



# **An evaluation system on corporate sustainability, theory and application in China**

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## **ABSTRACT**

This dissertation examines the development of the corporate sustainability evaluation system as a tool to implement the concept of sustainability management into business operations in China. The research focuses upon the theory construction and evolution, the application as a management tool, and the response to problems in corporate sustainability. The thesis presents a series of case studies that outline differing approaches to implement it during the business operation. It also presents the evaluation system enable corporation and related stakeholders group to improve corporate management towards sustainable development.

Corporations are part of our increasingly complex and global system, drawing on and impacting on that system. Sustainable development poses a challenge to the traditional mindset of business operation. Increasingly the corporate performance is judged not just by the services, products and profits they make but also by the impacts they have on human and social well-being and on the natural environment on which we all depend for life. This thesis develops a special system to evaluate corporate sustainability and its impact to social and environment.

In a quest for improved corporate sustainability performance, many organizations have developed numerous methods to monitor and measure its process. Unfortunately, many of these methods appear to be neither applicable nor able to promote effective decision-making. As a potential remedy, a theoretical framework was developed in this thesis using principles of integrated system to create a performance measurement system for corporations in China.

On the basis of literature reviews and theoretical analysis, this thesis constructs a framework to identify key factors in sustainability, redefined procedure towards sustainable business. The discussion also argues that sustainability evaluation will change the way that companies perform, their day-to-day operations and improve corporate productivity through combining the agenda of sustainable development with corporate interests. The thesis also developed a practice oriented business management tool, through experiment by internal and external approaches in various corporations in China with considering all factors affected business operations and managing all factors in holistic way.

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## CHAPTER 1. Introduction

*Most of today's decision makers will be dead  
before the planet suffer the full consequences of  
acid rain, global warming, ozone depletion,  
widespread desertification, and species loss.  
Most of today's young voters will be alive.*

-----“Our Common Future”

The above sentence quoted from back cover of the book “our common future” is a hint, because these words not only stimulated me to write this thesis, but also lead this thesis’s objective, which is the development of a framework and system to integrate sustainability issues into decision making.

### 1.1 Sustainable development is becoming a focal point

The concept of sustainable development (SD) has emerged as a key guiding principle and action agenda for all forms of environmental management, economic development, and social justice at international, regional, national and local levels. The ‘triple bottom line’ has revolutionised the way we see and interact with the world and each other, and attempted to set a course for an increasingly innovative future based on conservation and protection, wise resource use, social equity, economic growth and stability.

During the last decade, sustainable development has evolved from a concept to a key principle embraced by a number of corporations. The World Commission on Environment and Development introduced the concept of SD in 1987, and offered the following definition:

*meets the needs of the present without compromising the ability of future generations to meet their own needs.*<sup>1</sup>

This definition suggests a vision of business enterprises that considers the balance of needs between present and future generations. Since then, SD has been interpreted to cover virtually all aspects of corporate approaches to economic development, environmental protection and social responsibility.

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<sup>1</sup> WCED (1987), “Our common future” Oxford University Press

Companies have adopted a variety of phrasings, including terms such as corporate responsibility, sustainable growth, and global corporate citizenship, to capture the essence of their own journeys towards achieving Sustainability. SD is increasingly seen as a logical outgrowth of evolving industry practices, including environmental stewardship, pollution prevention, waste minimization, and design for environment methods, which seek to replace “end-of-pipe” pollution control with more cost-effective process improvements.

However, there are two important differences that distinguish SD from historical environmental management practices:

- Introduction of the socio-economic dimension, focusing upon the beneficial or adverse impacts of corporate practices upon societal well-being.
- Recognition of the linkages between SD and competitive advantage in the marketplace, which elevates these issues to a strategic level.

Faced with rising stakeholder concerns, the business community has recognized that long-term success depends not only on financial performance, but also on social and environmental performance. Today, we can define a “sustainable business” as one that is able to anticipate and meet the needs of present and future generations of customers and stakeholders. Sustainable businesses generally distinguish three dimensions of needs, known as the “triple bottom line”:<sup>2</sup>

- Economic prosperity and continuity for the business and its stakeholders
- Social well-being and equity for both employees and affected communities
- Environmental protection and resource conservation, both local and global.

From this perspective, SD is not just a political topic, rather, it is an enlightened response to emerging market forces. Instead of merely listening to the voice of the individual customer, companies are beginning to listen to the collective voice of the larger customer namely civil society. Public awareness of the impact that companies can have on society and the environment gives rise to an expectation that companies will do business in a socially and environmentally responsible manner.

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<sup>2</sup> Elkington, J., (1997) “Cannibals with Forks: The Triple Bottom Line o 21<sup>st</sup> Century Business”, Capstone, Oxford.

This circumstance creates opportunities for companies who can address these changing stakeholder expectations with new technologies, products, and services, thereby gaining competitive advantage. There are several underlying factors that help to explain the blossoming of business interest in SD. These include:

- Growing evidence that companies can create shareholder value by moving beyond passive compliance and adopting eco-efficient design and production methods, resulting in improved operating efficiency and market positioning.
- Increasing acceptance among top executives of the ethical obligations associated with “corporate citizenship,” and resulting attention toward constructive engagement and dialogue with external stakeholders.
- Competitive pressures as more companies, especially historically well managed and progressive companies, adopt SD strategies, openly report on progress, and require improved performance by suppliers.
- Emergence of doctrines such as “extended producer responsibility” which broaden the boundaries of corporate accountability and raise public expectations regarding company principles and operating practices.
- Explosive growth of electronic communication, creating global accountability and transparency for companies that do business in developing countries.
- Investigation by segments of the financial community of the concept that companies managed for sustainable growth tend to generate superior economic returns, leading to the rise of pooled investment vehicles and “socially-responsible” investing.

Many leading multinational corporations in a variety of different industries have set up some sustainability programs. The common purpose of these programs was to shift the company operations from a traditional, resource-intensive, and volume-maximizing business model to a more eco-efficient, socially responsible, and value-maximizing model. This shift aligns with the financial goal of increasing shareholder value by raising profits while reducing the use of capital and resources, which is doing more with less. Nevertheless, there is still a debate whether this approach that integrated SD into its business strategy can achieve business objectives and how to evaluate this improvements and demonstrate the efforts that contributed to the business success. (WBCSD 2006)



## **1.2 Chinese economic growth demands corporate sustainability**

China is one of the most rapidly changing countries in today's global economy. China has made remarkable progress in sustaining high economic growth rates, raising incomes and lengthening life expectancy. However, the pattern of economic growth, rapid industrialization and urbanization has not been environmentally and socially sustainable. The impact of this development finally influenced will be crucial for the future not just of the economic development in China, but also globally. There are several reasons that are of particular importance to support the idea that corporations should lead the role to create sustainable value in China.

### **1.2.1 Booming economy leads to change on growth pattern**

In 2005, national GDP stood at 18.232 trillion Yuan and GDP per capita at 13,946 Yuan. In 2005, China's GDP was the fourth largest in the world. It is easily forgotten that China was the world's largest economy throughout much of recorded history, and as recently as the mid-19th century. The indications are that this will again be the case within a few decades.

China is now the world's third-largest trading nation, behind only the United States and Germany. The total value of imports and exports in 2004 reached 1,154.7 billion US dollars, up 35.7% over the previous year. The value of export was 593.4 billion US dollars, up 35.4%, and the value of imports was 561.4 billion US dollars, up 36%. As a result, China had a trade surplus of 32 billion US dollars, or 6.5 billion US dollars more than in 2003. During 2004, Shanghai was reported to have overtaken Rotterdam as the world's leading port in cargo throughput, handling 382 million metric tons.

China is also the largest recipient of foreign direct investment (FDI) reached 53.5 billion US dollars in 2003. This growth continued during 2004 totalling 60.6 billion US dollars, a 13.3% increase over the previous year. A rapidly developing economy is also giving birth to a host of new players with innovative ideas for the future. The business sector is one area where a host of new players are emerging. Fourteen mainland Chinese companies were among the 2004 Global 500 companies listed by Fortune.

But at the same time, environment and natural resource is becoming a bottle-neck for further sustainable growth. The International Energy Agency (IEA) estimates that carbon emissions

in China will exceed those of the United States by 2020 since, if it follows a traditional path, China's energy consumption will more than double in 20 years. This is mainly the result of coal burning and rapid motorization.

About 77% of Chinese energy is provided by coal. Even if that fell to 67% in 2020, China would still burn twice as much coal as it does today<sup>3</sup>. Coal-use worldwide is projected to increase by 2.3 billion short tons between 2001 and 2025, in the developing world, larger increases in coal use are projected for China and India, where coal supplies are plentiful. Together, China and India account for 85% of the projected rise in coal use in the developing world and 70% of the total world increment in coal demand over the forecast period.<sup>4</sup>

Turning to the transport sector, we can see that "China expects to have 140 million automobiles plying its roads by 2020, seven times more than now, fuelling demand for transportation infrastructure and services<sup>5</sup> .... Li Xinghua, deputy director of the Communication Ministry's Comprehensive Planning Department, predicted that China's auto population would eventually reach around 250 million, or about 150 cars per 1,000 people."<sup>6</sup> Such growth by 2020 would make China's auto fleet larger than the US today. If automobile ownership in China were to reach the US level of 0.77 cars per person (three cars for every four people), China would have a fleet of 1.1 billion cars in 2031. This is more than all the 795 million cars on the planet now.<sup>7</sup>

All these changes have driven the ideas on sustainability emerging in China, particular in the business sectors. The increasingly central role of Chinese companies raises the question of how company can sustain their growth. With increasingly global sustainability initiatives are now strongly affecting business leaders in China. Demand for changing the pattern of business growth will be a top agenda issues within business community.

### 1.2.2 Physical reasons

Up to the middle of the 20th Century, industry and trade were able to grow as if there were no natural constraints. This was possible because the global consequences of these activities on the planet were quite limited, or even negligible. The magnitude of the pollution and use

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<sup>3</sup> <http://www.climateark.org/articles/2000/4th/chsetto.htm>

<sup>4</sup> <http://www.eia.doe.gov/oiaf/ieo/world.html>

<sup>5</sup> [http://www.chinadaily.com.cn/english/doc/2004-09/04/content\\_371641.htm](http://www.chinadaily.com.cn/english/doc/2004-09/04/content_371641.htm)

<sup>6</sup> [http://www.greencarcongress.com/2004/09/china\\_140\\_milli.html](http://www.greencarcongress.com/2004/09/china_140_milli.html)

<sup>7</sup> Earth Policy News - Learning From China, Eco-Economy Update 2005-2, March 9, 2005

of natural resources derived from industry and trade was not sufficient to represent a threat to the biosphere.

In the last few decades, the physical limits of our planet, both as a provider of resources and as a sink for waste disposal, have been well established in theories, studies or concepts such as ecosystems biodiversity (Constanza et al, 92; Gladwin, 93; Hawken, 93), carrying capacity (Daly and Cobb, 89), the limits to growth (Meadows et al., 72; Meadows et al, 92) or ecological footprint (Wackernagel and Rees, 96). According to a systems approach to strategy, companies must broaden the environment that they take into account, including our natural environment.

The recent development of environmental management system, which ratified as ISO 14000 (see table1.1) in China indicates that many Chinese companies, particularly from manufacturing, have great incentive to implement environmental management system. Although the main driving force for them to certify ISO14000 is to promote their sales overseas. On the other hand, this is an explicit trend towards corporate sustainability.

**Table 1.1 Number of ISO 14001 certifications**

Area	1997	1998	1999	2000	2001	2002
Mainland, China	22	94	222	510	1085	2803
Hong Kong, China	46	56	51	105	165	208
Macau, China	--	--	1	1	1	70
Chinese Taipei	183	203	216	421	999	1024

(Source: The ISO survey of ISO9000 and ISO 14001 Certificates, ISO 2004)

### 1.2.3 Social reasons

In the past, the social role of corporations was practically limited to creating employment, paying taxes and operating within legal limits. And indeed, for a lot of Chinese companies, this is still the case. This was possible when firms' playing fields were clearly delimited and society, while entrusting the satisfaction of others' needs to governments and other institutions, did not expect much more from businesses than fair conduct as the providers of employment and products. At the beginning stage of Chinese reform, Chinese government

even encouraged to separate this “social responsibility” as state owned enterprises have a huge burden that undertake many roles of society in planning economy.

Nowadays, society’s expectations have changed. One of the primary reasons behind this change is the globalization process. This process has transferred power from society to businesses, and society is demanding a parallel increase in their social responsibilities. Also, more educated and well informed citizens tend to be more sophisticated and, as a result, more demanding with firms. More and more Chinese citizens are increasingly demanding that corporations play a more active social role and take this into consideration in their purchase or investment decisions. In any event, social pressures can be powerful enough to turn demands into laws.

Recently, there are also many initiatives intended to bring companies together with international organizations and civil society to contribute to sustainable development. While a small but growing number of multinational companies are addressing sustainability in their global operations, it is interesting to note here that only few have implemented programs in China, in spite of the fact that the country is one of the largest recipients of foreign direct investment (FDI) and one of the biggest energy consumption countries. For example, the United Nations (UN) Secretary-General proposed the Global Compact in 1999 at World Economic Forum, to join this voluntary initiative, companies are required to support 10 principles in the areas of human rights, labour, corruption, and the environment. By September 2005, fifty two Chinese companies had signed on.

Another international reporting system is called Global Reporting Initiative (GRI). This is an innovative effort to harmonize the environmental and social accountability and reporting practices of many organizations and to elevate these to the same level of acceptance now accorded financial reporting. As an autonomous organization, GRI encourages all companies to measure and report consistent and timely information that will assist analysts, investors, and other stakeholders in comparing corporate performance within a given sector. More than 700 corporations—many of whom operate in Asia and the Pacific—now have adopted the GRI Sustainability Reporting Guidelines.

#### 1.2.4 Ethical reasons

Companies are systems the structure of which is fundamentally based on people and the relationships between them. From an ethical point of view, to be members of a company or

any kind of organization should contribute to people's overall betterment as individuals. And it is obvious that this is not possible if they have to abandon their personal values when at work. Therefore, if as citizens people are demanding an increase in companies' social obligations, they should be allowed to behave accordingly as employees. In short, the enlargement of firms' environments to include nature and society involves an increase in their ethical obligations.

