes in Hydro- Québec's image (scale of 10)	Satisfaction	1
Client satisfaction by region	Satisfaction	1
CO ₂ EPC customers have reduced through electricity efficiencies	Emissions & effluents	1
COc emissions vs. methanol production	Emissions & effluents	1
Combined emissions of sulphur dioxide (SO ₂), nitrogen oxides (NOx) and total reduced sulphur (TRS)	Emissions & effluents	1
Common equity to risk-weighted assets	Financial	1

Indicator	Category	Mentions
Community investment by business unit	Community	1
Composition of the company's total carbon footprint	Energy	1
Concession revenue per passenger	Financial	1
Conservation and demand management investment	Reclamation	1
Contaminated sites	Management	1
Corporate audits conducted	Management	1
Corporate resource allocation (as a percentage of revenue)	Financial	1
Cost of awards	Management	1
Cost of sales per ounce sold	Operations	1
Cost of utilities (power, water, rail, etc.)	Purchasing	1
CSAT Index (% of customers satisfied and very satisfied) Scored 7 to 10	Satisfaction	1
Cumulative contribution of employees and technical projects to cost reduction	Management	1
Customer electricity intensity (kilowatt hours/account/year)	Operations	1
Customer growth	Operations	1
Customer loyalty index	Satisfaction	1
Customer value index	Service	1
Dangerous occurrence frequency	H&S	1
Days-away injuries	H&S	1
Debt per enplaned passenger (annualized)	Financial	1
Debt to GAAP equity (%)	Financial	1
Deferred debt costs and swap gains included in long-term debt	Financial	1
Delivery of wood from certified forests	Operations	1
Demand growth (with and without demand-side management)	Operations	1
Deposit	Financial	1
Discharges to water (salt, N, F, phosphorus, methanol)	Emissions & effluents	1
Distributors in Canada and around the world	Employees	1
Donated Aeroplan miles by members to charitable organisations	Community	1
Earnings per share: growth	Financial	1
EBIT Interest coverage	Financial	1
Eco-efficiency	Energy	1
Economical impact of funded projects	Financial	1
Efficiency ratio	Financial	1
Electricity-related accidents and deaths (number)	H&S	1
Emissions of nitrogen oxides (NOx) intensity	Emissions & effluents	1
Emissions to air from permitted sources	Emissions & effluents	1
Employee retention rate	Employees	1
Employee transportation	Employees	1
Employee value index	Employees	1
Energy reduction on a typical day	Energy	1
Energy use excluding electricity	Energy	1
Engagement index	Employees	1
Environment, health and safety capital	Financial	1
Environmental compliance	Management	1
Environmental management system (EMS) upgraded or controlled	Management	1

Indicator	Category	Mentions
Estimated fleet	Operations	1
Exploration and development spending	Operations	1
Financial support for volunteering	Community	1
Fire distribution in the FMA area	Operations	1
First call resolution (% of customer calls resolved first time)	Service	1
Fixed rate debt obligations as percentage of total debt obligations	Financial	1
Fixed source sound contributions	Management	1
Flaring reductions	Emissions & effluents	1
Fleet performance	Operations	1
Fossil fuel reduction	Energy	1
Free banking services (customers)	Service	1
Free cash flow	Financial	1
Fuel energy use intensity	Energy	1
Fuel system upgrades	Management	1
Gaseous fluoride in ambient air	Emissions & effluents	1
Generation by fossil fuel	Operations	1
Global equity fund gross annualised returns	Financial	1
Gold equivalent ounces – produced	Operations	1
Gold equivalent ounces – sold	Operations	1
Green power certificates	Management	1
Gross margin	Financial	1
Growing and harvesting area	Operations	1
Growth in client satisfaction	Satisfaction	1
GTAA creek rehabilitation initiatives	Reclamation	1
H&S management costs	H&S	1
Health and Safety (H&S) non compliance	H&S	1
Health campaigns	H&S	1
Host governments' share of Nexen's net income	Financial	1
Illnesses - Permanent disability accommodation summary	H&S	1
Impact of CO ₂ sequestration on GHG emissions intensity	Emissions & effluents	1
Impact on protected area	Operations	1
Incident investigation quality	H&S	1
Incidents of very high severity potential	H&S	1
Income before unusual items (after-tax)	Financial	1
Income from continuing operations (\$M)	Financial	1
Income from financial investments	Financial	1
Injury frequency involving hands and eyes	H&S	1
Internal energy efficiency (%)	Operations	1
ISO certified operations	Management	1
Km driven	H&S	1
Land occupied by mineral extraction waste	Waste	1
Land use footprint	Operations	1
Landfill waste diversion rate	Waste	1
Lead acid battery recycling	Operations	1
Leading economic indicators developed economies	Financial	1
Leading market returns for 2007	Financial	1
Lease payments to landowners	Financial	1

Indicator	Category	Mentions
Leased land planted	Operations	1
Loans and acceptances	Financial	1
Logistics centre diversion	Operations	1
Long-term debt obligations	Financial	1
Lost time accident	H&S	1
Lost time accident by type	H&S	1
Lost time accident by work group	H&S	1
Lost time accident rate	H&S	1
Low & intermediate level radioactive waste	Waste	1
Lowest basic letter rates	Service	1
Management fee comparison	Financial	1
Mandatory EH&S training	H&S	1
Maximum daily average of emissions of sulphur dioxide (SO ₂)	Emissions & effluents	1
Metals released in effluent	Emissions & effluents	1
Methanol usage	Operations	1
Money market fund gross annualised returns	Financial	1
Net cash payments for income taxes	Financial	1
Net cash payments for interest	Financial	1
Net income to Nexen shareholders	Financial	1
Net interest margin	Financial	1
New graduates hired	Employees	1
New hires by group (women, Aboriginal, visible minorities, disabled) percent of total	Employees	1
Non aeronautical revenues	Financial	1
Non-accident releases	Emissions & effluents	1
Non-compliance events by emissions	Emissions & effluents	1
Non-executive employee base salaries	Financial	1
Non-interest expenses	Financial	1
Northern spending	Operations	1
Number of calls received from employees seeking assistance	Employees	1
Number of Canadian universities accessing the scholarship program	Community	1
Number of companies contracted	Financial	1
Number of cooperative education and summer students hired	Employees	1
Number of customer per week	Operations	1
Number of days away	H&S	1
Number of EH&S auditor trained	H&S	1
Number of eligible participants in this performance-based program	Employees	1
Number of Emergency Preparedness Response (ERP) exercises	H&S	1
Number of employees aged 45 and above	Employees	1
Number of employees for energy and GHG training sessions	Management	1
Number of employees internally moved to support global growth areas	Employees	1
Number of employees who received environmental training	Management	1
Number of employees who received SD training	Management	1

Indicator	Category	Mentions
Number of environmental review findings by operation	Management	1
Number of environmentally friendly products introduced	Management	1
Number of factories disapproved	Purchasing	1
Number of financed operations	Operations	1
Number of formal safety meetings	H&S	1
Number of full-time equivalent permanent employees	Employees	1
Number of job safety analyses performed and documented	H&S	1
Number of languages spoken by bank personnel	Employees	1
Number of leaks / 1,000 km pipeline	Emissions & effluents	1
Number of locations / brokers in Canada	Operations	1
Number of major operating incidents	Operations	1
Number of markets	Operations	1
Number of oil and chemical spills greater than one barrel	Emissions & effluents	1
Number of old thermostats diverted from landfills	Waste	1
Number of outsourced workers	Employees	1
Number of reclamation certificates received	Reclamation	1
Number of Registered LEED™ Buildings	Management	1
Number of retail centres	Operations	1
Number of sites with a Community Engagement and Sustainable Development (CE&SD) plans	Management	1
Number of suppliers and factory managers attending ethical standards training session in 2007 (globally)	Purchasing	1
Number of temporary or contractor staff	Employees	1
Occupational illness	H&S	1
OMG&A (Non fuel) / Customer (\$)	Financial	1
OMG&A (Non fuel) / MWh Delivered (\$)	Financial	1
OMG&A (Non fuel) / Transmission & distribution line km (\$)	Financial	1
On-duty accident and occupational disease costs	H&S	1
On-reserve housing loans (number of communities)	Operations	1
Operating cash flow post dividend to net capital expenditure (%)	Financial	1
Operating profit	Financial	1
Operating return on capital employed	Financial	1
Operations	Operations	1
Outputs	Financial	1
Overall public satisfaction (%)	Satisfaction	1
Overall safety performance	H&S	1
Packaging reduction	Operations	1
Patents from R&D	R&D	1
Payments to capital providers and governments	Financial	1
Payments to local and provincial governments by region	Financial	1
Percentage of ash and residue utilized	Waste	1
Percentage of audits that were unannounced	Management	1
Percentage of Canadian employees participating in our industry-leading employees savings plan	Employees	1
Percentage of Canadian employees who feel TD is an inclusive work environment	Employees	1
Percentage of Canadians who believe (the company) Wal-Mart is a valuable member of their community	Satisfaction	1
Percentage of customer-facing employees in Canada	Employees	1