Another important consideration from an ethical point of view is that the whole global economic system is based on the fundamental right for every human being to enjoy equal opportunities to run his or her life. However, a very ironical fact is (UN Human Development Report, 2001), one out of five human beings has to survive with under 1 dollar a day and has no access to potable water; more than fifty per cent of the developing world lacks the most basic sanitation; one out of every six children receives no schooling; differences between rich and poor countries keep growing; per capita income in fifty countries is lower now than ten years ago; dozens of countries suffer endemic armed conflicts; democracy and respect for human rights are still the exception. Since the fundamental right to equal opportunities is still a wish, firms must help to make it come true.

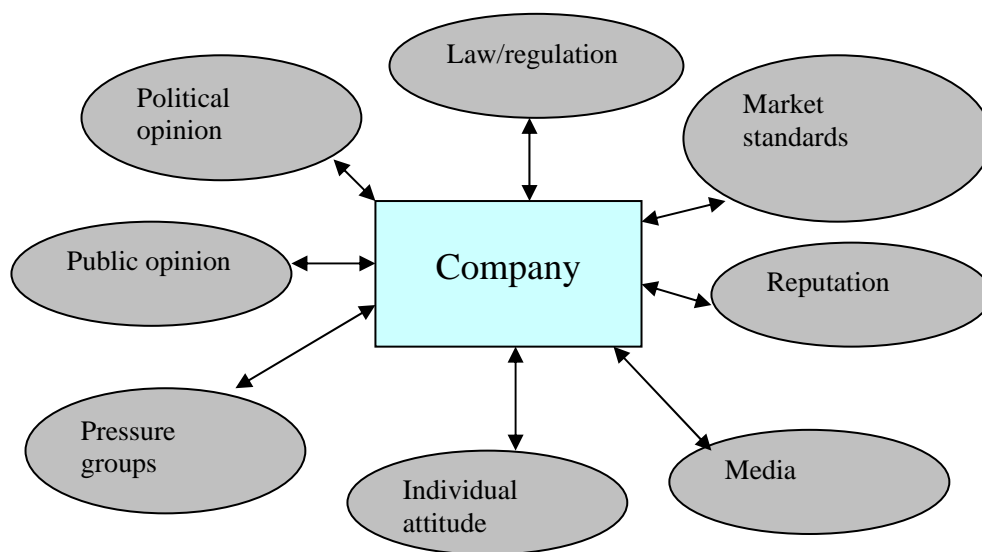
For example, with the huge amount of textile products pumped into the Europe market, analysts expect to see a significant amount of manufacturing move to China, resulting in improved labour standard and related human rights issues. Thus, given their increasing resources, extensive supply chains and outreach into the country, multinationals corporations and international buyer in global supply chain are positioned to significantly contribute in sustainable development in China.

#### 1.2.5 Business reasons

Business reasons are a result of physical, social and ethical reasons. If we consider the three statements above representing an instrumental approach, we can easily agree on their business reason. However, business reasons are not purely instrumental. If companies act correctly only because it pays off, it does not work. People and society look for coherence. And this is only possible when firms' conduct is the result of profound beliefs and shared values among all their members. Therefore, business reasons are explicit. It is a perfect integration of the normative and instrumental approaches. This positive action will definitely affect the sustainability of firms' competitive advantages.

The need to address the corporate sustainability is becoming an important issue for entrepreneur in China. The manner in which a company addresses the triple bottom line agenda can either enhance or undermine its reputation, brand equity, competitiveness, innovation, productivity, efficiency, risk profile, access to capital, licence to operate and ability to attract and retain talent as indicated in Figure 1.1. Thus, it can have a material impact on the company's long-term success and shareholder value. As a result, boards cannot afford to ignore the triple bottom line agenda.

**Figure 1.1 Licence to operate**



Source: the Centre for Tomorrow's Company

Business opportunities are likely to emerge along with the development of corporate environmental reporting and disclosure in China. As yet, there is still no widely accepted standard or guideline to inform companies how to do sustainability report themselves, although guidelines such as those by Global Reporting Initiative could be valuable if it can be introduced widely into businesses in China in the near future. Guidelines on the evaluation system and accounting for social and environmental costs are also necessary.

Not all of these external pressures will have equal impacts on the China's corporate sector nor will they all strike at the same time. However, when the cumulative effects of these changes on the business climate are considered, a picture begins to emerge of how

globalization and associated altered economic and social forces will fundamentally change the “rules of the game” for businesses in China. These trends all point to the same conclusion: the old ways of doing business are over.

### **1.3 Scope and objectives**

The scope of the thesis covers primarily two approaches on evaluation, internally by benchmarking and externally by stakeholder investigation. It will concentrate on the information capabilities that the system as a whole has to produce. The hypothesis is that – in spite of the different business environment and historical background of each company – it is possible to develop a methodology and general framework to evaluate and compare its sustainability status and improvement journey, which take economic, social, and environmental issues into consideration.

The objective of this research is to develop a sustainability evaluation system by objectively incorporating environmental and social issues into the decision-making process at different stages of business development. So the system can be applied to choose the best development option and be further enhanced to benchmark the corporate sustainable performance. Specifically, through using the evaluation system developed by this research will promote corporate sustainability in China.

The aims of the thesis are therefore:

1. To build the generic structures, processes and concepts that underlie evaluation systems and influence their effectiveness, suggest ways to improve the conventional evaluation methodology by literature review and theoretical analysis. What are corporate sustainability evaluation systems?
2. To develop practical approaches to measure and compare the performance of corporate sustainability in a context that includes aspects from such as economic, social, and environmental issues. Strategically assess the role of indicator systems across. Does this sustainability evaluation system (SES) improve decision making in terms of sustainability?

3. To investigate the application of evaluation systems within a variety of Chinese companies and Multi-national companies in China. How is the evaluation system applied in management?

#### **1.4 Purpose of sustainability evaluation system**

The sustainability evaluation system developed in this thesis is a practice oriented tool to measure corporate performance towards the goal of sustainable development. It can provide a balanced and reasonable representation of the sustainability performance of the reporting corporation - including both positive and negative contributions.

This system based on the GRI reporting framework and results that occurred within the evaluating period in the context of the organization's commitments, strategy, and management approach. Evaluation can be applied for the following purposes:

First of all, the evaluation system is intended to provide a **sustainability benchmarking tool** for its stakeholder group, flexible enough to deal with environmental and social shifts without requiring decision makers to regularly adopt new strategic paradigms. Benchmarking and assessing sustainability performance with respect to laws, norms, codes, performance standards, and voluntary initiatives. The intention is to break the confusing management circle of "from problem to solution" to "continual improvement circle".

Second, the sustainability evaluation is a **continuous improvement process** rather than a responsive compliance process. Demonstrating how the corporation influences and is influenced by sustainable development expectations. Compliance means it focuses on trying to satisfy required standards and then independently developing action plans for the firm to exploit its position. In contrast, management actively plots a new direction for the firm and considers how the firm can affect the environment as well as how the environment may affect the firm.

Third, the central concern of the sustainability evaluation system is the survival of the firm. To survive in a turbulent market environment, strategy maker must form a vision for the firm, to successfully form a vision, management must know those who can affect the firm and



understand how the firm will affect others (as in the long run they may make a reactive response). Therefore, understanding **stakeholder relationships** is, at least, a matter of achieving the company's objectives which is in turn a matter of survival. This evaluation approach provides decision maker a clear feedback from stakeholder engagement through evaluation from stakeholders themselves.

Fourth, the **stakeholder approach** in sustainability evaluation encourages company to develop implementing strategy by identifying all the relationships that will ensure long-term success. Diverse collections of stakeholders can cooperate over the long run. They share a set of core values. Thus, for corporation to be successful it must incorporate values as a key element of the sustainability evaluation. Good stakeholder engagement develops integrated business strategies that are viable for stakeholders over the long run.

Fifth, the **internal benchmarking approach** is both a prescriptive and descriptive approach, rather than purely empirical and descriptive. It calls for an approach to strategic management which integrates economic, social, and environmental analysis. Such an approach has implications for research in the discipline as well as practical results for comparing performance within organizations and between different organizations over time. The purpose of a Sustainability benchmarking is to actively plan a new direction for the firm. It builds on concrete facts and analysis, and thus is descriptive to recommend a direction for the firm.

Sixth, the Sustainability evaluation also provides **concrete activities** suggestion for the corporation rather than merely analyzing general corporate environmental or social performance. As such what is important is developing an understanding of the real, concrete stakeholders who are specific to the firm, and the circumstances in which it finds itself. It is only through this level of understanding that management can create options and strategies that have the support of all stakeholders. And it is only with this support that management can ensure the long-term survival of the firm. Good strategic management, according to this approach, emerges from the specific analysis rather than deriving from the general and theoretical approach.

Finally the sustainability evaluation calls for an **integrated approach** to corporate decision making. Rather than set a working plan separately, managers must find ways to satisfy

multiple criteria simultaneously. Successful strategies integrate the perspectives of all aspects rather than offsetting one against another. This approach does not suggest that, by delving into the details, management can turn all constraints and trade-offs into a series of win-win situations. Obviously, three aspects will not benefit to the corporate development at the same time, even with a detailed understanding of concrete relationships among three lines, most strategies will distribute both benefits and harms between different groups of stakeholders related to the issues. Win-win situations are not guaranteed. Indeed, it is just as important for management to develop strategies that distribute harms in a way that ensures the long-term support of all the stakeholders.

### 1.5 Structure of the thesis

This thesis begins with an introduction into background and research objectives. The problem identified and hypothesis applied in this thesis are also introduced at this chapter.

Chapter 2 gives a comprehensive literature review of sustainability evaluation, from sustainability evaluation's evolution, indicators for sustainability to its principles and initiatives by international organizations, it shows a completed picture and the existing theory in this research topic.

Chapter 3 contains the methodology applied in this research, which outlined the two methodology applied in this thesis: benchmarking as internal evaluation and stakeholder engagement as external evaluation method, it also analyze the sustainability and explore the reasons to improve the corporate sustainability. Within this chapter, sustainability performance indicators were defined through divided by four aspects, economic, environmental, social and management indicators, these operational criteria are compatible with the well-known reporting system (GRI) in order to report sustainability in global standards.

Chapter 4 builds an internal benchmarking framework for sustainability evaluation, it includes the key elements and phases in evaluations, and it also presents the framework for the quantification and integration of indicators for theoretical analyses. It introduces the organizational level of implementation to improve corporate sustainability, through this introduction, the basic indicators are more clearly in the process of evaluation.

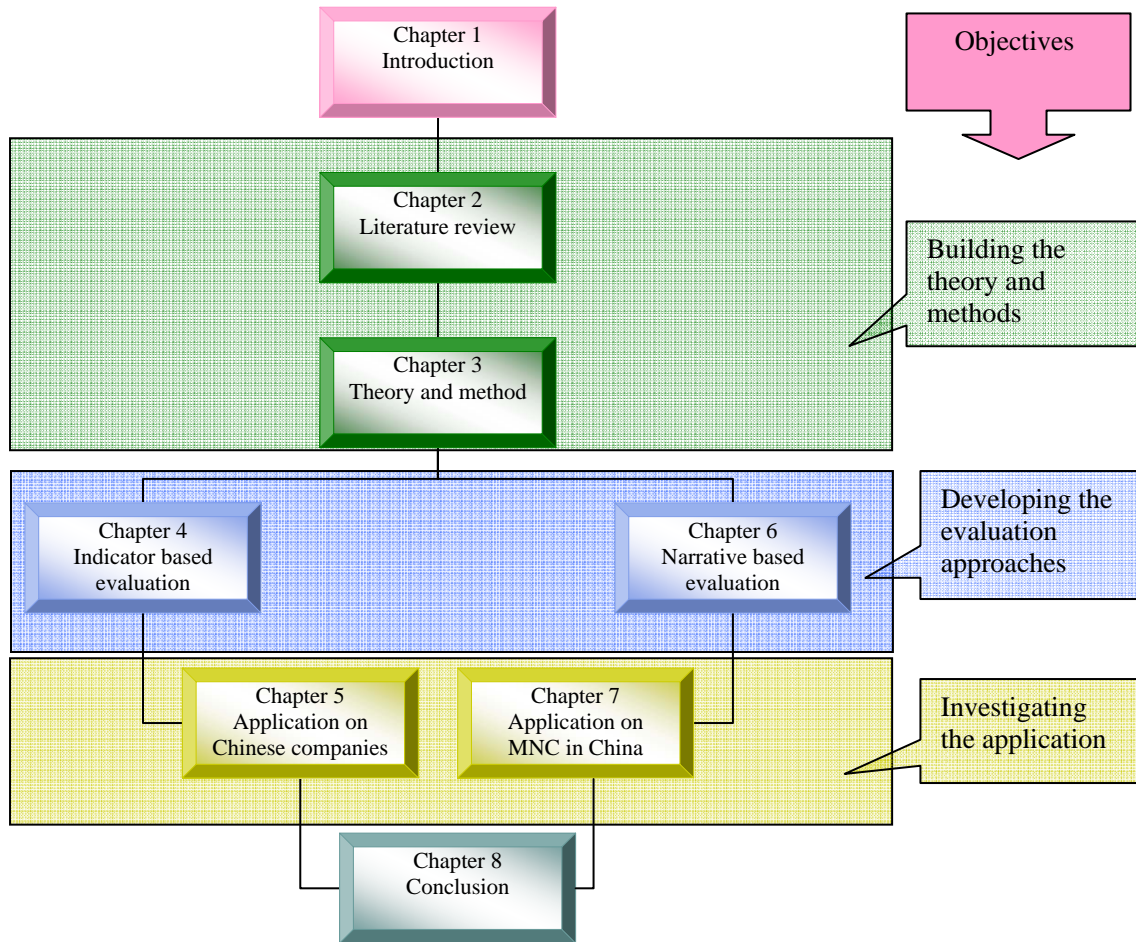
Chapter 5 presents the application of the framework developed in Chapter 4 to the case studies in Chinese companies through identification of stakeholders and the derivation of indicators. It introduces the way to implement indicator system as an integrated tool for evaluating sustainability using multiple criteria that based on the sustainability indicators developed in Chapter 3. This chapter presents and discusses the two questions in a project and use survey analysis to show how to use evaluation tool to research and promote sustainable business in China.

Chapter 6 develops a narrative based evaluation method by stakeholder investigation. It brief introduces the importance of stakeholder engagement in sustainability evaluation, and then gives a theoretical review and analysis. The research design, the measures of constructs and data analysis are described. It also outlines the research design more specific, focusing on the roles of the government and NGO in evaluation of corporate sustainability.

Chapter 7 presents the case study of sustainability evaluation by stakeholder engagement. This empirical result aims at presenting the application benefits of this evaluation instrument, one case as an example is carried out to show the process of stakeholder investigation and different opinions on corporate sustainability evaluation through internal and external stakeholders' interview. Finally, the conclusion summarizes the benefits from this evaluation approach.

Chapter 8 discusses and concludes this thesis from analyses the research findings and case studies as showing in figure 1.2, and reviews the research aims which are: to build theoretical structure in corporate sustainability evaluation; to implement a framework to effectively consult company to improve the corporate management and performance; to discuss the application and future research on sustainability evaluation and recommendation to further study based on this research findings. It also shows the role of different sector on promoting business sustainable development.

**Figure 1.2 Structure of the thesis**



## **CHAPTER 2. Literature review**

Increasingly, corporations are using the term 'sustainability' to clarify how value is created for firms, as well as for their stakeholders, in economic, social and environmental terms. This more inclusive approach is based on the premise that corporate performance should be assessed against a 'triple bottom line' of economic development, environmental quality and social justice or equity (Elkington, 1997). The indicators developed in this research are based on triple bottom line theory.

Although a number of business leaders and management theorists have sought to place environmental or sustainable development considerations in a strategic business context. Research shows that the inclusion of sustainability issues in corporate mission and values statements - particularly in larger companies - is becoming considerable confusion and there is a parallel increase in measuring, reporting and communicating on such issues in real time (Wheeler and Elkington, 2000). The aim of this chapter is to review these measurement theories as conceptual basis for the further application.

Companies are increasingly learning their way into sustainability issues whether it be the rapid growth of ethical finance, the increasing interest of consumers in certified sustainable products and services, or the downward (and occasionally lateral or upward) pressure on supply chain partners to demonstrate environmental and social responsibility (Elkington, 1998; Beloe, 2000). Finally, the magnitude of sustainability issues, such as global climate change, population growth, and economic globalization, means that corporations which are not ready for major instability in marketplaces and political regimes may see their competitive advantage eroded and their business success threatened (Hart and Milstein, 1999). The purpose of this chapter is to review the previous research results on the key elements of this research on sustainability evaluation.

### **2.1 Concepts of corporate sustainability**

The WCED (1987) used sustainable development as an overall goal for decision making without explicitly spelling out its exact implications. In order to guide change towards sustainable development within a specific sector, however, the overall goal needs to be operationalised (Rennings and Wiggering 1997). Hence, it is not surprising that earlier

studies of sustainable development mainly aimed at defining the concept (Stern 1997) and, therefore, contained a large number of definitions, which were compared (Pezzey 1992). Consequently, they are referred to as definitional studies, with the explicit or implicit objective of reaching a consensual definition of sustainable development (Dobson 1996).

Definitional studies relate differently to sustainable development, for instance, Hansen (1996) pointed out that sustainability was used in several different ways as an ideology, a set of strategies, the ability to fulfil a set of goals, and the ability of a system to sustain. The two former uses were labelled goal-describing, that is, they were rooted in concerns about the negative impacts of current practices and used in this way, and sustainability motivates alternative practises. The latter two are referred to as system-describing, underlining the system's ability to respond to changes in physical, social and economic environments. Hansen (1996) argued that a framework for assessment of sustainable development should be literal, system-oriented, predictive, stochastic, diagnostic and quantitative.

Upham (2000) suggested a distinction between sustainability principles that mainly referred to an end-state or a transition. Principles referring to an end-state or ultimate goal are, for instance, substances produced by society cannot be permitted to systematically accumulate in the ecosphere (Azar et al. 1996). An example of a transition principle is that the harvest rate of renewable resources should not exceed their rate of renewal (Goodland and Daly 1996).

Furthermore, Upham (2000) pointed out that definitions of sustainable development inherently involve value judgements creating “a need to make these judgements explicit, particularly regarding environmental and other features to be sustained, and those to be lost to development” (Upham 2000, p. 188). Hence, any evaluation of sustainable development needs to explicitly spell out these judgments.

Dobson (1996) introduced a distinction between discursive and definitional approaches to sustainable development. Discursive studies stress the chronological or process perspective of the sustainable development concept whereas definitional studies focus on what sustainable development implies in a specific application. However, Dobson argued that neither definitional nor discursive approaches in the literature on sustainable development were sufficient to capture its broad contours. Therefore, he suggested a typological approach, claimed to capture the essence of discursive as well as definitional studies. The typological

approach does not aim at finding one definition of sustainable development but, rather, to reflect the spectrum of definitions in a structured manner in order to systematise its basic elements.

The positions of the prospects of and desirability of reaching a single undisputed definition of sustainable development differ. Some researchers stressed the inherent subjectivity in sustainable development as a goal for policy (Norgaard 1996) because it involves questions about what is a good life (Giddings et al. 2002) and, thus, the frameworks need to be able to reflect this subjectivity. Consequently, Giddings et al. (2002) argued that there was no common philosophy of sustainable development. Instead people and organisations incorporate existing worldviews in their understanding of sustainable development.

Thus “When examining an interpretation of sustainable development it is important to bear in mind the philosophy underlying the proponent’s point of view” (Giddings et al. 2002, p. 188). Norgaard (1996) and Morse et al. (2001) stressed that any sustainable development definition risks being biased towards a dominating perspective. As a policy goal, sustainable development inherently touches upon unresolved questions such as sustainable for how long, at what level, for whom, under what conditions and of what (Luke 1995, Dobson 1996).

The need to address the dimensions of sustainable development in an integrated manner was also noted by Linner (2003), who argued that the framing of sustainable development as a global policy goal should be reflected in evaluations at any level. Further, he noted that the present trend towards prefix- and suffix sustainability reflects a fragmentation in implementation, which should be replaced by more integrated evaluations of sustainable development.

Historically, competitive advantage was thought to be the product of economic factors such as price, quality, and service. However, when products become commodities, economic factors become more or less equal across competitors and price, quality and service are no longer the differentiators or drivers of advantage. Advantage is more likely to accrue from the leveraging of intangible assets such as brand awareness, which encompasses both emotional and cognitive characteristics like product quality perceptions, lifestyle associations, or perceived environmental or social responsibility of the firm and its products.

Thus, the ability to engage stakeholders positively is a vital organizational capability in today’s information based economy. Its importance seems to be related to the fact that these

relationships enable the flow and use of other resources like financial capital, intellectual capital, and human capital. Stakeholders act as gatekeepers to resources that firms need. For example, customers decide whether or not to give the company money, communities decide whether or not to let a company occupy a location in their area, and employees decide whether or not to share their innovative ideas with their employer or defect to a competitor.

Likewise, poor stakeholder relationships make stakeholder controlled resources less accessible. Depicting resources as only accessible through stakeholders might be overstating the case. However, if employees are stakeholders, then even resources that the company owns cannot be accessed without the cooperation of those stakeholders. At the very least, stakeholders can increase or decrease the cost and speed of access to resources. In that sense, it is not an overstatement to call them gatekeepers of resources.

In fact, different industries will derive different business benefits from stakeholder relationships. For example, companies involved in natural resource extraction have significant impacts on the environment and therefore must work especially hard at maintaining their social license to operate. They must pay more attention to their relationships with environmental organizations and relevant government regulators.

High tech companies have different preoccupations and must ensure access to highly trained and motivated workers. Thus technology companies place less emphasis on relationships with communities compared with natural resource companies. Biotechnology firms working on genetically modified food may be concerned with multiple stakeholder relationships - with employees, consumers, and NGOs, as they need to protect their access to social license to operate as well as to ensure the creativity and motivation of highly trained employees.

The stage of development of a business can also affect the business value of various stakeholder relationships. Starts up companies with no revenue depend on their initial investors for money, advice, contacts, and encouragement. Established high tech companies may find that relationships with business partners and sub-contractors take on proportionately greater importance. (Steiner, 2000).

But stakeholder engagement does not prove the linkages with sustainability actually exist. Moreover, it does not even begin to identify what all the possible linking pathways might be. For that, empirical research on relationship between corporate benefits and stakeholder engagement is needed. While the resource based view of the firm allows us to better

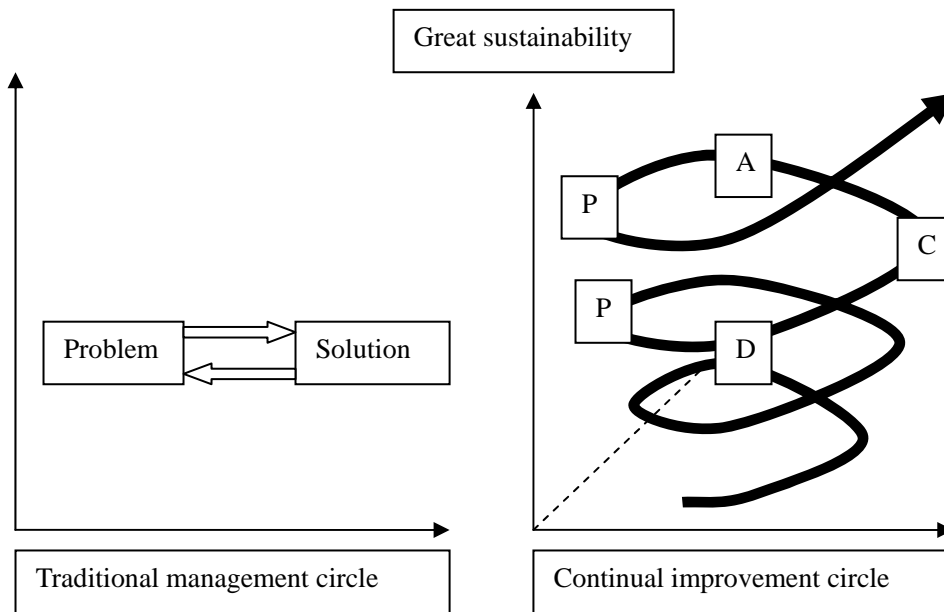


understand how stakeholder relationships can restrict or facilitate a company's access to various tangible and intangible resources, it does not explicitly address how a stakeholder orientation is reflected in various management functions, and how such functions create value for an organization. The stakeholder model used in this thesis is an adaptation of the Performance Evaluation and Management System developed by Waterhouse and Svendsen (1998). The system is based on three interrelated ideas.

1. Corporations exist in a network of interdependent stakeholder relationships, these relationships are symbiotic, evolve over time and are mutually defined (Svendsen, 1998).
2. A company must have the ability to 'sense and respond' to a changing environment (Haeckel, 1999). This gives them the ability to filter out “noise” in the environment and the ability to make decisions that will ensure the fiscal well-being of the corporation and the relationships upon which they depend.
3. Stakeholder oriented companies depend on multi-layered information and performance measurement systems. Such systems allow the company to constantly improve organizational effectiveness and adapt corporate strategy to changing circumstances. Such systems and their outputs also help to satisfy the accountability demands of internal and external stakeholders and can help a company diagnose relationship problems early and take steps to improve those relationships.

From reviews above, the recognition is that sustainability evaluation is an essential step to provide the decision makers with directives for design and implementation of alternatives. Sustainability evaluation is, in fact, an indispensable step in the process of design and implementation of sustainable alternatives, a transforming revolution to change traditional management “problem to solution” circle to “continual improvement ” circle (Plan, Do, Check, Act ) (Figure 2.1).

When the objective of an organization or corporation is to design alternatives aiming at greater sustainability, the need for a tool to evaluate such advance immediately emerges. The result from the evaluation process then forms the basis for design of improved alternatives.

**Figure 2.1 Comparison of management circle**

(Source: based on Deming 1994)

First and most common efforts towards sustainability evaluation were directed to the definition and evaluation of indicators for sustainability (cf. Bakkes et al., 1994; Rigby et al., 2000; Bell and Morse, 2003; IIED, 2004) with great impact on the research and development agenda for environment and natural resources. In fact, 'Environmental Impact Assessment (EIA)' has become almost a special discipline, with its own jargon (Cashmore, 2004), and its own scientific network<sup>8</sup>. Today, environmental indicators are included in many studies related to sustainability management at different scales.

Although the development of social indicators and their integrated and quantitative evaluation for sustainability evaluation is still largely in its infancy, current efforts directed towards the development and monitoring of social indicators have significantly enhanced insight in the social aspects of sustainability (Noll, 2002; Pepperdine and Ewing, 2001). In recent years, a large number of methods have been proposed for sustainability evaluation, assessing concurrently economic, environmental and social indicators (van der Werf and Petit, 2002; IIED, 2004; Hart, 2004).

<sup>8</sup> One of the main network of the discipline is the Journal 'Environmental Impact Assessment Review'

## 2.2 Definition of the evaluation

The term “evaluation” has been described as an elastic word that stretches to cover judgements of many kinds (Weiss, 1972). In a more informal sense, evaluation can be a kind of informal subjective evaluation that people make in the course of their everyday lives, judging the value, merit or worth of something. In a formal sense, an evaluation is more of a 'disciplined inquiry' that applies scientific procedures to the collection and analysis of information about the content, structure and outcomes of programs, projects and planned interventions (Clarke and Dawson, 1999). Others describe evaluation as the following:

- Evaluation is concerned with questions such as: are we doing the right thing, are we doing things right, and what lessons can we learn from our experiences (SDC, 2000).
- The evaluation of a process or a system is a basic prerequisite for improving productivity, efficiency, and performance: "you cannot improve what you cannot measure" or "if you cannot measure it, you cannot manage it" (Kaplan and Norton, 1996).
- Evaluation is usually defined as the determination of the worth or value of something, judged according to appropriate criteria, with those criteria explained and justified (House, 1993).
- The Organisation for Economic Cooperation and Development (OECD) has recommended the following definition of evaluation for its member countries. This definition has been adopted by all major donor agencies: An evaluation is an assessment, as systematic and objective as possible, of on-going or completed aid activities, their design, implementation and results. The aim is to determine the relevance and fulfilment of objectives, developmental efficiency, effectiveness, impact and sustainability (from Danida, 1999).