Indicator	Category	Mentions
Percentage of disability insurance claims due to depression and anxiety	Community	1
Percentage of employees covered by collective agreements	Employees	1
Percentage of merchandise sourced in Canada	Purchasing	1
Percentage of northern employees	Employees	1
Percentage of production from coniferous (softwood)	Operations	1
Percentage of production from deciduous (hardwood)	Operations	1
Percentage of production without air emissions	Operations	1
Percentage of regional operations	Operations	1
Percentages of CO ₂ storage in Alberta	Emissions & effluents	1
Permanent employees	Employees	1
Personal care hours used / average by employee	Employees	1
PFC emissions (total & per sites)	Emissions & effluents	1
Plant availability	Operations	1
Portfolio	Financial	1
Proceeds from sale of assets	Financial	1
Production and production growth (after royalties)	Financial	1
Production per site	Operations	1
Property damage - accident	H&S	1
Property, plant and equipment and intangible asset expenditures	Financial	1
Provision for credit losses	Financial	1
Recovery of solid waste	Waste	1
Reduction of pay defects	Employees	1
Regular workforce by employment category	Employees	1
Renewable energy purchased (Canada - specifically Ontario and Alberta)	Purchasing	1
Reservoir storage (Gigawatt Hours)	Operations	1
Restricted work activity frequency rate	H&S	1
Retail/wholesale ratio	Financial	1
Retirement system asset	Financial	1
Retirement system contribution	Financial	1
Retirement system membership	Financial	1
Retirement system withdrawal and payment	Financial	1
Return on investments	Financial	1
Revenue before royalties	Financial	1
Revenue from electricity sales inside and outside Québec (\$M)	Financial	1
Risk-weighted assets	Financial	1
Safety improvement	H&S	1
Safety interactions per month	H&S	1
Sales of Methanex-produced methanol (000s tonnes)	Financial	1
Seedling planted	Reclamation	1
Self generated electricity	Energy	1
Service access for customer	Service	1
SFM Certified status	Management	1
Short-term debt obligations	Financial	1
Small business customer loyalty index	Satisfaction	1

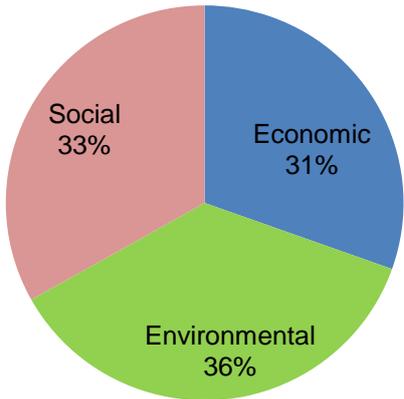
Indicator	Category	Mentions
Soil treated and recycled	Reclamation	1
Spilled hydrocarbons versus production	Emissions & effluents	1
Stakeholder satisfaction	Satisfaction	1
Steam oil ratio	Operations	1
Stock option outstanding	Financial	1
Stormwater reuse	Water	1
Sustainability investments (\$ millions)	Management	1
System availability	Service	1
System Average Interruption Duration Index SAIDI	Service	1
System reliability	Service	1
TD Canada Trust customer experience index	Satisfaction	1
Team member recognition spend	Employees	1
Technology disposal program (Canada)	Waste	1
Teleconferencing (growth)	Operations	1
Timber/fibre rail deliveries	Operations	1
Total average funds managed	Financial	1
Total capital ratio	Financial	1
Total cumulative volume CO ₂ sequestered	Emissions & effluents	1
Total debt	Financial	1
Total dioxin and furan emissions	Emissions & effluents	1
Total liabilities	Financial	1
Total number of shareholders	Financial	1
Total oil-in-produced-water discharged to sea	Emissions & effluents	1
Total operating expenses per passenger	Financial	1
Total revenue per passenger	Financial	1
Total volume of water managed / treated (m ³ /yr)	Water	1
Total wells undergoing active reclamation	Operations	1
Transactions by dollar value	Operations	1
Transactions by type of product	Operations	1
Transmission & distribution capital expenditures	Financial	1
Treasury fund gross annualised returns	Financial	1
Type of health & safety incident	H&S	1
Uncontrolled process fires	H&S	1
Use of post consumer recycled fibre	Operations	1
Use of thermal energy	Energy	1
Vacancy rate	Operations	1
Value of fee refunds granted to qualifying groups	Financial	1
Vegetation control along transmission line rights-of-way	Operations	1
Vegetation control on dikes and dams (ha) transmission line rights-of-way	Operations	1
Vessels transit	Operations	1
Waste recovery	Waste	1
Waste water generation (Production)	Water	1
Waste water generation intensity	Water	1
Water consumption (Production) potable	Water	1
Wells drilled (net wells)	Operations	1
Wind generation	Energy	1
Winter Generation Availability Factor ¹ (Percentage of units	Service	1

Indicator	Category	Mentions
in the system available to generate electricity [hours available for service/total hours] during the critical peaking period of November 15 to February 15)		
Wood consumption reduction	Operations	1
Wood residue utilization	Waste	1
Workers eligible for retirement	Employees	1

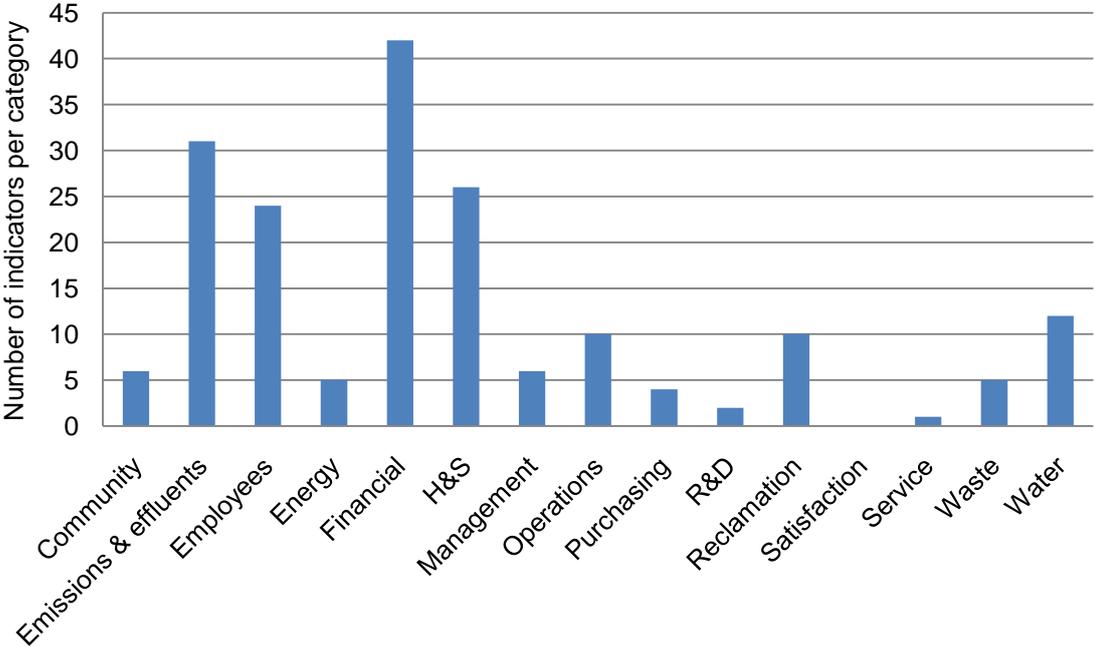
Appendix C: Statistics per industry sector

Oil and gas		
Total number of indicators:	184	indicators
Number of corporations:	13	corporations
Minimum:	0	indicator
Maximum:	42	indicators
Mean value:	25.92	indicators per report
Median value:	29	

Oil & Gas: breakdown of indicators along the three dimensions of sustainability

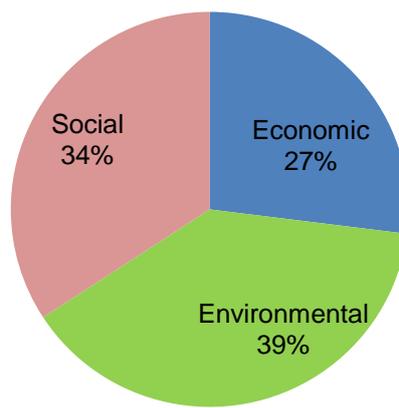


Oil & Gas: breakdown of indicators per category

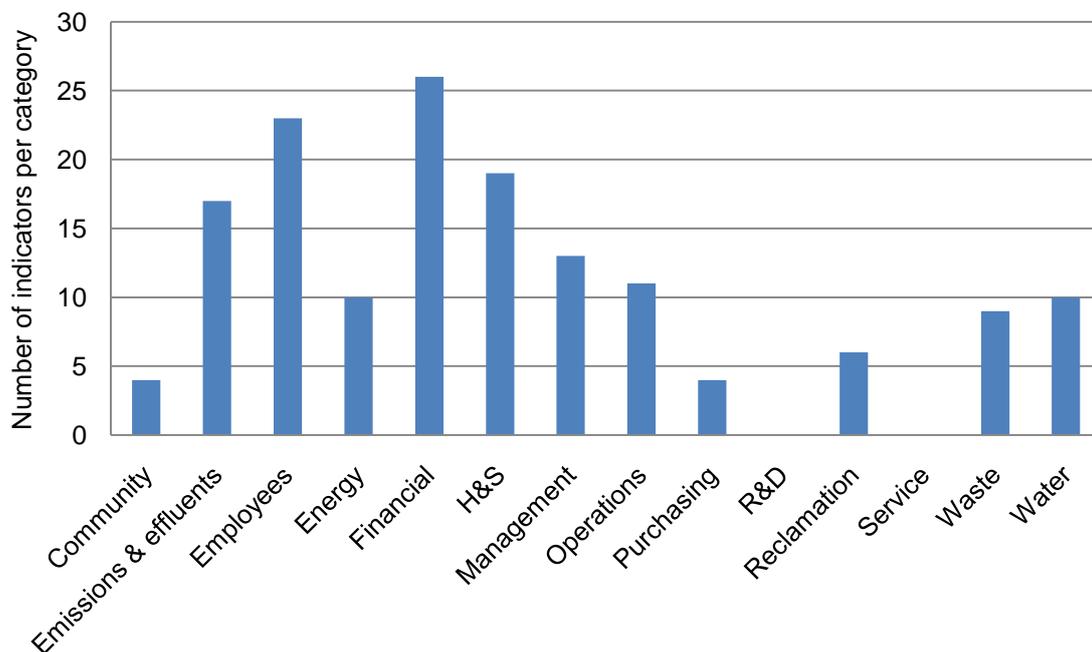


Mining		
Total number of indicators:	152	indicators
Number of corporations:	16	corporations
Minimum:	2	indicators
Maximum:	31	indicators
Mean value:	20.63	indicators per report
Median value:	23	

Mining:
breakdown of indicators along the three dimensions of sustainability



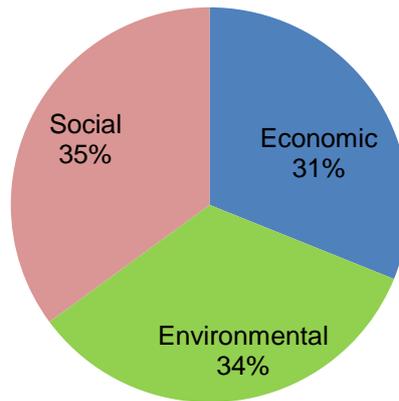
Mining: breakdown of indicators per category



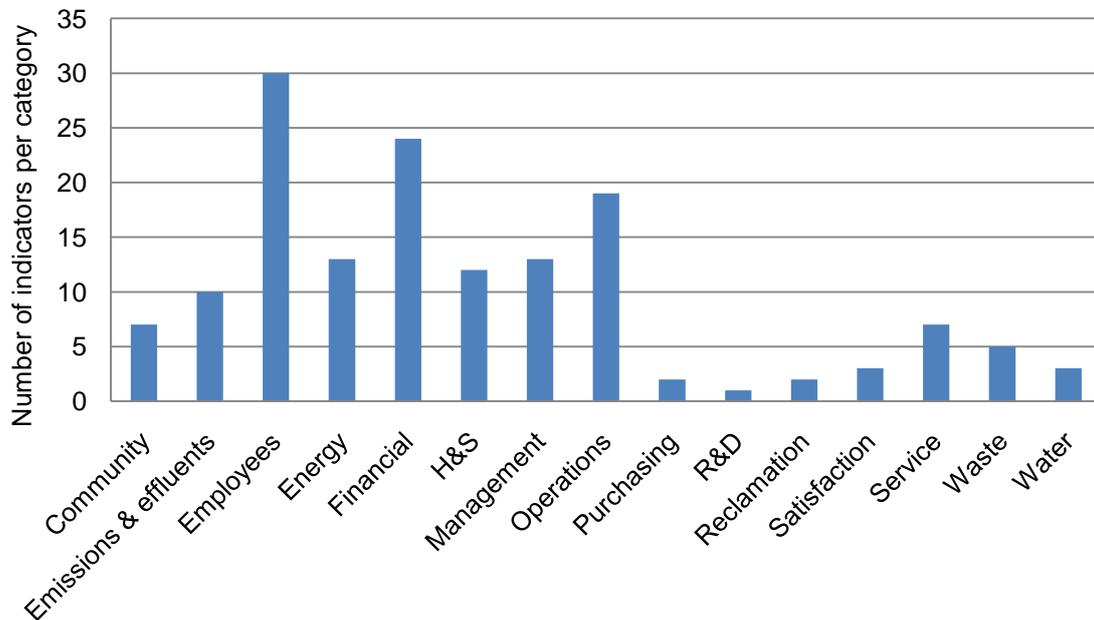
Transport, communication and services

Total number of indicators:	151	indicators
Number of corporations:	10	corporations
Minimum:	0	indicators
Maximum:	52	indicators
Mean value:	21.30	indicators per report
Median value:	14.5	

**Transport, communication and services:
breakdown of indicators along the three dimensions of sustainability**

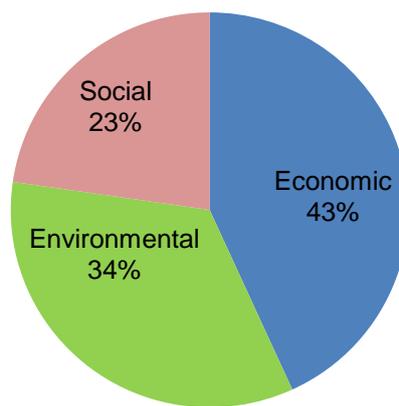


Transport, communication and services: breakdown of indicators per category

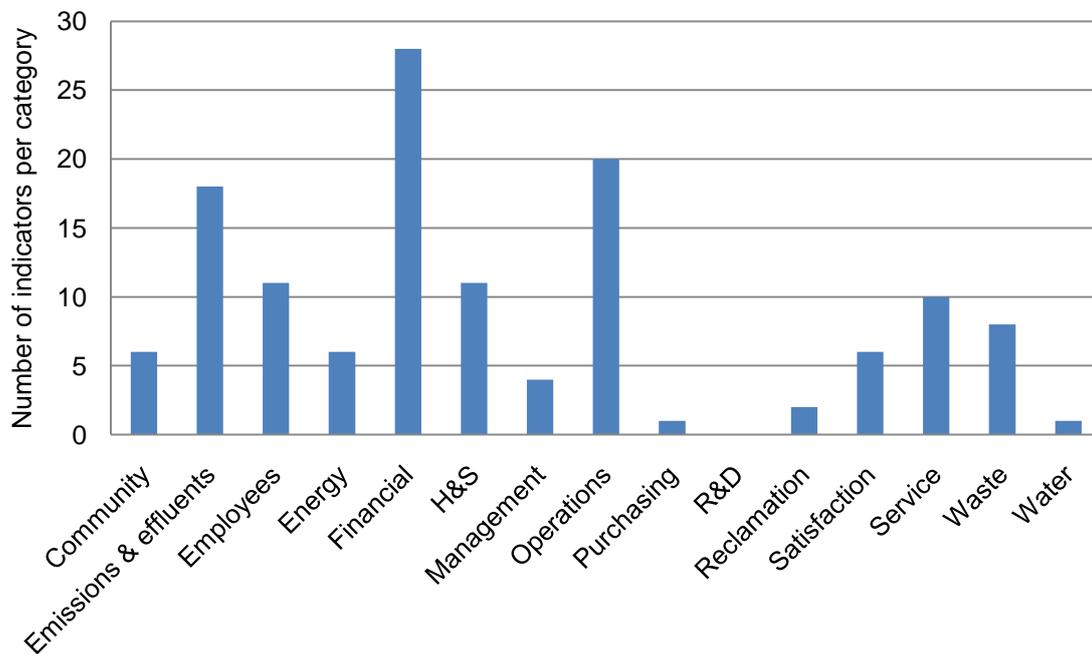


Electricity		
Total number of indicators:	132	indicators
Number of corporations:	9	corporations
Minimum:	4	indicators
Maximum:	47	indicators
Mean value:	19.44	indicators per report
Median value:	16	