As Clarke and Dawson (1999) summarize, evaluation is "a form of applied social research, the primary purpose of which is not to discover new knowledge, as in the case of basic research, but to study the effectiveness with which existing knowledge is used to inform and guide practical actions". The most important purpose of evaluation is not to prove, but to improve, and unlike basic sciences, evaluation does not aim for truth or certainty; its aim is to help improve programming and policy-making. Evaluation is also very much

action-oriented, mainly to identify recommendations for programs, policy, and decision-making.

Evaluators rely heavily on existing social science research methods and methodologies for obtaining information. This has led to the perception that there is no single research strategy unique to evaluation research. What distinguish evaluation research from other forms of social research are not the methods that are used, but the purpose to which the methods are put. The emphasis is placed on providing practical knowledge to aid the decision-making process (Clarke and Dawson, 1999).

Sustainability Evaluation (SE) can be seen as the logical extension of environmental impact assessment (EIA), although SE is conceived on a broader scale and is still new enough to be facing considerable implementation barriers (Gibson, 2002a). An important difference between these two approaches is that EIA has been applied and legislated in numerous jurisdictions, while SE has mainly been promoted at the conceptual level.

EIAs are designed to anticipate any adverse environmental effects resulting from the implementation of planned projects and to devise strategies to mitigate these effects before the project commences (Gibson, 2002b). Several areas are covered during an EIA depending on jurisdiction and project type. The following are now routinely addressed about socio-economic and biophysical effects, examination of alternatives aiming to identify best economic and environmental options, and public reviews (Gibson 2002b: 152). Unlike EIAs, which are traditionally project or program specific, SE also includes policy or strategic-level evaluations. Furthermore, the shift from EIA to SE requires stronger integration of social, economic, and ecological considerations, acknowledgement of systemic complexity, and higher standards for decision-making approvals than has been the case in EIA regulatory processes implemented to date (Gibson, 2002b: 158). The broad scope of SE is also noted by Devuyst (2000: 68), who define SE as “a formal process of identifying, predicting and evaluating the potential impacts of an initiative (such as a legislation, regulation, policy, plan, program, or project) and its alternatives on the sustainable development of society”.

Within the EIA framework, there is growing recognition of the need for assessing policy and programs according to broader sustainability considerations in addition to environmental

criteria. Strategic Environmental Assessment (SEA) has revived interest in sustainability considerations within EIA (Noble, 2002: 4). SEA is designed and advanced as a higher-order EIA of policy and programs, meaning that it addresses the environmental impacts of proposed policies, plans or program (Mitchell, 2002: 164). SEAs usually contain the same components as EIAs, namely a focus on “needs justification, scoping, identification of alternatives, prediction of impacts, and assessment of significance of impacts, evaluation, public participation, implementation, mitigation, and evaluation” (Mitchell, 2002:165).

In general, for the purposes of this review, we see the main purpose of SE as providing an integrated framework that can be applied flexibly, as required, but in an integrating manner, to:

- Assess the environmental, social and economic outcomes (impacts) of development (policies, plans, programmes, actions) - as an audit or performance check to determine if a community or organisation is progressing towards sustainability;
- Evaluate the environmental, social and economic sustainability of policies, plans, programmes and actions when they are being developed or have been proposed.

Although SE could be applied as a post-hoc exercise, it is far more preferable that it be undertaken up-front to support policy-making, planning and decision-making processes. It should be fully integrated into such processes rather than undertaken as a separate activity. The lineaments of this approach have been suggested by Buselich (2002):

*“sustainability evaluation are needed to address the economic, social and environmental interdependencies within policies, plans, legislation and projects, in order to complement and extend other assessment and decision-making processes and enable a more inclusive and informed decision-making. Sustainability evaluation needs to integrate issues and seek to assess the cumulative and synergistic impacts of decisions and management practice, and subsequently facilitate comprehensive decision-making in order to deliver greater certainty, transparency and accountability in government decision-making”.*

A comparison of EIA, SEA and sustainability evaluation is offered by Devuyst (1999)

**Table 2.1: Comparison of the EIA, SEA and sustainability evaluation**

	<b>EIA</b>	<b>SEA</b>	<b>sustainability evaluation</b>
Subject of assessment	Projects with potential significant environmental impacts	Policies, plans and programmes with potential significant environmental impacts	Initiatives (such as legislation, regulations, policies, plans, programmes, and projects) with potential significant sustainability impacts
Frame of reference	Environmental policy	Environmental policy	Policy or vision on sustainable development
Scope of the study	Mostly environmental aspects are examined (such as water, air, soil, noise, and landscape), sometimes also socio-economic conditions at the local level (surroundings of the project)	The examination of environmental effects (such as water, air, soil, noise, and landscape), is often complemented by the study of socio-economic aspects at a regional, national or international level (depending on the policy, plan or programme a wide area could be affected)	Sustainability issues need to be examined at their appropriate level (local, regional, national, or international). These include e.g. the use of non-renewable resources, the application of precautionary and reversibility principles, the focus on long-term effects, the influence on climate change, aspects of equity within society and between North and South, training and employment opportunities for local populations
Introduction by governments	Established in a majority of national and regional governments	Established in a few national or regional governments, experimented with by many governments	Introduced in a few local governments on an experimental basis
Methodology for impact prediction	A wide range of methods for quantitative impact prediction exist	Because of the blurred nature of many policy and planning proposals impact prediction is often of a qualitative type	Methods for predicting sustainability impacts need further research, attempts have been made to use sets of sustainability indicators to predict how initiatives will affect the sustainable nature of society

**Sources: (Devuyst 1999)**

A particularly critical issue alluded to here is how to integrate qualitative and quantitative information into a single sustainability evaluation. Some techniques are able to combine qualitative and quantitative data in an accurate manner which is effective in aiding decisions. Other approaches which use standardisation or the use of symbols (e.g. in the planning

balance sheet approach) tend to divert decision-makers' attention from the task of integration by referring to additional information (McAllister, 1980). But most experimentation and research on sustainability evaluation has adopted a qualitative approach partly because the vast array of issues surrounding particular proposal and initiatives demand complex analysis, and partly because of the current lack of well-developed and tested quantitative sustainability evaluation tools.

### **2.3 Comparison of the evaluation methods**

In order to apply for the methodology of evaluation, Clarke and Dawson (1999) compare it with similar methodologies in the field:

#### *Auditing:*

Both evaluation and auditing may follow systematic procedures, look at a program's outcomes and share the same ultimate aim of improving the quality of a program, but they approach the task in different ways. An evaluation examines a program from a number of different perspectives and looks for causal linkages between program activities and outcomes. Evaluation is a theory-focused activity that also considers the relevance of the various components of a program and makes predictions about future developments. By comparison, an audit is much less ambitious; it concentrates on checking what actually happens against prescribed normative standards. As a method of evaluation, audits are widely used in the monitoring of quality assurance.

#### *Monitoring:*

Monitoring involves the systematic and continuous surveillance of a series of events. It concentrates on examining the procedures and processes involved in the delivery of a program. Information is collected on a regular basis to provide feedback about the level of performance. Monitoring can be carried out throughout the implementation stage of a program with a view to making changes should there be any significant deviation from the planned goals or program objectives. Monitoring is essentially a value free activity and the emphasis is on collecting information about what a program is doing without questioning the logic or structure of the program design.

#### *Inspection:*

Inspections represent a form of external evaluation in that those responsible for carrying out the inspection are usually from outside the institution. For example, there are inspection

units located in social service departments that are responsible for inspecting residential homes or schools that are subjected to regular inspections.

Like monitoring it can be described as a top-down approach that checks if codes of practice are adhered to and minimum standards are achieved. Auditing, monitoring, and inspections are all capable of generating data that can be used for an evaluation, but in themselves they do not constitute an evaluation. Evaluation goes beyond these activities, mainly by seeking not just to describe how a program is operating but also aiming to explain the underlying logic behind a program (Clarke and Dawson, 1999).

## 2.4 Sustainability evaluation development

Sustainability indicators have been developed since the early 1980s. The discussion below identifies several important and influential initiatives that have shaped sustainability indicator development.

### 2.4.1 The World Commission on Environment and Development 1987

‘Our Common Future’ highlights that environment and development problems are not compartmentalised within nations, within sectors or within broad dimensions of activity (environmental, economic, social) (WCED 1987). The integrated nature of the problem called for integrated solutions that would require a change in institutional arrangements and objectives at every level. The report noted that the United Nations system, through UNEP, should:

- Monitor, assess, and report regularly on changes in the state of the environment and natural resources and
- Develop criteria and indicators for environmental quality standards and guidelines for the sustainable use and management of natural resources (WCED 1987).

### 2.4.2 The United Nations Conference on Environment and Development 1992 (UNCED) and Agenda 21

International recognition of the role that indicators can play in making informed decisions concerning sustainable development emerged at UNCED. Ideas concerning the development of indicators as tools for decision-making were certainly prevalent before 1992, but UNCED provided the opportunity for international recognition, collaboration and coordination of initiatives (Dahl 2000).



Recognition of indicators as key tools for sustainability decision-making was articulated in Chapter 40 of Agenda 21, Information for Decision Making (Dahl 2000). The introduction to the chapter states (United Nations 1993; 40.4):

Indicators of sustainable development need to be developed to provide solid bases for decision making at all levels and to contribute to the self-regulating sustainability of integrated environment and development systems.

Chapter 40 specifically calls for the development of indicators as a means to implement and provide the foundation of sustainable development. Section 40.6 states (United Nations 1993; 40.4):

Countries at the national level, and international governmental and non-governmental organisations at the international level, should develop the concept of indicators of sustainable development in order to identify such indicators.

Chapter 40 aimed to ensure that decisions were based on sound information with proposed actions on bridging the data gap and improving information availability (United Nations 1993). Bridging the data gap clarifies that despite considerable data and information already existing within different sectors there is a need to collect new information for sustainable development.

This includes information on the links between environmental, developmental and socioeconomic issues, remotely sensed data and specific demographic data (e.g. poverty, health and access rights). Section 40.4 specifically notes that indicators such as gross national product and measurements of resource depletion or pollution are inadequate for assessing holistic sustainability (United Nations 1993).

Improving the availability of information is critical for the development of indicators. While there exists a great deal of information that could be used for the management of sustainable development, accessing this information is a significant challenge for developing countries. Difficulties in terms of costs, technology or the expertise to interpret and use the information can hinder access.

Chapter 40 provides an important starting point for the introduction of indicators as instruments used in informing sustainable development. It highlights two primary roles for indicators: that of the need to get accurate information existing data and new data, and using indicators as a means of facilitating improved collection and access for developing nations, decision makers and the public.

Ten years later after UNCED, at the 2002 World Summit on Sustainable Development, indicators have been directly and indirectly recommended as tools that facilitate, link and implement sustainability. The Plan on Implementation, building on many areas of Agenda 21, calls for the continued development of partnerships and the inclusion of sustainability principles in all areas of decision-making. Indicators are identified as being a tool for informing and strengthening the institutional framework for sustainable development and including measurable objectives into policies and plans (United Nations 2002a; United Nations 2002d). A key outcome was the UN CSD indicator set, explored further in this chapter.

#### 2.4.3 The United Nations Development Programme (UNDP) – Human Development Report

The UNDP has been publishing its Human Development Reports since 1990. The reports are a guide to human development issues using aggregated indicators as a means to convey trends.

The reports contain indicators that compare the relative levels of human development of over countries (UNDP 2001). Starting in 1990, the reports used traditional social and economic indicators to measure the state of human development in selected countries. Early recognition came in the human development reports that a healthy society was an essential component of sustainable development, and that economic growth (and poverty) were linked to environmental protection (and degradation).

The Human Development Report series introduced the human development index (HDI). The index combines life expectancy, educational attainment and income indicators to give a composite measure of human development. The indicators that are measured for these

criteria are life expectancy, educational attainment and adjusted income per capita in purchasing power in US Dollars (UNDP 2001). The HDI is an average for each country and does not reveal disparities among different social, economic or regional groups. The HDI is the primary index used in assessing human development, but other indices have been distilled from the HDI. These include the Human Poverty Index (HPI), the Gender Related Development Index (GDI), and the Gender Empowerment Measure (GEM). These measurements combine to assess the state and trends of human development for over 160 countries.

The Human Development Reports do not attempt to make a measure concerning sustainability itself, but rather focus on measuring a core component of the sustainability equation – just, fair and equitable human development. The reports clearly articulate that human development is a vital component of a sustainable society and leads to positive environmental and socio-economic outcomes.

#### 2.4.4 OECD initiatives

The influence of the OECD upon the development of indicators at an international and national level has been immense, with frameworks and methodologies exported to programs at all levels. Selected traditional indicators used in measuring ‘progress’ were poverty, education, nutrition, health, gender, income, and income distribution. These were used in the development of the human development index.

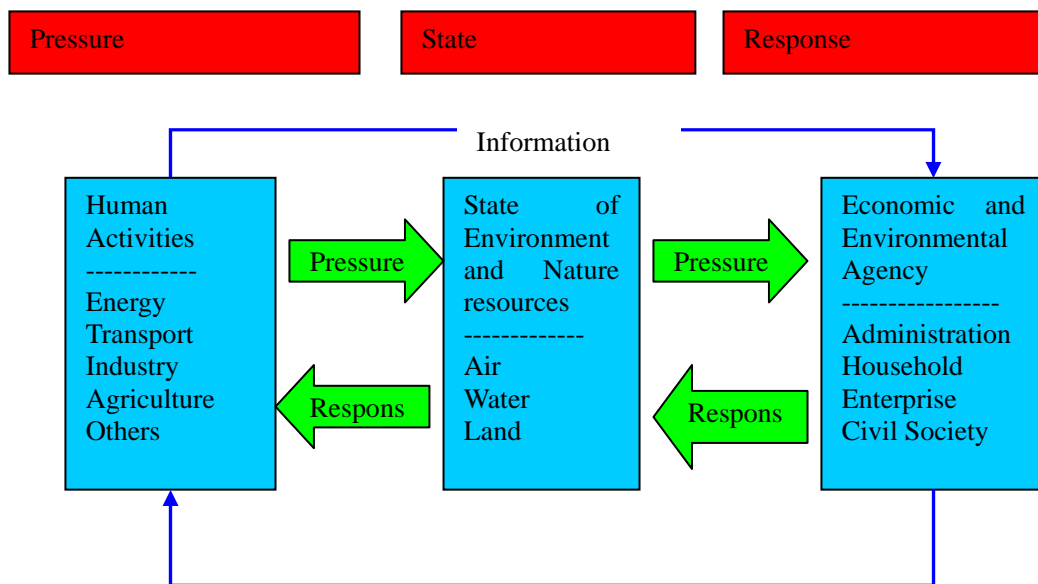
For selected countries with appropriate data, separate HDI have been prepared to account for gender, income, and regional differences. HDI have been prepared over a time series of earlier years, so that change in human development can be tracked over time. (UNDP 2001).