Electricity:
breakdown of indicators along the three dimensions of sustainability

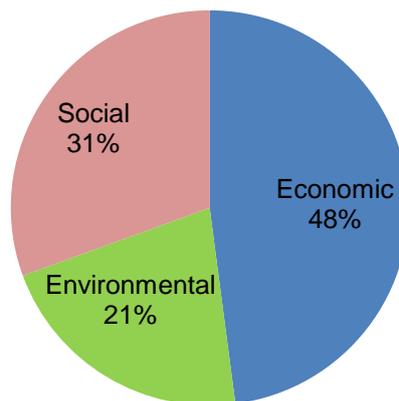


Electricity: breakdown of indicators per category

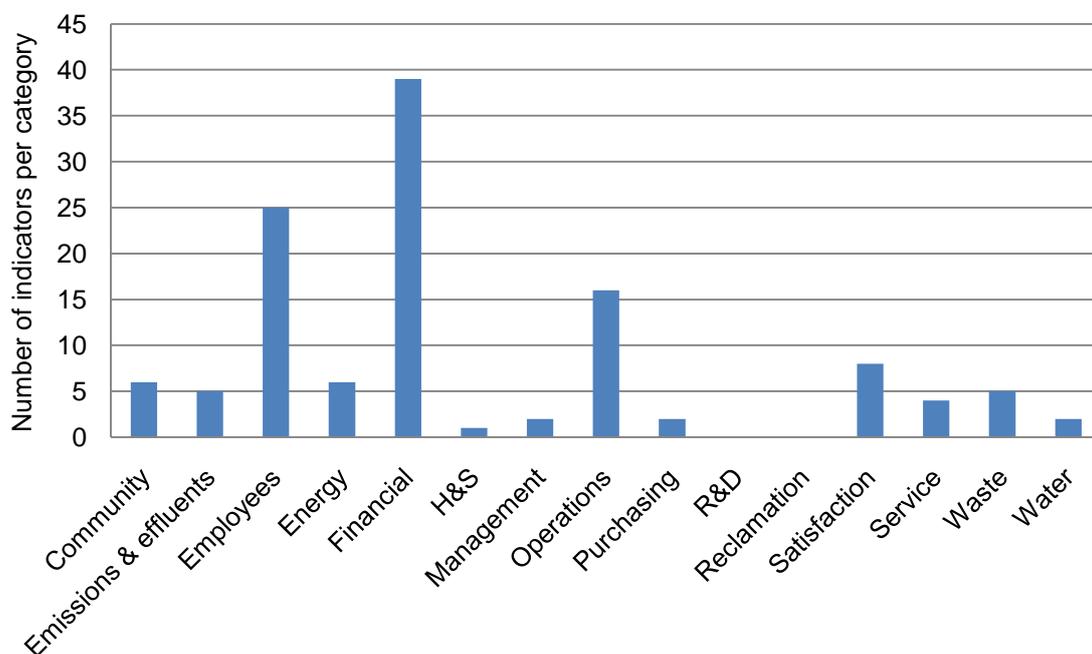


Banks		
Total number of indicators:	121	indicators
Number of corporations:	9	corporations
Minimum:	2	indicators
Maximum:	46	indicators
Mean value:	25.67	indicators per report
Median value:	23	

Banks: breakdown of indicators along the three dimensions of sustainability

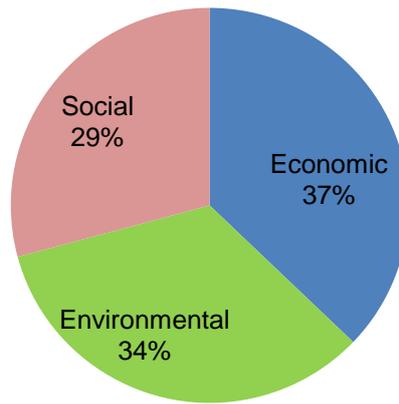


Banks: breakdown of indicators per category

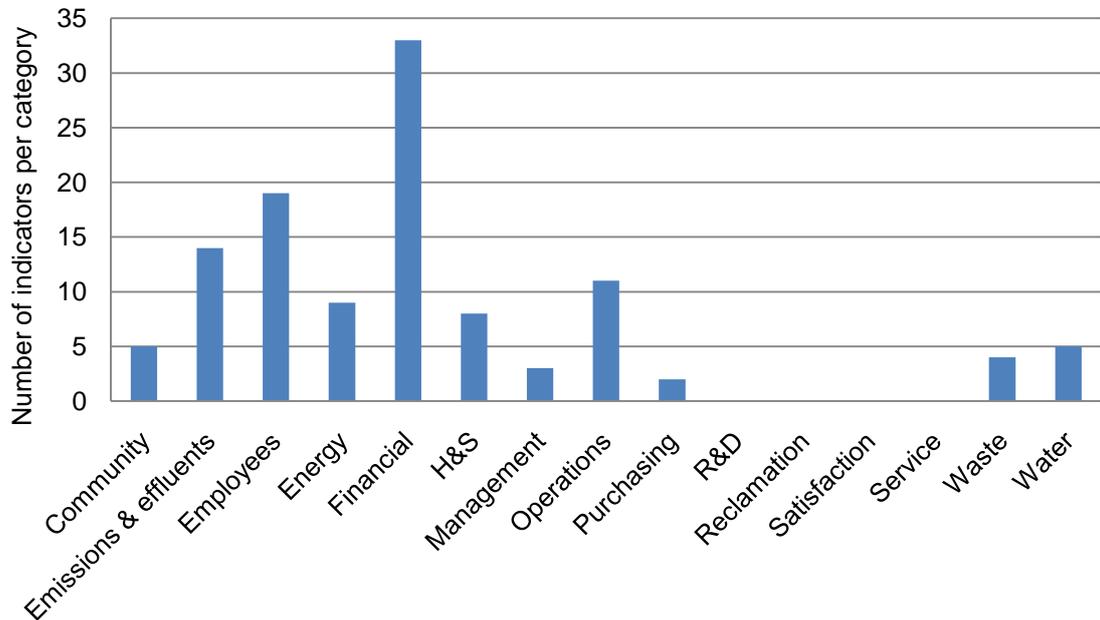


Engineering, construction and chemicals		
Total number of indicators:	113	indicators
Number of corporations:	6	corporations
Minimum:	6	indicators
Maximum:	62	indicators
Mean value:	27.17	indicators per report
Median value:	23.5	

**Engineering, construction and chemicals:
breakdown of indicators along the three dimensions of sustainability**

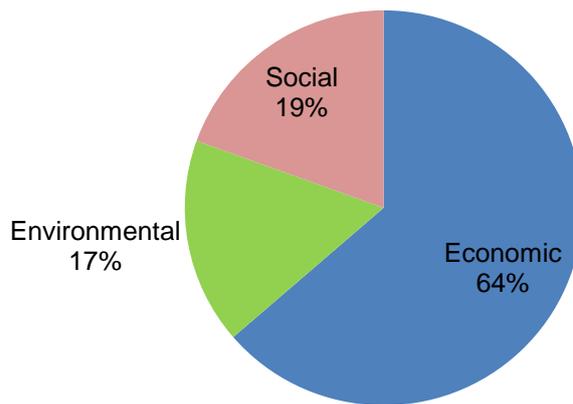


Engineering, construction and chemicals: breakdown of indicators per category

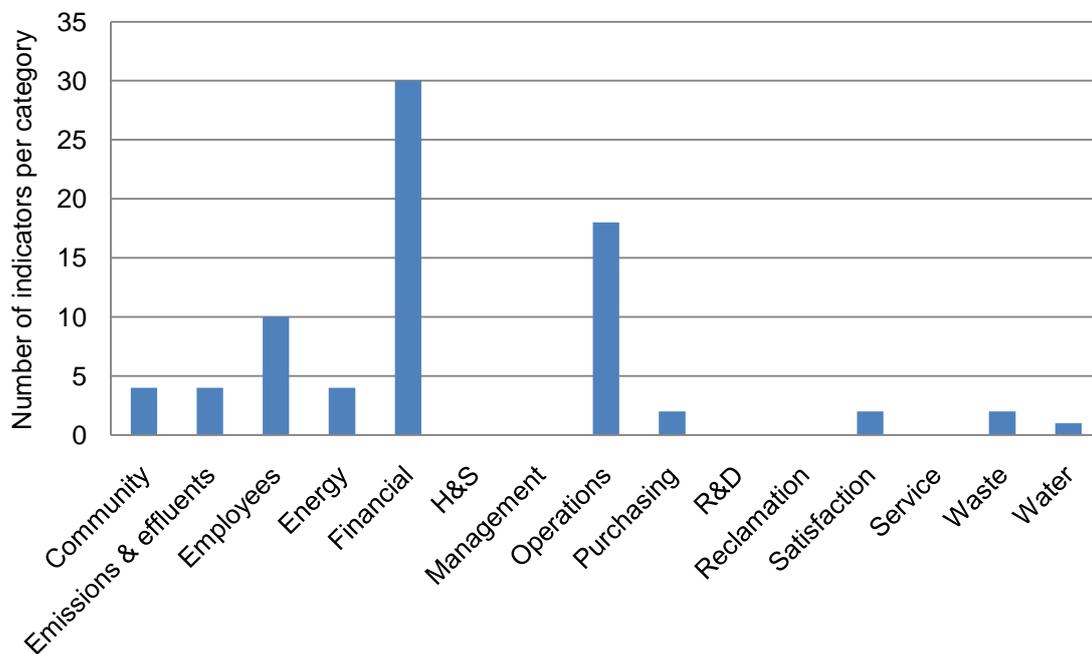


Finance		
Total number of indicators:	77	indicators
Number of corporations:	10	corporations
Minimum:	2	indicators
Maximum:	25	indicators
Mean value:	11.20	indicators per report
Median value:	8.5	

Finance: breakdown of indicators along the three dimensions of sustainability

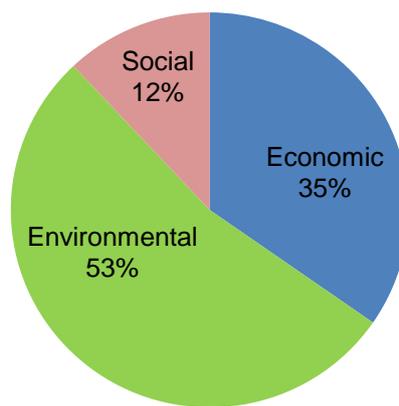


Finance: breakdown of indicators per category

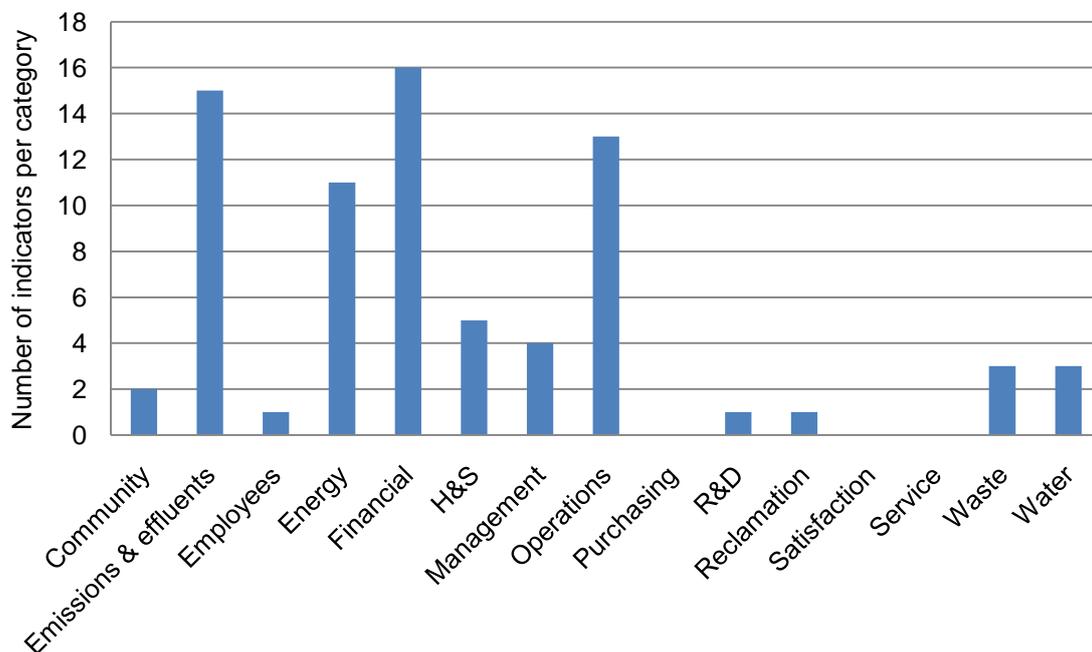


Forestry and paper		
Total number of indicators:	75	indicators
Number of corporations:	6	corporations
Minimum:	4	indicators
Maximum:	34	indicators
Mean value:	16.83	indicators per report
Median value:	16	

**Forestry and paper:
breakdown of indicators along the three dimensions of sustainability**

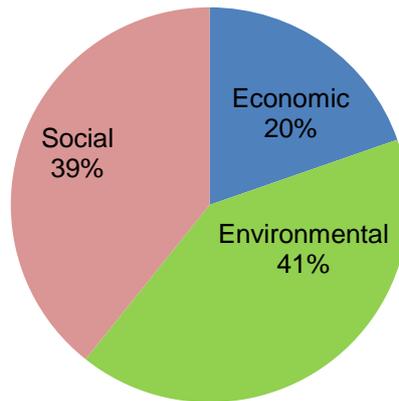


Forestry and paper: breakdown of indicators per category

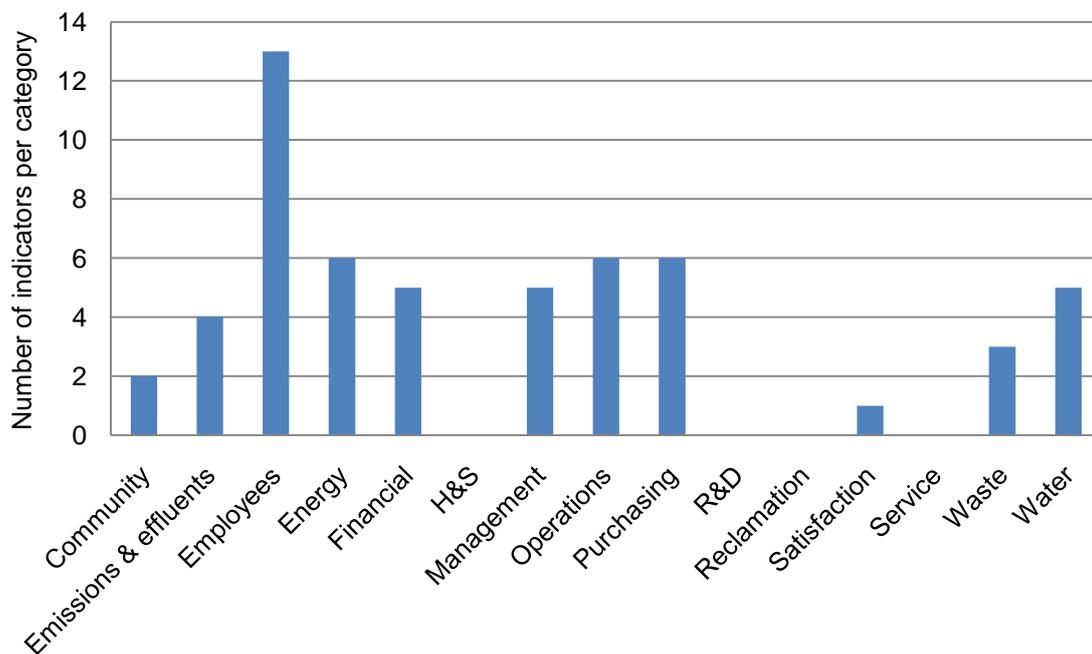


Retail and food		
Total number of indicators:	56	indicators
Number of corporations:	11	corporations
Minimum:	0	indicator
Maximum:	20	indicators
Mean value:	6	indicators per report
Median value:	3	