The OECD has developed indicators under the environmental, economic and social dimensions of sustainability and developed a comprehensive framework for their organisation. The OECD has set a rigorous policy agenda for sustainable development, focusing its work on the integration of environmental considerations into socio-economic decisions (OECD 2001a; OECD 2001b). A key program that has influenced indicator

development worldwide is the initiative on environmental indicators (OECD 2001b; OECD 2001c). The initial commitment to environmental indicators occurred at the 1991 meeting of Environment Ministers of OECD countries, committing to a program of assessing member countries environmental performance.

The Environmental Performance Review program was established in 1992, its goal was to help member and selected non-member countries to improve performance in environmental management. A preliminary set of indicators was established in 1991 and reviewed in 1993 where the conceptual framework and core indicators were developed. These indicators have been reviewed every two years and used in performance evaluation (OECD 2001d). This core set is envisaged not only as a tool for measuring environmental performance, but also as an approach for reporting on sustainable development. Reporting has occurred across a wide range of issues including climate change, ozone depletion, acidification, toxic contamination, urban environment quality, biodiversity landscapes and waste. In addition resource issues have been evaluated and have included water resources, forest resources, fish resources, and land resources (OECD 2001d).

**Figure 2.2 Pressure-state-response model**



Source: (OECD 2001a)

The indicators in the OCED program are organised into a framework known as the Pressure State Response (PSR) model. The PSR model (Figure 2.2) was developed as a means to organize multiple indicators and address environmental issues in a logical structured manner. It was derived from the stress-response framework for ecosystems developed by Friend and

Rapport in 1979 (Friend 1979). This framework has been exported to many initiatives around the world as a useful way of structuring indicator information and evaluations. The PSR model is based on the notion of causality: human activities result in an array of pressures upon the environment, which derives natural resources for societal use (Moldan 1997). The pressures alter the quantity and quality, or the state of natural resources and affect processes in the physical and ecological environment. The pressures that affect the state of the environment result in a societal response in the form of environmental, economic and sectoral policies (Moldan 1997). The response action forms a feedback link that affects the pressures. (OECD 1997) states how this process forms a similar parallel to the steps taken in the policy cycle, that of problem perception, policy formation, monitoring and evaluation and hence is a useful structure for ordering information and assessing sustainability issues.

- Pressure Indicators represent the pressures from human activities upon the environment. These indicators can be further subdivided into direct and indirect pressures. Direct pressures refer to pressures that are directly exerted upon the environment (e.g. emissions from pollution or the consumption of natural resources) whilst indirect pressures refer to broader, background pressures that influence and drive human activity.
- State Indicators reflect the status of components of the environment over time, and the quality and quantity of resources. They are designed to be decoupled from environmental pressures, that is, the indicator should reflect the physical state of the environment and not the pressure upon it.
- Response indicators represent the response from society to a particular environmental issue, such as a response from an agency, or a monitoring or action program in relation to the issue. Response indicators are the least developed in the framework and require further work (OECD 2001b).

The PSR framework implies causality between parameters: pressures affect the state, which results in a societal response. This link can be useful in raising awareness about environmental relationships and can be used in a policy context as it organises the indicator

information into a structured framework. The PSR model has however, several limitations. Because it has 'cause and effect' linkages, it can neglect the systemic and dynamic nature of environmental processes, and oversimplify complex issues (Bossel 1999). The danger of interpreting the link between the PSR variables as a linear relationship is evident - seeing the pressure as the cause, the state as the effect and the response as a feedback regulator or effect (Moldan 1997). The initial PSR model could lead to distortions in identifying the true cause of the problem.

Further research is required to identify system relationships and avoid drawing invalid references from an oversimplified view of an issue. Indicator systems are not replacements for scientific research and analyzing on complex issues, rather they are an additional tool that can aid in policy development and decision-making (Hardi et al 1997; Higgins 2001; Hanson 2003). The PSR model has emerged as a dominant force in indicator frameworks, and is used by several national and international institutions for assessing sustainability. Its simplified and systematic approach has enabled the PSR to be easily adopted in reporting despite the danger in using a linear cause and effect approach.

#### 2.4.5 United Nations Environment Program (UNEP) and GEO Reports.

In 1993 UNEP commissioned a report into the development of indicator science. It was an influential milestone in the development of sustainability indicators, bringing together information from national, regional and international jurisdictions and addressing key issues such as data and aggregation. The report suggested a stress-response conceptual framework for the selection, development, and analysis of indicators under three related sub-systems: (1) the human population, (2) production, consumption and technology; and (3) the environment (Bakkes et al 1994).

The initiative focused on PSR type approaches and integrated methodologies across the range of pressure, state and response type criteria. This improvement of information across the matrix of the issue would be enhanced by reporting frameworks that stress the linkages between environmental and socio-economic aspects of sustainability, poorly covered at the time (Bakkes et al 1994). A key issue was the use of indicator information, referring that characteristics of systems have been determined by information producers rather than by

users (Bakkes et al 1994). Furthermore an effort is required to address information issues in developing countries and increase the capacity for these countries to construct and use indicators. This issue is still a priority today as it was in 1994.

In 1997, UNEP pioneered the development of the Global Environmental Outlook (GEO) reports (UNEP 1997). The UNEP GEO project was initiated in response to the environmental reporting requirements of Agenda 21 and to a UNEP Council decision of May 1995 that requested the production of a comprehensive global state of the environment report (UNEP 2003). The GEO project addresses five key questions (UNEP 2003):

- What are the major regional and global environmental problems, both current and emerging?
- What are the major demographic, social, and economic driving forces behind the observed problems and trends?
- Where are we heading if we continue doing "business as usual"?
- What is being done to address environmental concerns and what can be done in the future to move forward on the path of sustainable development?

GEO reports focus on integrated reporting with environmental issues coupled with socioeconomic developments and provide policy advice and evaluation of options for governments on key environmental issues. The reporting and evaluation process aims to be cross-sectoral and participatory encouraging the building of consensus. Outputs from the GEO process include a state of the environment report, a data portal and advice for international policy, planning and resource allocation (UNEP 2003).

The GEO reports, published in 1997, 2000, and 2002 (the latest on the 30th anniversary of the Stockholm Declaration) represent a growing effort at indicator based international environmental reporting. The process has increasingly moved towards sustainability reporting with the addition of socio-economic indicators and integrated reporting frameworks (UNEP 2002). In addition, the GEO reports have taken the further step of linking objectives to action by making policy recommendations on the basis of the results and focusing on action decision-making on international environmental issues.

#### 2.4.6 World Bank initiatives

The World Bank has played a significant role in the development of indicators since 1995. It uses indicators in environmental and development evaluation and contributes to measurement and accounting methods (World Bank 1997). The World Development Indicators (WDI) has been an ongoing initiative, released in annual reports since 1998 (Chesson 2000). The reports contain approximately 600 indicators organised under the following themes (World Bank 2002):

- World view
- People
- Environment
- Economy
- States and markets
- Global links

The WDI report focuses on 148 economies with basic indicators for a further 62 economies (World Bank 2002). Each grouping above is sub-divided into a thematic classification, for example, environment is subdivided into land-use, agriculture, biodiversity and protected areas, water pollution, energy, urbanisation and environments, air pollution, government and genuine savings (World Bank 2002). The groupings are loosely based on the pressure-state-response model. From the WDI the World Bank releases annual data and analysis (World Bank 2001) and has contributed to sustainability based accounting systems that integrate environmental and economic concerns (World Bank 1997). In addition to the WDI, the World Bank produces environmental performance indicators that are used to monitor project performance of investment projects (World Bank 2002). These indicators specifically refer to measurement of performance of projects and operate at a project scale. This is linked to a recent program called 'Indicators on the Web' (World Bank 2002). This project essentially gathers information on themes such as resources, and pollution control at a project and national level that task managers can use in assessing project impacts.

#### 2.4.7 United Nations Commission on Sustainable Development (CSD)

The CSD work program on sustainability indicators represents the peak international effort to develop indicators as tools for sustainable development. The program was an intensive effort of collaboration between governments, international organisations, academic



institutions and NGOs aimed at establishing a useable national set of indicators for sustainability evaluation (Dahl 2000).

In 1995, CSD initiated a five-year work program on Indicators of Sustainable Development as a way to measure progress in implementing Agenda 21 (UN Department of Economic and Social Affairs 2001). The objective of the program was to make indicators of sustainability available at the national level by defining them, elaborating methodologies, and providing training and capacity development. It was proposed that the indicators could be simultaneously used in national policy making and international reporting (UN Department of Economic and Social Affairs 2001). Phase 1 of the initiative commenced in 1995 and focused on developing methodologies for the 134 indicators. The method sheets provide information on the indicator, its decision relevance, measurement methods, data availability and responsible agency (UN Department of Economic and Social Affairs 2001). Phase 2 of the initiative commenced in 1996 and focused on training, capacity building, and the national testing of the indicator set. Participating governments were encouraged to pilot test and experiment with the indicator set over 2 years. Phase 3 of the initiative commenced in 1999 and focused on the evaluation of the testing results, the compilation of a database, and the finalisation of the working list of indicators and the reporting framework (UN Department of Economic and Social Affairs 2001).

The discussion of indicator frameworks was a priority under the CSD initiative. Early work categorised the indicators under the chapter headings of Agenda 21 and under the four dimensions of sustainable development – environmental, social, economic, and institutional.

Within these categories, the indicators were further classified according to a variant of the PSR model called driving force-state-response (DSR) model (UN Department of Economic and Social Affairs 2001). Under this framework, initial list of 134 indicators were identified for development and testing by candidate countries. After the testing phase, the DSR model was abandoned in favour of a thematic organising framework (UN Department of Economic and Social Affairs 2001). This shift occurred due to the experiences of the testing countries that recommended that the framework reflect an emphasis on policy issues or themes related to sustainable development, that there be balance and comprehensiveness across the sustainability spectrum, and that the indicators be narrowed to a core set that reflect common

issues and priorities (UN Department of Economic and Social Affairs 2001).

As a result, the final thematic framework consisted of 15 major themes, 38 sub-themes, and 58 core indicators (Table 2.2 below). The emphasis has been placed on an indicator system that delivers pragmatic conceptually sound indicators for decision making, representative of an international consensus, and covers the broad themes of sustainable development. This CSD program continues to report at an international level and has been a driving force for indicator development. The framework, themes and indicators are summarised in Table 2.2 below.

**Table 2.2 United Nations CSD Indicator Set**

	Theme	Sub Theme	Indicator
<b>Social</b>	Equity	Poverty	% of population below poverty line
		Gender equality	Ratio of average female wage to male
	Health	Nutritional status	Status of children
		Mortality	Mortality under 5 y.o.
		Sanitation	% populatoin with adequate sewage disposal
		Drinking water	Population access to safe water
		Healthcare delivery	% of population with access to primary health care Child immunization
			Contraceptive prevalence rate
	Education	Education level	Children reaching Grade 5 of primary ed.
		Literacy	Adult secondary ed level
	Housing	Living Conditions	Adult literacy rate
<b>Environment</b>	Security	Crime	Floor Area per person
	Population	Population change	Number of recorded crimes per 100 000 pop.
			Population growth rate Population of urban formal and informal settlements.
	Atmosphere	Climate Change	Population growth rate Population of urban formal and informal settlements.
		Ozone Depletion	Emission of greenhouse gases
		Air quality	Consumption of Ozone depleting substances
	Land	Agriculture	Ambient concentration of pullutants in urban areas
			Arable and permanent crop land area Fertilizer Use
			Pesticide use
		Forests	Forest area as % of land area
			Wood harvesting intensity
		Desertification	Land area affected by desertification
		Urbanisation	Area of formal and informal settlements
	Oceans & Coasts	Coastal Zone	Algae concentration in coastal waters
		Fisheries	% of total population living in coastal areas
	Fresh water	Water quantity	Annual catch by major species
		Water quality	Annual % withdrawal of ground and surface water
	Biodiversity	Ecosystem	BOD in water bodies
			Area of selected key ecosystems Protected areas as a % total area.
		Species	Area of selected key ecosystems Protected areas as a % total area.
<b>Economic</b>	Economic structure	Economic performance	Abundance of key selected species.
		Trade	GDP per capita
		Financial status	Balance of trade in goods and services
			Debt to GNP ratio
	Consumption patterns	Material consumption	Total ODA given or received as & of GNP
			Intensity of material use
		Energy use	Intensity of material use
			Annual energy consumption per capita Share of consumption of renewable energy resources
		Waste generation	Intensity of energy use
			Generation of municipal and industrial solid waste Generation of hazardous waste
			Generation of radioactive waste
<b>Institutional</b>	Institutional framework	Transportation	Recycling and usage
			Distance travelled per capita by mode of transport.
		Implementation of ESD	National SD strategy
		International cooperation	Implementation of ratified global agreements
	Institutional capacity	Information access	Number of internet subscribers per 1000 participants
		Communication	Main telephone lines per 1000 inhabitants
		Science and Technology	Expenditure on R&D as a % of GDP
		Disaster preparedness	Economic and human loss due to natural disasters.

(Source: UNDESA 2001)

#### 2.4.8 The International Institute for Sustainable Development (IISD)

The IISD is a leading non-government authority on, and strong advocate for, the development of indicators. The IISD has several program areas of interest in relation to sustainability, including a dedicated program for evaluation and measurement (IISD 2001). The IISD has been involved in indicator and policy development since 1995. It has an objective of making significant contributions to indicator theory and practice and maintains a detailed compendium on indicator initiatives (IISD 2001). An important initiative coming out of the IISD is the Consulting Group on Sustainable Development Indicators (CGSDI) and the Dashboard model.