**Retail & food:
breakdown of indicators along the three dimensions of sustainability**

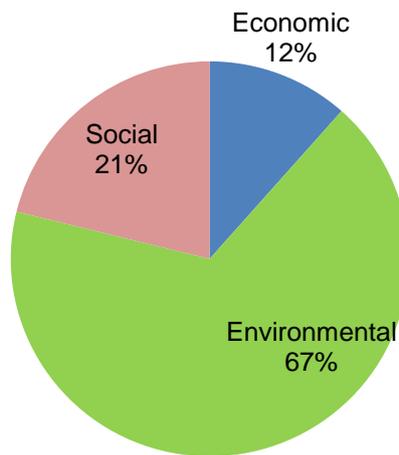


Retail & food: breakdown of indicators per category

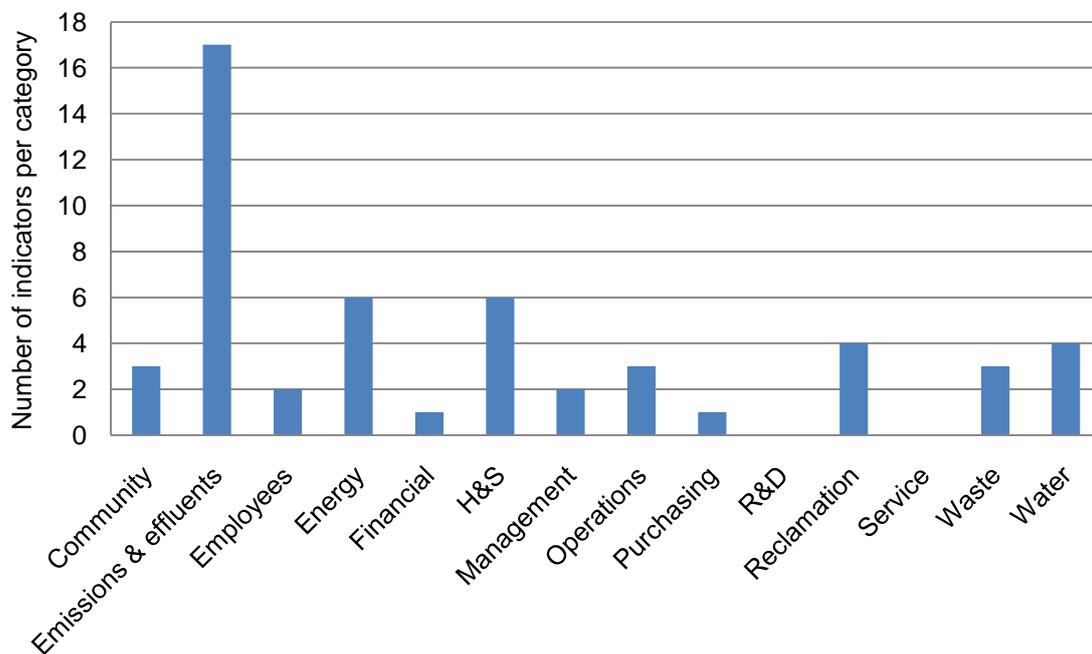


Steel		
Total number of indicators:	52	indicators
Number of corporations:	4	corporations
Minimum:	0	indicator
Maximum:	27	indicators
Mean value:	15.50	Indicators per report
Median value:	17.5	

Steel: breakdown of indicators along the three dimensions of sustainability



Steel: breakdown of indicators per category



Appendix D: Frequency of use and publication of GRI indicators

Code	GRI Indicator	Reports
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	28
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	19
EC3	Coverage of the organization's defined benefit plan obligations.	14
EC4	Significant financial assistance received from government.	18
EC5	Range of ratios of standard entry level wage compared to local minimum wage at significant locations of operation.	6
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	19
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	13
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	16
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	11
EN1	Materials used by weight or volume.	16
EN2	Percentage of materials used that are recycled input materials.	12
EN3	Direct energy consumption by primary energy source.	27
EN4	Indirect energy consumption by primary source.	22
EN5	Energy saved due to conservation and efficiency improvements.	19
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	18
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	12
EN8	Total water withdrawal by source.	23
EN9	Water sources significantly affected by withdrawal of water.	14
EN10	Percentage and total volume of water recycled and reused.	12
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	12
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	15
EN13	Habitats protected or restored.	15
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	17
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations by level of extinction risk.	7
EN16	Total direct and indirect greenhouse gas emissions by weight.	27
EN17	Other relevant indirect greenhouse gas emissions by weight.	12
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	21
EN19	Emissions of ozone-depleting substances by weight.	12
EN20	Nox, SOx, and other significant air emissions by type and weight.	19
EN21	Total water discharge by quality and destination.	16

Code	GRI Indicator	Reports
EN22	Total weight of waste by type and disposal method.	22
EN23	Total number and volume of significant spills.	21
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	11
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.	5
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	22
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	7
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	22
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	12
EN30	Total environmental protection expenditures and investments by type.	9
LA1	Total workforce by employment type, employment contract, and region.	27
LA2	Total number and rate of employee turnover by age group, gender, and region.	20
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	12
LA4	Percentage of employees covered by collective bargaining agreements.	25
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	13
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	13
LA7	Rates of injury, occupational diseases, lost day's, absenteeism and total number of work-related fatalities, by region.	25
LA8	Education, training, counselling, prevention and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	17
LA9	Health and safety topics covered in formal agreements with trade unions.	9
LA10	Average hours of training per year per employee by employee category.	20
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	16
LA12	Percentage of employees receiving regular performance and career development reviews.	16
LA13	Composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity.	26
LA14	Ratio of basic salary of men to women by employee category.	10
HR1	Percentage and total number of significant investment agreements that include human rights clauses or that underwent human rights screening.	10

Code	GRI Indicator	Reports
HR2	Percentage of significant suppliers and contractors that have undergone screening on human rights and actions taken.	14
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	16
HR4	Total number of incidents of discrimination and actions taken.	21
HR5	Operations identified in which the right to exercise freedom of association or collective bargaining may be at significant risk, and actions taken to support these rights.	16
HR6	Operations identified as having significant risk for incidents of child labour, and measures taken to contribute to the elimination of child labour.	13
HR7	Operations identified as having significant risk for incidents of forced or compulsory labor, and measures taken to contribute to the elimination of forced or compulsory labor.	12
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	8
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	12
SO1	Nature, scope, and effectiveness of any programs and practices that assess and manage the impacts of operations on communities, including entering, operating, and exiting.	23
SO2	Percentage and total number of business units analyzed for risks related to corruption.	15
SO3	Percentage of employees trained in organization's anti-corruption policies and procedures.	22
SO4	Actions taken in response to incidents of corruption.	16
SO5	Public policy positions and participation in public policy development and lobbying.	18
SO6	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	13
SO7	Total number of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes.	11
SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	15
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	14
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services, by type of outcomes.	5
PR3	Type of product and service information required by procedures and percentage of significant products and services subject to such information requirements.	9
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labelling, by type of outcomes.	5
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	14

Code	GRI Indicator	Reports
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	13
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes.	6
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	11
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	12

Appendix E: List of quotations

Selection and use of indicators

Alcoa	Sustainable development is the foundation of Alcoa's vision for the years ahead. To this end, a strategic framework has been developed setting out clear targets by which progress in carrying out this vision can be measured
Bell Alliant	We measure two key components of safety to determine success or failure. The first component is compliance, which is a measure used to determine how a team is doing at keeping their training current, conducting observations and inspections, and holding regular meetings with safety-related topics. A formula is used to determine a group's overall compliance (...). The second key safety component we measure is related to incidents occurring in the workplace
Bell Inc.	Waste diversion from network operations. This new key indicator was selected to focus on our core telecom operations
Diavik Diamond	Diavik was recognized as a leader in Aboriginal relations by reaching the prestigious Gold level of achievement under the Canadian Council for Aboriginal Business (CCAB) Progressive Aboriginal Relations (PAR) program. (...) The PAR program provides a framework for setting objectives, developing action plans, measuring performance, [and] achieving results
Inmet Mining Corporation	Our data are generally disaggregated to the operations level, since that is the level on which we operate our business. In addition, we have provided corporate totals for several key performance indicators that we use on an ongoing basis to manage the day-to-day safety, environmental and community affairs aspects of our business.
Inmet Mining Corporation	Data for the indicators are collected and compiled using information from a standard template that each operation (...) completes and returns to our head office in Toronto. Operations are asked to explain significant deviations in year-over-year trends and any challenges in meeting performance targets
Jacques Whitford	Corresponding with our objective to expand provision of external sustainability services, a new indicator is being introduced in FY09 to assess our net revenue from sustainability services as a percentage of our total net service revenue. A more comprehensive set of sustainability-oriented indicators is being considered
Jacques Whitford	We also track health and safety metrics and statistics, incorporating key health and safety indicators into employee performance evaluations as well as quarterly progress reviews for each region
Nestlé	Environmental Performance Indicators (EPIs) are used to measure and drive positive environmental impacts, based on indicators such as the use of energy and water, as well as waste water and air emissions. EPIs ensure that preserving natural resources and minimizing waste are an integral part of the day-to-day activities in all Nestlé operations.
Nexen	This indicator measures both the number of spills and the number of exceedances of regulatory permits
Talisman	The performance indicators were selected by Talisman primarily on the basis of perceived external stakeholder interest
Toronto Hydro	As a final note, there are areas in this report that point towards the development of new indicators which may be selected for future Corporate Responsibility reports. 'Customer satisfaction', 'procurement & supply Chain', 'Greenhouse Gases', 'stakeholder engagement', and 'Volunteerism' are examples where Toronto Hydro is doing the 'right' thing now, based on its Code of Business Conduct, but where for the time being at least, no formal measures exist to capture results and progress

Toronto Hydro	This indicator consists of two values. The first represents the average percentage of calls monthly that are answered in less than 30 seconds. The second value takes into account the average quality score for all calls monitored per month
BC hydro	We evaluate our performance with specific targets and measures, mapping the right indicators for each of the 15 long-term goals. This enables BC Hydro to modify short- and long-term plans at early stages, and ensure we are on the right track to meeting our goals
Enbridge	The addition of safety performance categories to short-term incentive reward plans has had a direct and positive influence on some Performance Indicators.
Telus	An indicator of the inclusiveness and respect within our workforce is based on analysis of complaints filed by our team members with the Canadian Human Rights Commission (CHRC). These complaints identify practices that are causing concern with team members and provide an objective process for determining or confirming the appropriateness of practices as business and societal priorities evolve.
Transalta	As part of Target Zero, TransAlta has implemented several programs including workplace environment, health and safety (EH&S) inspections, investigations of every incident, and mandatory EH&S training. We track these indicators to improve our performance.
Export Development Canada	<ul style="list-style-type: none"> ✓ A redesign of performance measures, in order to better demonstrate the effects of what we do and illustrate the areas in which we need to improve, is underway. ✓ A number of new measures have been introduced in this report that we believe are material. Plans are underway to introduce new measures with greater relevance and challenge. These will be incorporated into future reports.
Export Development Canada	As part of EDC's commitment to account for and reduce the environmental impacts of our internal operations, we are reporting on our environmental footprint for 2007. Data collected in 2007 will provide a baseline against which we will measure our progress in future years.
The Saint Lawrence Seaway Management Corporation	The portfolio of indicators was examined and adjusted to better fit how the Corporation's vision for the future had evolved with the changing business environment. Targets continue to be set yearly and performance reviewed monthly during the regular management and team meetings.
The Saint Lawrence Seaway Management Corporation	Corporate Social Responsibility (CSR) decision-making tools have been developed to help SLSMC employees incorporate CSR into their day-to-day activities

Management - Decision making

Agrium	Agrium Owners are also able to contribute to company decision-making through their participation in our Annual General Meeting process.
ARC	ARC follows a decentralized approach to community outreach because it puts decision making closest to the action.
Bank of Montreal	In 2007, we began re-examining our lending policies to ensure that we appropriately incorporate climate change and biodiversity into our decision-making processes. We have also been taking advantage of opportunities to support our customers as they develop renewable and/or alternative energy offerings that include wind power, ethanol and biodiesel. For example, we are an active provider of investment and corporate banking services to producers of renewable fuels across North America. As well, we are a leader in financing the construction of wind farms in Canada.
Bank of Nova Scotia	Scotiabank Group understands that embracing diversity and harnessing the skills of the broadest spectrum of talent will generate more innovative thinking, better decision-making and stronger business results.
Bank of Nova Scotia	Scotiabank is a major international financial institution, and our day-to-day operations have a number of direct and indirect impacts on the environment. We have launched internal initiatives aimed at reducing consumption, and we routinely factor environmental considerations into our strategic decision-making process and consult regularly with stakeholders on environmental issues
BC Hydro	To achieve our purpose and longterm goals, BC Hydro is continuing to integrate financial, environmental, and social considerations (the triple bottom line) in how we plan and manage our business. This is included in our decision-making process across the company and at the board level. Building on our experience in Water Use Planning and Integrated Electricity Planning, employees from across the company developed a framework and tools to help ensure more consistent and effective triple bottom line decision-making, whether it involves purchasing office supplies, disposing of waste, extending power lines, or deciding how best to achieve energy conservation. Introductory and advanced training courses were developed and delivered to approximately 200 employees over the past year. While the initial focus was to ensure that environmental and social factors are consistently integrated in decision-making, the triple bottom line framework and tools will enable a better and more consistent approach to decision-making overall.
BC Hydro	External long-term costs of environmental and social impacts need to be factored into decision-making today to ensure the right business decisions are made for the long term.
Export Development Canada	We continue to engage in a dialogue with stakeholders to better understand their concerns and to explain our business operations and decision-making processes.
Goldcorp	Program objectives: <ol style="list-style-type: none"> 1- to assist managers to manage Goldcorp like a 'business' – thereby supporting our 'Grow Margins' strategy; 2- to develop and improve managers' financial literacy; 3- to give managers the tools and concepts they need to handle the financial aspects of their business; 4- to promote better decision-making and better communication of the financial aspects of decisions, especially as they relate to capital budgeting;
Investissement	The members of the Board have mandated the Sustainable Development

Quebec	Committee to draw up a socially-responsible financing policy by late 2008 according to the guidelines provided in 2007. This policy will enable Investissement Québec to incorporate sustainable development principles in its decision-making and to define its commitment in this respect. It will also set out the principles the Corporation endorses and intends to uphold. Investissement Québec will finalize its socially-responsible financing policy during the next fiscal year. This policy should allow it to reduce the environmental risk associated with its financing activities and could enable its clients to benefit from sustainable development.
Nortel	Nortel's human right policy "takes a risk-based, "rights aware" approach to decision making and includes an assessment process to demonstrate compliance."
Ontario Power Generation	OPG Integrate Environment in Decision-Making: Integrate environmental factors and stakeholder considerations into our planning, decision-making and business practices.
Petro-Canada	Staudt further explains, "The Principles help Petro-Canada to provide a visual indicator of what we already do. We want them to be integrated in the thought and the decision-making process of employees who deal with water-related issues every day. It's almost like our safety mindset at Petro-Canada. We're working so that, around the Company, there is a common goal to minimize water use, as much as practical." Having the Principles integrated into business decision-making has already helped Petro-Canada experience successes on the water front.
Petro-Canada	We also perform Life-Cycle Value Assessments (LCVA) to integrate and balance environmental, social and economic aspects, thereby supporting holistic decision-making for our projects.
Royal Bank of Canada	While all companies must take responsibility for the environmental impact of their direct operations and purchasing activities, financial institutions are also expected to assess the environmental impact of the activities of the clients to whom we provide credit. RBC integrates environmental aspects into lending and investment decision-making criteria RBC also maintains sector-specific Criteria Papers, which provide our credit risk specialists a consistent, transparent decision-making tool for assigning a risk rating to a borrower. Environmental risks are included in these Criteria Papers to varying degrees depending on the environmental aspects of that sector. We consult with internal environmental specialists when necessary to determine if environmental risks are significant to a borrower's risk rating.
Talisman	It is because of this spirit and dedication that I think our 2007 Corporate Responsibility Report is so appropriately titled. "Going Further" is about building on our foundation and further integrating our corporate responsibility commitments into our decision-making and day-to-day activities, ultimately resulting in more profitable and sustainable operations around the world.
TD Financial Group	The case for diversity is well-established: stronger stakeholder relationships, better decision-making and exploring every available talent pool so we have the very best people
Teck Cominco	A carbon scenario planning session organized to evaluate future business decision making in a carbon-constrained world was conducted with board members, senior executives, managers, and external climate change experts.
Teck Cominco	Recommendations emerging in April 2007 highlighted key issues, including: accountability lines and implementation of company standards; internal and external communication plans; refining our understanding of our operating footprint; and incorporating carbon issues into decision-making models.

Telus	To support the execution of our CSR strategy in 2008, we have strengthened our CSR team and will make sustainability an important principle in our decision-making at TELUS.
Yamana	Transparency, responsibility, and integrated management are the principles guiding Yamana's strategic actions. Each one of our units has tactical and operational decision-making autonomy, giving due recognition to local leaderships and regional differences having a bearing on the overall corporate directives.

/Management –Audit

Canadian Natural Resources Limited	Our performance is measured through auditing systems and operations.
Enbridge	In late 2008, Enbridge expects to receive a report based on an independent third-party audit of our GHG emissions data management system for our Canadian operations. In 2007 and early 2008, the auditor completed a GHG Inventory Gap Analysis Report, in which Enbridge data is compared with a standard inventory management checklist, as outlined in the World Business Council for Sustainable Development's GHG Protocol.
Enbridge	In the U.S., we conducted 60 internal inspections in 2007, and external auditors conducted 40 inspections. These inspections were based on either environmental indicators or health and safety indicators
Gildan	We will enhance the way we process social and environmental audit data so that it focuses on impacts and root causes
Husky	As part of this process, an independent third party will audit Husky's historical greenhouse gas emissions and calculation methodology to ensure its emissions comply with domestic reporting and emission regulations..
Inmet	the biennial Safety and Health audit at the site helped management focus its action plan for improving safety performance
Jacques Whitford	Together with data from our carbon audit, the environmental audit data provides a baseline for tracking our company's performance with regard to these indicators over time
Manitoba Hydro	Once audit findings have been communicated to Hydro, work begins on investigating, correcting, and preventing non-conformances from reoccurring.
Methanex	The audit results highlighted key areas for improvement, prompting terminal operators to develop plans for better performance in health and safety, environmental protection, community awareness and emergency response. These improvements have further reduced business risks and have enhanced the terminals from a sustainability perspective
TD Financial Group	The audit will identify gaps and generate recommendations for TD to achieve green building certification
Woodbine	we will investigate and audit all injuries and incidents and use the knowledge to continuously improve/