The CGSDI formed as an outcome of the SCOPE project in 1996 (IISD 2001) and takes an innovative departure from traditional indicator research, focusing on the development of indices and visualisation of the results (Dahl 2000). The program on aggregated indices states that its goal is to develop a ‘super’ aggregate of environmental, social, and economic indicators on par with the GDP. While this is an extremely complex task, it acts as a useful policy and media focus for highlighting issues of sustainable development.

The visualisation of indicators is an important but generally neglected stream of research. The CGSDI is investigating the use of several models in the visualisation process, with a focus on an innovative approach, the Dashboard of Sustainability. The ‘Dashboard’ is a visualisation tool that converts indicator data into standardised scores and presents them in the form of a dashboard or instrument panel. The outer circle represents the individual indicators within a policy field; these scores are aggregated to form an index for the overall policy field and for an overall sustainability index (or the Policy Performance Index) (Jesinghaus 1999). The tool enables improved communication of indicator data and facilitates the presentation of aggregated indices to the public and decision makers (Jesinghaus 1999). It recognises the need to simplify large lists of complex measures into simplified (but not simpler) aggregated measures using visualisation strategies. The Dashboard has been applied to the UNCSD program, comparing 10 years of progress from the 1992 Rio summit to the 2002 Johannesburg summit.

## 2.5 Conclusion

This chapter's literature review shows that the corporate sustainability has been debated and researched for a long period. While this literature is not intended to represent the entire spectrum of visions of sustainability, it demonstrates that there are significantly different ways of researching and working toward sustainable development.

Following Einstein's dictum that problems can't be solved within the mind-set that created them, the first step toward any comprehensive social, economic and ecological change is to understand the mental model that forms the basis of present economic thinking.

The development of a variety of measurement and policy initiatives at an international level has provided a critical conceptual backdrop to indicator science. Many initiatives at the national and local scales have based their frameworks on international systems, including specific indicators and processes of measurement. The impetus for indicator development has come primarily from the international level, with international agreements such as Agenda 21 setting the framework and being the driving force for action on sustainability reporting and evaluation.

The rapid assimilation of indicator programs at the national, local and sectoral level has been significant. Many countries, based on their international Agenda 21 commitments, have developed reporting strategies for sustainability that link to major government policies. However the coordination of these systems amongst competing users, the development of indicator measures and monitoring regimes and their actual use in management decision-making still remain significant challenges. The challenge for indicator systems has emerged as a primary focus for specific sectors, which are examining in detail these particular problems within their contexts. The international developments in indicator science have remained an important backdrop and technical source for conceptual and practical application of the concept to specific sectors.

The mind-set of the present capitalist system might be summarized as follows:

- Economic progress can best occur in free-market systems of production and distribution where reinvested profits make labour and capital increasingly productive.

- Competitive advantage is gained when bigger, more efficient plants manufacture more products for sale to expanding markets.
- Growth in total output (GDP) maximizes human well-being
- Any resource shortages that do occur will elicit the development of substitutes.
- Concerns for a healthy environment are important but must be balanced against the requirements of economic growth, if a high standard of living is to be maintained.
- Free enterprise and market forces will allocate people and resources to their highest and best uses.

Obviously, the present capital definitions and its weakness provoke many debates and new thinking. Many ideas of the sustainability have been put in economic terms in *Natural Capitalism: Creating the Next Industrial Revolution* (Hawken and Lovins, 2000). Hawken/Lovins did not recognize social capital but pointed out four forms of capital (natural, human, manufactured, and financial). As environmental economists, they are particularly concerned with the lack of differentiation by many economists between the ability of technological innovation to substitute for many resources and inputs and the inability to substitute for the “envelope” within which we live.

This life-sustaining environment cannot be treated as an equal factor of production, according to Hawken/Lovins, but is a limiting factor underlying all production. Many of these issues were raised decades ago (Daly, 1977). They wrote that using only the circular flow model to understand the economy is like trying to understand an animal in terms of its circulatory tract without recognition that it is connected to the larger world by a digestive tract on both ends. Like the animal, our economy takes in and processes natural resources, consumes some of them, and produces waste which goes back into the environment. Recognition of the effects of waste, as well as the non-renewable of some resources, has been slow in coming to traditional economics but is a central theme of *Natural Capitalism*.

While traditional neoclassical as well as endogenous growth theories have emphasized maximizing labour productivity, the natural capitalism model focuses on ways to increase resource productivity. Increasing labour productivity, and thereby average wages, relies on the use of more capital and/or more natural resources per worker. But if certain natural resources are in fact the limiting envelope, their use must be made more efficient.

According to Hawken/Lovins, current industrial capitalism “is a financially profitable, non-sustainable aberration in human development...which does not fully conform to its own accounting principles. It liquidates its capital and calls it income. It neglects to assign any value to the largest stocks of capital it employs – the natural resources and living systems, as well as the social and cultural systems that are the basis of human capital.”

However, they believe that assigning monetary values to natural capital will not remedy this problem. Many of the services we receive from living systems, like oxygen, have no known substitutes at any price.

Hawken/Lovins seem to rely heavily on a realization by businesses that many unexploited resource productivity gains exist and would be profitable. This process would be greatly aided by a tax system that rewarded environmentally sound activities and penalized waste. Without such publicly driven incentives, one must rely on the notion that businesses are not now profit-maximizing in the ways that they could if better educated as to various cost-saving techniques. There is undoubtedly some truth to this, but the question is how rapidly and how extensively change would occur that is not already occurring. In other words, is “natural capitalism” a viable business strategy for enough firms to make a difference?

An interesting aspect of the natural capitalism model is its suggestion that we shift from an economy where well-being is based on the acquisition of goods to one where more of well-being is based on a flow of services. Purchasing the services of a washing machine, which is both maintained and metered by the manufacturer, gives them an incentive to build in efficiencies and durability in ways that the current market structure does not. It also would eliminate the great instability in consumer durables purchases, stabilizing that portion of the economy. This would require a major rethinking of both consumer and business strategies, but along a line that has begun to occur already with equipment leasing in some areas.

Actually, a completed economy needs more capitals to function properly, Forum for the future added social capital and formed five capitals model.<sup>9</sup> From these capital redefinitions,

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<sup>9</sup> Forum for the future, SIGMA project. [www.projectsigma.org](http://www.projectsigma.org)

there are four basic capital classifications in business sustainable development, they are:

- **Financial capitals**, consisting of traditional manufacturing and financial capital, including investments, and infrastructure, machines, tools, and factories.
- **Natural capital**, made up of living systems, ecosystem services and natural resource.
- **Social capital**, in the form of intangible assets like culture capital, and organizational capitals
- **Human capital**, including human capital and intelligence capital.

According this classification of the capital, the next chapter will develop a methodology and define the indicators to increase the transforming of these four capitals through managing the four aspects of corporate sustainability.



## **CHAPTER 3. Developing theory and methods**

This chapter introduces the methodology applied during the research and performance indicators developed for the sustainability evaluation. This research on corporate sustainability could have been designed in a number of ways. Since each methodological type has particular strengths and weaknesses, it is a matter of choosing the one which best suits the research questions and available resources. Given that the research aims to build and implement corporate sustainability evaluation system, qualitative methods were considered the most appropriate for this research.

The method used in the external evaluation aims to explore the comprehensive understanding of the sustainability management to different sectors that resulted from sustainability partnerships. In this case, through using case studies of a multi-level stakeholder engagement, I interviewed, observed and read the documents of related organizations, including NGOs, government and business and explored what these organizations attitudes and response to corporate engagement with different stakeholders.

This research uses qualitative methods to gain the views of representatives from various sectors on issues that sustainability means to them. While that program research focuses entirely on different opinions of a pragmatic relationship that they were involved in at the time of the interviews, this research similarly asks interviewees to reflect on their organizations and to reflect on more abstract issues such as the meaning of corporate sustainability and the measurement of the corporate performance in the current period.

### **3.1 The basic evaluation approaches**

There are different approaches to fit different purposes of evaluations. They are differentiated between evaluation forms according to the purposes. Danida (1999) for example distinguishes between sector evaluations, evaluations of country programs, project evaluations, thematic evaluations and evaluations of mode of co-operations. These are either designed for documentation purposes or for extracting experience, or for both.

The OECD (1991) has recommended that the following classification of evaluations be used: sectoral evaluations; instrumental and thematic evaluations; global evaluations per country

or region; one-off evaluations; guides, manuals, and basic principles; midterm reviews, inter-phase and end-of-project evaluations. Others, such as Cracknell (2000) list the following types of evaluations: baseline study; on-going evaluation; inter-phase evaluation; built-in evaluation; self-evaluation; ex post evaluation; impact evaluation; internal and external evaluation; and other types of evaluation.

Clarke and Dawson (1999) provide a more scientific listing of evaluation types. They cite the most fundamental distinction between types of evaluation by the use of the terms "formative" and "summative". To summarize briefly, in a formative evaluation, the emphasis is on the identification of the strengths and weaknesses of a program or project; its aim is to find ways to improve, and tends to be action-oriented. The principle aim of a summative evaluation on the other hand is to determine the overall effectiveness or impact of a program or project; it therefore is done at the completion of a work and tends to be more conclusions-oriented.

Another way to differentiate evaluation types is to look at who the evaluator is. A fundamental distinction is drawn between external and internal evaluation roles. External project evaluation is the classical form of evaluation, where the evaluators are not project members, but experts that are called in for a period of time to investigate the defined questions. External evaluations are therefore suitable for factual issues, relatively complex situations, and overall appraisals. With their outsider's view, the external evaluators use appropriate methods to collect information on the project and its environment. The end product is a report, which they submit to the commissioning agency or organization (SDC, 2000).

In an internal evaluation, the evaluators are full-time employees from within the organization or project. The strengths of an internal evaluation are in the evaluators' detailed and specific knowledge of the project. It can be flexibly conducted with little effort on a regular basis, and facilitates rapid adjustments. It promises to be successful if those involved are sufficiently self-critical, and generally leads to stronger team building and cooperation. Weaknesses can result from the tendency not to see the forest for the trees and when there is no distance from daily operations. Internal evaluations are therefore less suitable for analysing issues of relevance in a broader context (SDC, 2000).

Clarke and Dawson (1999) list a few points about advantages and disadvantages of internal

and external evaluators.

External evaluators have the advantage to have:

- independent stance, fresh perspective;
- objective critical approach;
- overview of numerous organizations as comparisons;
- resilience to intimidation of management;

But they have the disadvantage to be:

- ignorant of internal situations and matters;
- unaware of who key players are;
- more interested in report than implementation.

Internal evaluators have the advantage to:

- be familiar with history, background, and issues of the organization;
- be more committed to implementing recommendations;
- likely focus on the central concerns as perceived by management;

But have the disadvantage to:

- have vested interest in particular outcomes;
- be often over-influenced by history, background, issues of organization;
- be unlikely to have experience of broad range of evaluation techniques.

There are occasions when the two types – external and internal – can be combined in a single evaluation, thus effectively benefiting from the advantages that each has to offer (Clarke and Dawson, 1999). From this point, this thesis will use this combination way.

### 3.1.1 Different approaches to analyze sustainability

Business decision-makers involved in managing corporate sustainability are eagerly looking for an evaluation system to compare with their own historical records and other business counterparts in order to make more judicious decisions for their business development. The development of this evaluation framework is commenced by reviewing background information such as earlier research, other attempts and principles for sustainability management and evaluation methodology.

This information is essential for determining the progress of a company towards sustainability, its main strengths and weaknesses, and the priority issues to be addressed, e.g.

by a corporate sustainability report. The information equips decision-makers to focus on the priorities without losing sight of the other components of sustainable development that, if not (yet) priorities, are also crucial for its achievement. It also provides the basis for monitoring and evaluating the effectiveness of the strategy and adjusting it as necessary.

### 3.1.2 Indicator-based evaluations

Indicator-based evaluations include text, maps, graphics, and tabular data, but, unlike them, they are organized around indicators—generally speaking, a broader series of indicators. A great deal of attention is paid to choosing them systematically. Indicators enable evaluations to be comprehensive yet selective: because they can be selective, they are better equipped to cover the wide array of issues necessary for an adequate portrayal of human and environmental conditions. Systematic procedures for choosing indicators and arrangement of issues covered by the evaluation and the values involved make the construction of indicator-based evaluation more transparent than that of narrative evaluations. By employing the same set of indicators over time, later indicator-based evaluations can be compared with previous ones, providing more consistent coverage from one evaluation/reporting period to another.

Comprehensive and consistent coverage, together with systematic organization of issues and their indicators, enable priority issues and strengths and weaknesses of performance to be clearly identified. This makes indicator-based evaluations more useful than other approaches for decision-making and hence for strategy development.

Participation by decision-makers and stakeholders is necessary to ensure that the evaluation incorporates their values and addresses their concerns. Participants need to have a major say in what is assessed and in deciding questions of value. At the same time, the team undertaking the evaluation has a responsibility to make sure that the evaluation is technically sound and withstands scientific scrutiny. However, the technical demands of indicator selection impose constraints on participation. In effect, the evaluation must be designed jointly by participants and technicians.

Indicator-based evaluations are potentially more transparent, consistent and useful for decision making than other approaches; but whether they fulfil their potential depends on how well they are designed and executed.

The number of levels between different dimensions and indicator is a major factor in both the robustness and the user-friendliness of an evaluation method. Too few levels make it hard to trace the logic behind the choice of indicator – what aspect of the sustainability the indicator represents and how fully and directly it represents that aspect. Too many levels run the risk of losing the user in a convoluted series of links between subsystem and indicator.

Given the broad scope of sustainable development, a large number of indicators is inevitable but presents an enormous communication problem.

The growing ranks of indicator projects and professionals worldwide face two challenges that seemingly contradict each other:

- Growing complexity. As our understanding of the complexity of sustainability grows, how do we manage the mountains of data required to monitor it?
- The demand for simplicity. Since public education and resulting political action are seen increasingly and urgently as the purpose for creating indicators, how do we present them in ways that are simple, elegant and effective, without compromising the underlying complexity?

### 3.1.3 Narrative-based evaluations

Narrative evaluations combine text, maps and graphics. They may use indicators, but are not built around them and the indicators used may change from one reporting period to another. They include standard state of environment reports, like the World Bank's World Development Report, and a wide variety of other reports, and represent the most familiar approach to measurement and analysis. Their strength is their familiarity and flexibility. The potential for participation is great, because the evaluation can be tailored to the technical skills of participants. Evaluators can devote their attention to topics on which they have information and choose whatever communication device they deem most suitable for each topic.