Research and development

Alberta Pacific Forest	the calculation of research and development investments is based on the definition of research and development used by the federal government for tax purposes and does not include routine spending to improve existing products or procedures
Alcoa	Objective: Establishment of a partnership in research and development innovation.
BC Hydro	We continue to identify, monitor and evaluate new technologies for potential application within our lines of business and to drive the adoption of select technologies within the company. BC Hydro also continues to participate in research and development opportunities with Powertech and external organizations to explore innovative ways to manage issues, such as the life cycle of our assets, measuring and maintaining power quality, and technology initiatives such as those listed above.
Catalyst	Catalyst continued its partnership with the Pulp and Paper Centre at the University of British Columbia in 2007, through the Catalyst Grants Program. This involves \$60,000 commitments and in-kind support for each of three research projects (one of which was completed prior to 2007), which are also supported by the National Sciences and Engineering Research Council of Canada.
Enbridge	Enbridge's goals for advancing pipeline and system integrity are based on technological advances, as well as on understanding the science of how to find, mitigate, and prevent leaks or ruptures on our pipeline systems. To accomplish these goals, we are actively involved with industry research and standards organizations such as the Pipeline Research Council International, the Canadian Standards Association, the National Association of Corrosion Engineers and the American Petroleum Institute. We actively participate in industry forums and workshops aimed at communicating and sharing information on how to manage pipeline system integrity. For example, in 2007, we presented technical and research papers, participated on industry panels, and participated as workshop/session leaders at the Banff Pipeline Integrity Workshop and at the Pipeline and Hazardous Materials Safety Administration's R&D Forum.
Husky	Research and development is critical to sustaining Canada's economic growth. Husky has taken a leadership role sponsoring and investing in research in the health, agriculture, environment, and oil and gas sectors.
Imperial Oil	Other efforts are aimed at upgrading bitumen at much lower pressures and temperatures, thereby reducing energy requirements. Research to date has resulted in two patents, and research programs continue to expand.
Imperial Oil	Refining and Marketing (Downstream business) manufactures, distributes and markets petroleum products. This division operates refineries in Dartmouth, Nova Scotia; Sarnia and Nanticoke, Ontario; and in Strathcona County, near Edmonton, Alberta. These refineries convert crude oil into more than 700 petroleum products to meet consumer demand. These products are created with the support of world-class research and development facilities.
Syncrude	Science and technology provide the keys to unlocking the potential of the oil sands resource
Talisman	Talisman's strategic approach to climate change consists in investing in research and development in emissions management technology
Teck Cominco	Teck Cominco's short-term efforts will focus on "investing in research and development of low-carbon technology for mining and smelting, as well as carbon capture and storage opportunities"

Telus	TELUS invested \$85 million in research and development in 2007, compared with \$130 million in 2006. A significant part of our 2006 investment went into the development of our new integrated wireline billing and customer care platform
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Supply chain

Aviva Canada	Aviva North American Region is committed to building supplier relationships and promoting responsible supplier management. Environmental and ethical best practices on the part of suppliers are taken into account when making supplier selections.
Bell Inc.	We've been active in identifying green-friendly suppliers for many years through our environmental questionnaire. All new suppliers are asked to complete the questionnaire prior to contract negotiations. We are expanding our assessment of suppliers to encompass broader corporate responsibility issues and have developed a supplier Code of Conduct.
Canada Post	we are focused on two key strategies to reduce fuel consumption and cut CO ₂ emissions in the near term. The first is to purchase vehicles suitable for our delivery operations that have smaller engines and are more fuel efficient. These vehicles are scheduled to replace our larger, less efficient, step vans between 2010 and 2015
Catalyst	Catalyst has developed a detailed Sustainable Supply Chain Management Questionnaire for suppliers outside of North America; it addresses factors including human rights, freedom of association, and forced and child labour
CIBC	CIBC is committed to purchasing products and services from environmentally conscious suppliers. We formalized environmental requirements for our supply chain last year through the release of our Environmentally Responsible Procurement Standard. This Standard describes CIBC's requirements for inclusion of environmental considerations in its procurement activities, applicable for all products, as well as all services which may have adverse environmental impacts. The Standard's environmental evaluation form used at the outset of a supplier relationship includes reporting criteria related to suppliers' environmental management systems as well as product-specific questions on areas including energy efficiency, efficient use of natural resources, recycling options, product take-back options, and conditions to promote ecologically sustainable forest practices.
Conoco Philips Canada	We wanted to share the benefits of our operations with northern people through employment, education, training and the local purchase of goods and services.
Diavik Diamond	we will take all reasonable steps, acting in good faith, to work towards ensuring at least 66 per cent northern employment and at least 40 per cent Aboriginal employment during operations; for purchase of goods and services, the objective is at least 70 per cent northern.
Domtar	Domtar's supply chain also supports our sustainability objectives. Our broad geographic footprint places us within a one-day truck drive from all of our major markets. This means not only better customer service and lower transportation costs, but also reductions in fuel consumption and emissions, as well as more optimal use of our fleet and drivers.
Export Development Canada	As part of its current Corporate Plan, EDC is committed to the measurement and reduction of its impact on the environment. In addition to a formal waste audit at headquarters, key activities in 2008 will include a continued commitment to the purchase of energy efficient office machinery, devices and hardware, and the launch of a corporate-wide employee challenge focused on reducing EDC's operational footprint.
Gildan	Our commitment to integrate environmental requirements in our supply chain is an ongoing initiative. New raw materials, products, or capital projects are subject to an environmental impact study and evaluated based on the principles of our environmental code of practice.

Imperial Oil	In addition to undergoing a financial evaluation, proposals from suppliers are assessed against requirements for technical and safety performance. In each case, a preference is given to companies with a strong commitment and record for workplace safety
Loblaw	2007 Achievements : purchase of \$750 million of local produce
TD Financial Group	As a large purchaser of products and services, having good relationships with our suppliers is critical to achieving the goal of seamless business operations. We have a Strategic Sourcing Group (SSG) that is responsible for the overall supplier selection process and provides support and expertise to all of TD for its sourcing initiatives. SSG uses a disciplined supplier selection process and assists with evaluating, negotiating and structuring supplier arrangements. The process includes a consideration of the financial viability of competing suppliers and suppliers are screened against a number of criteria.
Wal-Mart	Wal-Mart Canada is using new criteria to assess its suppliers and supply-chain partners on the basis of their environmental efforts, impact and improvement. The business case is clear: operating sustainably is not only the right thing to do, it is the most cost-effective way to do business.

Education and training

Kinross Gold	Also measure leading indicators of performance, such as internal inspections, environmental training of employees, and additional water and air sampling over and above permit requirements. [...] These leading indicators provide us with a proactive look at the management programs in place that will prevent releases, permit excursions and enforcement actions.
Toronto Hydro	A key aspect of the training process was a discussion about indicators. The indicator framework was explained, including domain, issue, Goal, Hybrid (Goal/issue) and Casual models

Communication and benchmarking

BC Hydro	Measures are results-based to provide a more accurate evaluation on our performance. We also participate in benchmarking studies to determine where improvement may be required
Canadian Natural Resources Limited	We compare our safety benchmarking results with other industry top performers to ensure our performance is solid and improving
Canadian Natural Resources Limited	In our North American conventional operations, the number of pipeline leaks per 1,000 km of pipeline has decreased since 2003, and, from the latest peer data (2006), our results are significantly better than the peer benchmark average. This success is largely due to our pipeline corrosion testing and integrity program.
Goldcorp	Sustainability reports based on the GRI Framework can be used to benchmark organizational performance with respect to laws, norms, codes, performance standards and voluntary initiatives; demonstrate organizational commitment to sustainable development; and compare organizational performance over time.
KPMG	learning performance as an organization against the Conference Board of Canada's Learning Performance Index regarding learning vision, culture, dynamics, and infrastructure / investment
Loblaw	Although this report does not report against the GRI, it was used as a benchmark and we will consider reporting against it in the future.
Nestlé Canada	Tracking environmental performance indicators gives Nestlé Canada a benchmark on current environmental performance, and charts our course for further improvements in managing future sustainability.
Nexen	In 2007, Nexen invested approximately \$2,700 per learner, a level that is more than double the average U.S. benchmark for staff training.
The Bank of Nova Scotia	A recent survey reported an employee satisfaction index rating of 75 per cent, and this benchmark will help us target continued improvements and measure our progress in the years ahead
Wal-Mart	We know we must be judged not just by what we say but also by what we do. This requires the kind of metrics you'll find in our report – the key performance indicators we will use to measure and show our CSR commitments and improvements. And, though they may be refined or expanded over time, we offer these metrics as the benchmark by which we can be judged.

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