However, this flexibility has pitfalls. Unsystematic choice of topics coupled with uneven treatment can mask gaps in coverage and obscure priorities: what topics have been omitted? Has a topic been left out because it is unimportant or because of lack of data? How does one topic relate to another? How can one compare the importance of a topic covered by an

anecdote-rich case study with one covered by extensive statistical analysis? The topics covered, or the way they are covered, may change between reporting periods, preventing the identification of trends.

Limited transparency and consistency reduce the usefulness of these evaluations for decision making, particularly for strategy development and monitoring.

Agenda 21 and some of the international convention texts incorporate or include elements of narrative evaluation and they are widely used as general frames of reference on progress toward sustainable development. However, their value as frameworks for assessing the sustainability of proposed actions is limited, although a number of countries have used or adapted them to related purposes (see, for example, Table 5.1). For example, the United Nations Commission on Sustainable Development started with Agenda 21 as its framework but has since switched to a more structured and manageable arrangement of dimensions, themes, and sub-themes, cross referenced to the appropriate sections of Agenda 21 (UNDESA 2001b)

Sets of principles and criteria that are expressly intended as indicator frameworks have been somewhat more useful. These tend to be devoted to particular sectors, notably forest management, such as the Forest Stewardship Council's principles and criteria (FSC 2000); the Montreal Process's criteria for the conservation and sustainable management of temperate and boreal forests (The Montréal Process, 1999); the Pan-European criteria for sustainable forest management (Ministerial Conference on the Protection of Forests in Europe and Pan European Forest Certification Council, 1998); and the International Tropical Timber Organization's criteria for sustainable management of natural tropical forests (ITTO 1998).

However, none of these frameworks is fully systemic, hierarchical, or logical. Consequently, indicator sets derived from them suffer from one or more of such flaws as an inability to produce clear pictures of socio-economic conditions and the state of the environment, omission of essential aspects of sustainability, overlapping components and consequent redundancy and double-counting, confusion about what is being measured and why, immeasurable indicators, and distortion of evaluations through an emphasis on documenting procedures rather than achieving results.

This thesis uses a structured methodological framework to address to the overall aims and objectives. The formal basis of the method lies in the comparative case study approach, highlighted by authors including Hogwood (1984), Devine (1995), Parsons (1995) and Miles (2000).

The design of this method focused on addressing the thesis's objectives: identifying the theoretical constructs and components of evaluation systems, investigating issues over their application to business case studies, and providing an overall evaluation of the corporate sustainability. The use of indicators is an objective way of highlighting the values, assumptions and processes that influence business strategy, and subject them to critical analysis. They contribute to an increased understanding of specific issues and can be directly used in improving the process.

This thesis uses a mix of explanatory, ideal-type and normative frameworks in its approach to analyse and assess the use of indicator systems in the corporate sector. The use of an explanatory evaluation framework is a means to compare case studies. Comparative case studies are useful tools in policy research given the virtual impossibility of using a rigid experimental design in studying the policy process, they allow for the investigation of a variety of issues at appropriate scales from which theories can be tested and insights can be gained.

### **3.2 Indicator benchmarking as internal evaluation approach**

The concept of evaluation tool used in this thesis is benchmarking. Benchmarking basically is often being described as an objective-setting process, which has implications on the strategic level of a company or business. Benchmarking assists managers and decision-makers to identify practises and processes that may then be adapted for improving plans and strategies. Benchmarking is a management approach and forces constant testing of internal actions against external standards of industry practices (Camp, 1989). By providing facts, benchmarking also helps to remove subjectivity from decision-making. This thesis uses the internal benchmarking by indicator based framework, Consider the characteristic of corporate sustainability, this internal benchmarking are appropriate. Chapter 5 will show the benchmarking application in Chinese companies.

### 3.2.1 Definition of benchmarking

Benchmarking has its origins in 1979, when the American company Xerox initiated a process, which was called competitive benchmarking. The objective of Xerox was to examine its unit manufacturing costs and to compare them with those of its Japanese competitors. Xerox compared mechanical components, operating capabilities and features of competing copying machines. To the alarm of Xerox, the findings were that their Japanese competitors sold their products for the same amount that it cost Xerox to just produce them (Evans, 1994).

Based on the Xerox benchmarking experiences, Robert Camp established a widely recognized reference book for an industry standard for searching for best practices and establishing benchmarking procedures (Camp, 1989). In the introduction, he mentions two ancient truths that illustrate why benchmarking is needed:

- The first is over 2500 years old and originates from China, where the general Sun Tzu wrote, *"If you know your enemy and know yourself, you need not fear the result of a hundred battles"*.
- The other truth is of unknown age and just a simple Japanese word, dantotsu, meaning *"striving to be the best of the best"*.

These two old sayings probably illustrate the very essence of modern industrial benchmarking and show the way to success in all kinds of business situations. Solving ordinary business problems, conducting management battles, and surviving in the marketplace are all forms of war, fought by the same rules (Camp, 1989).

Benchmarking has been accepted and used in many industries and is gaining global economic recognition. Camp (1998) defined benchmarking as the search for industry best practices that will lead to superior performance. Camp's definition emphasises the value of learning in order to achieve superiority through a structured and systematic manner. Li et al. (2001) further state that the value of benchmarking is to learn best practices internally or externally for the purpose of achieving superiority.

Benchmarking has already been used by many private sectors such as manufacturing, commercial, transportation and communication as a tool for performance comparison, to increase competitiveness and to maintain continuous improvement (Szekely et al., 1996;



Camp, 1998; Codling, 1998; McCabe 2001; Dey, 2002; Jenkins & Hine, 2003). Since the benefits of using benchmarking in industries are very evident, potential benefits may be gained within the corporation by benchmarking performance of corporate improvements on sustainability. The fundamental purpose of setting sustainability benchmarks in corporation is to identify, understand and implement best practice that may be significant in promoting sustainable goals in corporation.

### 3.2.2 The benefits of benchmarking

Sustainability benchmarking can encourage changes towards more environmentally friendly design and responsible social behaviour by corporations. Davies (2001) states that companies are increasingly recognising that good environmental sense is also good business sense. It is through the process of developing benchmarking that standards can be improved and measures can be put in place. Additionally, it reinforces the commitment to change by the parties involved in the industry.

Benchmarking, as Szekely et al. (1996) suggest, is a means to make significant improvement in environmental and social performance whilst remaining competitive. Sustainability benchmarking is a structured approach to examine and compare sustainability performance internally and externally. The objective is to identify and assess the ability for integrating non-financial aspects into design and to bring creativity to decision maker's attention. It is seen as an ideal link between incorporating awareness of business sustainable development and long-term strategy into the current practice by creating a platform for discussion and implementation.

The other objective of developing sustainability benchmarking is to set business sustainable goals and to ensure consideration of the environment and sustainable development in the corporation development strategy (McCabe, 2001). It is important to have a clear vision of the desired outcome of a project, and to make sustainability consideration an integral part of design by helping policy makers' to understand and reduce a development's impact on the natural environment over its life cycle or its potential impacts on local community. It may also be useful for the government when making macro-level decisions about environmental and social policy, to determine whether original targets are being attained and to ensure that regulations are being complied with (Davies, 2001).

The values of sustainability benchmarking are many. CSES as a means of evaluating the achievement of best practice helps to shift the focus from just achieving profitability to achieving a higher standard of sustainability performance (Davies, 2001; McCabe, 2001; Jenkins & Hine, 2003). It enables environmental problems to be identified in order to minimize risks from poor environmental performance. It is fundamentally important as a way to respond and to satisfy the need for a more sustainable corporation.

Benchmarking can also help to pursue a clearer definition of corporate sustainability issues, against which performance objectives can be prepared and monitored (Szekely et al., 1996; Jasch, 2000). Since the benchmarking process is an ongoing process, it enables knowledge of improved performance from projects or consultants to be transferred during the benchmarking process (Li et al., 2001; Jenkins & Hine, 2003). Additionally, it shows the ability to evaluate the corporate performance achieving sustainable goals in reducing environmental and social impact.

Traditionally, environmental management systems (ISO/14001) and environmental performance evaluations (ISO/14031) have been adopted as benchmarking tools (Jasch, 2000; Matthews, 2003). However, both approaches have shortcomings. Environmental management systems (EMS) mainly consist of policies, procedures and audit protocols to investigate environmental burdens and encourage continual improvement of environmental performance. Nevertheless, as Matthews (2003) describes, the EMS is insufficient to be used as a benchmarking tool without further adjustment because it does not provide a platform for setting common goals and, as the central theme of benchmarking is to enable comparison, it is bound to fail. EMS also lacks procedures for collecting data on performance and, as such, results of progress are not disclosed or shared. Environmental performance evaluation (EPE) is adopted when EMS is not used as a way to assist in identifying environmental aspects (Jasch, 2000). It is implemented on an ongoing basis to measure progress between the environmental target and the actual performance.

Given their deficiencies, the corporation needs better tools than EMS and EPE that practitioners can use to benchmark sustainability performance of projects. The CSES developed in this research is a way of achieving this goal. The four criteria measured in the

CSES can be used to set benchmarks for corporation to achieve, and to compare performance internally and externally. By further developing the sustainability criteria into a benchmarking tool using computer technology, CSES was developed to satisfy such needs. CSES is intended to be used as a sustainability evaluation tool to benchmark economic, social and environmental performance in corporations.

### 3.2.3 Steps of benchmarking

Camp (1989) gives four basic stages of benchmarking that are more philosophical, but which express the fundamental issues of benchmarking:

1. Know your own operation: to understand the internal processes, and their strengths and weaknesses.
2. Know the industry leaders or competitors: to identify competitors from which to learn, and to identify the leaders in your own industry.
3. Incorporate the best: to actually learn from the strengths of the competitors and industry leaders.
4. Gain superiority: to capitalize from own strengths and from incorporating strengths from the best.

These “philosophical” stages are further broken down into different project steps. Different researchers identify different steps. Evans (1994) for example suggests a five step approach. The focus of benchmarking is slightly different for each approach and each project, but the following five steps are probably common to all:

1. understanding of what to benchmark;
2. collecting data – internal data and data from competitors;
3. analyse the data and identify performance gaps, i.e. difference to best practice or best competitor;
4. take actions, either to close the gap or to adapt the strategy;
5. monitor progress.

Camp (1989) uses a more comprehensive approach, which encompasses ten steps in four stages as illustrated in Table 4.1. The four stages are the planning, the analysis, the integration, and the action stage, which are briefly discussed below.

**Table 4.1 Benchmarking of ten steps in four stages**

Planning	1. Identify what to be benchmarked.
	2. Identify comparable companies, functions, and processes
	3. Determine data collection method and collect data.
Analysis	4. Identify current "performance gap".
	5. Project future performance levels.
Integration	6. Communicate benchmarking results and gain acceptance.
	7. Define functional goals.
Action	8. Develop action plans.
	9. Implement specific actions and monitor progress.
	10. Recalibrate benchmarks.

(Source: Camp 1989)

The planning stage ensures that the new benchmarking process will support the organization's other strategic plans that are already in place. This firstly involves the identification of the processes, business units, or functions to be benchmarked. The key aspects of these processes along with the critical success factors have to be identified in order to get the key performance indicators of those critical success factors.

The indicators have to be specific and generic, and will measure the key aspects in a meaningful way providing the opportunity to link success factors with business results. To carry out such investigations and research, a benchmarking team has to be formed and trained. In the planning stage, it is essential to understand its own processes, products and services before they can be compared with others. Also the data collection method has to be determined and the actual data collection itself is being carried out at this stage.

The analysis stage serves to compile and compare the collected data from the previous stage. This involves preparing the data and identifying and analysing the gaps between best

practice – as observed in the benchmarking partners – and its own processes, products or services. When analysing the performance gaps, adjustments for differences due to other management philosophies, product features or other factors influencing the performance need to be made.

In the integration stage, the benchmarking and analysis results have to be communicated to all levels of the organization in order to obtain support and commitment for the benchmarking project. The integration stage also includes the step to convert the benchmark findings into a statement of operational principles to which the organization can subscribe and by which actions for change will be judged.

Finally, in the action stage, an action plan is developed and implemented. The action plan will need to develop strategies to close the performance gaps, which were identified earlier in the analysis stage. This action plan will include a change process where tasks, responsibilities, resources, and time targets are defined.

The action stage will be accompanied by a monitoring system, which involves the monitoring of the critical success factors over time. At the same time, the benchmarking process is an on-going process; all the stages need to be recycled again.

#### 3.2.4 Types of Benchmarking

According to Evans (1994), there are basically two things that can be benchmarked:

Firstly, **performance indicators** which are statistical data that are collected mainly through questionnaires and which are in databases for easier investigation. Typical performance indicators might for example be profit margins, return on investment, cycle time, sales per employee, cost per unit. In sustainability evaluation, economic indicators like financial return and environmental indicators can be benchmarking through collecting performance indicators.

Secondly, **business processes** that drive the performance indicators; the investigation of business processes is more difficult to put in a questionnaire, but it involves a detailed examination of how the processes are performed. The investigation might for example look

at processes such as request for service, meeting customers' orders, producing and delivering the product or service. In sustainability evaluation, social indicators and business ethics can be benchmarking through investigating business process.

Four basic types of benchmarking are generally distinguished, which have different objectives, advantages and disadvantages (Evans, 1994; Camp, 1989):

1. Internal benchmarking: This means benchmarking against internal operations, for instance between similar functions in the different business units. This is a simple and cost effective benchmarking exercise and its advantages include encouraging the sharing of information within the company, making information easily available, immediate results, and practice before doing external benchmarking.
2. Competitive benchmarking: This means benchmarking against direct competitors in the same market or field. The objective is to compare yourself with companies in the same market and to identify how you can beat them. The advantage is that the results are directly comparable with your own company's processes and products. However, the disadvantage obviously is that it is very difficult to obtain reliable and detailed information of direct competitors.
3. Industry or functional benchmarking: This means benchmarking against leaders in a specific industry, or against same functions, such as human resource management. The advantage of industry benchmarking is that it is easier to find willing partners, since the information is not going to a direct competitor.
4. Process or generic benchmarking: This type of benchmarking means breaking down the company or functions into processes and benchmarking those. The advantage of this type of benchmarking is that this is often where the breakthrough ideas for change are generated, and it has the potential of revealing best practices. The disadvantage is that it is difficult to carry out; it requires careful preparation, open minds, creative application and commitment from senior management, and it is expensive in time, effort and money. But it is believed that the payoff outweighs the investment and that it has the potential to identify best practices (Evans, 1994).

### **3.3 Stakeholder engagement as an external evaluation approach**

The implementation method used in this thesis is stakeholder approach. By examining the levels of corporate stakeholder relationship, we can provide a comprehensive feedback to

corporate sustainability from view of stakeholders directly and get a better understanding of the role that certain kinds of stakeholder relationships play in the creation of business and societal value.

Stakeholder engagement is an important aspect of sustainability evaluation. The results of stakeholder engagement inform a range of information for decision making. Corporations initiate different types of stakeholder engagement on a regular basis. These may include stakeholder engagement for the purpose of informing ongoing business processes, as well as engagement that is implemented specifically for the corporate evaluation preparation. Stakeholders include those internal to the corporation (e.g., employees) as well as those who are external (e.g., communities).

### 3.3.1 Definition of stakeholders

The term 'stakeholder' has been defined as any group or individual who can affect or is affected by the achievement of a firm's objectives (Freeman, 1984). Primary stakeholders have interests that are directly linked to the fortunes of a company including shareholders and investors, employees, customers, suppliers, and residents of the communities where the company operates. Some theorists have also added individuals and groups that speak for the natural environment, non-human species, and future generations to this list (Wheeler and Sillanpaa, 1997).

Secondary stakeholders, on the other hand, have indirect influences on an organization or are less directly affected by its activities. They include the media and pressure groups, and others that inhabit the business and social networks of the organization. A typology of stakeholders reveals the variety of interests or "stakes" that groups of people hold in organizations or causes. The stakes of investors, for example, are based on equity. Other direct stakeholders, including customers, employees, competitors, suppliers, and debt holders, have economic stakes or interests in a company - they can directly affect or be affected by a corporation's financial success. Labour unions, community groups, environmental organizations, human rights organizations and consumer advocates have a stake in the company's impact on people and the environment, as well as their economic impact.

### 3.3.2 The benefits of stakeholder engagement

The past thirty years have seen a rapid evolution in understanding about whether and how stakeholder relationships contribute to business success. While research which looks at the link between corporate social responsibility and financial performance have shown mixed results, there are a few significant studies which show there seems to be a strong correlation between good stakeholder relationships and business success.

A number of studies have used CSR to correlate measures of stakeholder relationship quality with financial performance (Collins and Porras, 1995; Berman et al, 1999). Berman et al., used measures for the quality of relationships with employees, customers, communities, minorities and women, and the natural environment that were based on CSR ratings derived from the companies' previous year CSR ratings with financial performance on measures such as return on assets (ROA), return on equity (ROE), and return on sales (ROS). They found quantitative support for the assertion that there is a connection between how a company treats its stakeholders and financial performance.

They also showed that over an eleven-year period, sales and employment growth at stakeholder oriented companies were significantly higher than at shareholder-focused companies. Specifically, stakeholder oriented companies reported four times the growth in sales and eight times the growth in employment. The researchers argued that successful, visionary companies, although very diverse in other ways, put a lower priority on maximizing shareholder wealth and greater emphasis on serving the interests of a broad mix of stakeholders. Stakeholder-oriented companies remained in harmony with their environment by keeping “feelers” out and by developing strong relationships. They also noted that companies which survived for twenty five years or longer tended to be cohesive, conservative in their financial dealings, and more likely to have decentralized decision-making.



More recently, Berman (1999) tried to determine which kinds of CSR behaviour were most strongly tied to ROA. They found that CSR behaviours that dealt with the company's relationships with employees and with customers had significant direct effects on ROA. The authors also examined the possible mediating role of company strategy, which was deduced from financial reports as selling intensity, capital expenditure efficiency, or capital intensity.

Behaviour related to communities, minorities and women, and the natural environment proved to have a mediating effect, depending on the company's strategy. Berman (1999) speculated that mediating factors (e.g., impacts on the natural environment, and thus relationships with environmental groups), might not be of equal importance across industries. Similarly, relationships with minorities, as indexed by board and senior executive diversity, might be more important to financial performance in more racially and ethnically homogeneous geographic regions than in more diverse regions. Rather more indirectly, correlations between social and sustainability and stock price performance have been examined in the context of indices such as the Dow Jones Sustainability Index, the Innovest Eco Value Index and the Jantzi Social Index. Where these indices include the social dimension, their measurement is not based on the quality of stakeholder relationships. Rather, they equate social performance with observers' subjective ratings of actual corporate behaviours. In that respect, they focus on the outcomes or consequences of corporate stakeholder relationship quality. Moreover, the correlations are claimed to be the simultaneous manifestation in three dimensions of performance of a common factor, namely, management competence.

### 3.3.3 The Guidance of stakeholder engagement

Corporation can use a standardized method for stakeholder engagement or design its own approach. The engagement process should be sufficiently systematic to ensure that stakeholder views are properly understood. For an evaluation to be accountable, the process of stakeholder engagement should be documented. The evaluation corporations should clearly and openly explain its approach for defining which stakeholders it engaged with, how and when it engaged with them, and how this engagement has influenced the evaluation content and the corporate sustainability activities.

The corporation can describe the stakeholders to whom it considers itself to be accountable, and identifies the stakeholders that it expects to use the evaluation report. The evaluation content draws upon the outcomes of stakeholder engagement processes used by the corporation to manage its activities. Or the evaluation content draws upon the outcomes of any stakeholder engagement processes undertaken specifically for the evaluation. The stakeholder engagement processes that inform decisions about the report are consistent with the scope and boundary of the evaluation.

Failure to identify and engage with stakeholders is less likely to evaluation results that are suitable to their needs and thereby less than fully credible to all parties. In contrast, systematic stakeholder engagement enhances stakeholder receptivity and the usefulness of the evaluation. Executed properly, it is likely to result in continual learning within and outside the corporations, and to strengthen trust between the evaluating corporations and its stakeholders. Trust, in turn, fortifies evaluation credibility.

## **CHAPTER 4. An indicator-based evaluation**

The framework in this chapter aims to facilitate explicit discussion and informed decision making. It can help corporation improving sustainability in a systematic way. Like a map, the framework depicts the landscape of potential approaches to sustainable development and thus provides an overview of the aspects of corporate sustainability and the different requirements that are associated therewith.

With the help of the framework, the scope, focus and level of complexity of concrete processes can be clearly determined and distinguished from alternative approaches. An explicit determination of the content of projects or processes may help to make the concept of sustainable development more tangible and operational. Similarly, a clear terminology also facilitates communication and co-ordination among protagonists and stakeholders. With regard to the implementation of sustainable development, the framework helps to match the demands and expectations on sustainable development that exist on different policy levels.

The framework considers different forms to implement the aspects of sustainable development. On this basis, an informed choice for a specific form adequate for the given situation can be made within a project or process. As the framework points out perspectives for the improvement, extension and further development of the process, the framework can provide support in directing processes from a basic approach to more complex forms. Finally, the framework also provides a guideline for identifying approaches that may not be suitable to lead to sustainability.

In the journey towards integration of sustainable development into business strategy and practices, companies have different starting points and different pathways. However, the method by which to evaluate the achievement typically involves a series of steps that are similar from company to company. This chapter will develop a general framework and two implementing framework for such evaluations.

### **4.1 Introduction**

As described in Chapter one, there is a growing number of corporations dedicated to

promote their sustainability performance. At the same time, with increasing concerns over global environmental degradation and human health and poverty issues, great pressures from NGO and governments called for a demand for sustainability evaluation on corporations in developing countries. There is no doubt that the corporation needs to share the task of protecting the environment and more sustainable business practices are required to achieve this goal. With this in mind, there is a need for a sustainability evaluation tool that can be used to empower and build practitioners' capacity. Developing the sustainability evaluation system is a way of achieving sustainable goals in corporation by combining economic, social and environmental indicators into the corporate decision-making processes at all levels.

The Corporate Sustainability Evaluation System is an integrated framework that incorporates environmental and social issues into the decision process to improve the corporate sustainability performance. However, Elkington suggest that sustainability performance is difficult to evaluate when compared with evaluating tangible values. It was also because evaluation system and processes are less standardised and the unique character of each corporation contributes to the difficulties of evaluating performance. Therefore, there is a need to develop benchmarks tool for corporation to evaluate sustainability performance.

Developing a sustainability evaluation system is a way of promoting sustainable goals in corporation as it uses a multi-criteria approach that measures economic, social and environmental issues for appraising corporate sustainable performance. The sustainability indicators has been taken further in this research, using computer internet technology to develop a benchmarking tool to be used in the corporation in order to aid policy making and the corporate sustainability evaluation.

This chapter aims at presenting the CSES implementation by sustainability benchmarking tool. Benchmarking tool for analyzing corporate sustainability use multiple criteria that based on the sustainability indicators developed in this research. This chapter presents and discusses the underling principle of CSES, its use and its benefits as a benchmarking tool.

## **4.2 Defining sustainability indicators**

Indicators are a simple concept. *An indicator can be defined as a parameter, or a value*

*derived from parameters, which provides information about a phenomenon.* (OECD 1994). In providing information about a phenomenon (for example an environmental process, economic issue, or social problem) indicators relate signals from complex systems into useable information that can be used in decision-making (Dahl 1995; Bossel 1999). Indicators, as the middle ground between science and policy, must be simultaneously pragmatic and scientifically valid (Jesinghaus, 1999). They are a tool for promoting understanding, consensus building and communication (Hardi & Zdan 1997; Meadows 1998). It is critical to acknowledge that indicators do not provide an alternative to complex quantitative analyzing of relevant issues - they are a mechanism to communicate this information to a broader audience. Indicators provide only one tool for evaluations and need to be supplemented by other quantitative and qualitative information in order to avoid misinterpretation. Such information is needed to explain driving forces behind indicator changes.

The proceeding chapter suggested that for sustainability to be effective, it had to be translated into practical measures to address the needs of specific industry. It is through this 'customisation' that the concept can be applied in practical dimensions to the real world. Once general principles of sustainability are interpreted into context, objectives can be established in legislation, policy or consensual agreement. Sustainability evaluations must target the effects of a particular activity but also determine its contribution to a broader societal goal of sustainable development (Bossel 1999; Chesson 2000).

To measure our progress towards this goal, a reliable system of measurement is required. Measuring performance and of using indicators to convey information has existed for centuries (Meadows 1998). Indigenous cultures have used indicators for thousands of years to determine suitable times for food production and other aspects of living off the land (Berkes et al 2001). A simple sign in the environment has conveyed and simplified complex environmental processes that are relevant for the survival of a society. In an economic sense, a single indicator has judged people: their wealth. Whether the parameter of measurement is land, money, or property, an indicator of wealth represented the ability to live with security (Bossel 1999).

Economists have used gross domestic Product (GDP) as a single measure of the status of national growth. This single indicator has driven policy responses from national governments and has been an important influence in macro-economic policy. In recent years

however, GDP has been seen as simplified measurement that does not account for all aspects of 'growth' in a national economy, not taking into account social and environmental aspects of national wellbeing (Bossel 1999; Hundloe 2000). This highlights the inadequacy of a single indicator to capture the complexity of a particular situation and the caution that must be exercised during the aggregation of information.

The past decade has witnessed an increasing interest in, and applied work on, the use of indicators to monitor change. The development of useful indicators requires not only an understanding of concepts and definitions, but also a good knowledge of management needs. A key determinant of a good indicator is the link from measurement to practical management options. As discussed in Chapter 1, evaluation can be used at several scales as a tool for environmental, social or economic reporting, performance evaluation, and reporting on progress or clarifying objectives and priorities for sustainable development.

The basic premise to develop sustainability indicators is that sustainable development involves ensuring four capitals' sustainability as depicted in 2.5, which the aim of corporate sustainable development is to increase the wealth of corporation, in other words, to increase the capital transforming rate. The economic profitability involves creating shareholder value and penetrating market presence and economic impact. The environmental sustainability involves minimizing environmental impact and protecting natural resources. The social aspect of sustainability involves improving social well-being including social performance and product responsibility. The management aspect of sustainability contributes to labour productivity including employment and human rights. In order to operate compatibly with global reporting system, the indicators defined in this thesis are also cohered with Global Reporting Initiatives indicators.

This chapter on sustainability performance indicators is organized under the categories of economic, environment, social and management. Each category comprises indicators definitions and operational criteria reference. In using on the indicators, the company should keep in mind the following guidance on data compilation:

- Information should be presented for the current evaluating period (e.g., one year) as well as future targets where they have been established for the short and medium term.
- Performance indicators are accompanied by guidance on interpreting and compiling information for the indicator. Organizations should use the guidance when evaluating on the indicators;
- In some cases, ratios or normalized data are useful and appropriate formats for data presentation. If ratios or normalized data are used, absolute data should also be provided;
- Corporation should determine the appropriate level of aggregation of information.

#### 4.2.1 Economic aspects

The economic aspect of sustainability concerns the corporate impacts on the economic conditions of its stakeholders and on economy at the local, national and global levels. The economic indicators illustrate:

- flow of capital amongst different stakeholders
- main economic impacts of the company throughout society.

Business financial performance is fundamental to understanding its basis for sustainability. However, this information is normally already reported in corporate financial accounts. What is often reported less and is frequently desired is the corporate contribution to the sustainability of a larger economy, not just of the corporation itself.

#### **Element 1: Economic performance**

Indicators in this element show corporate ability to creating value for the company's shareholders and benefits to economic development. It can show the corporate performance on applying professional and diligent management to secure competitive return on shareholders' investment, and conserving, protecting, and increasing the company's assets through integration of sustainable development thinking into business practices.

#### **Element 2: Market Presence**

It shows the corporate performance on enhancing company reputation and brand image through integration of sustainable development thinking into business practices. Building capacity for economic development in the communities, regions and countries in which the company operates or would like to operate.

#### **Element 3: Indirect Economic Impacts**

It shows the corporate performance on supporting economic development by partnering with

local businesses, hiring local staff and suppliers, and contributing capital to investment vehicles that benefit community business growth. It also can show the corporate performance on promoting the economic interests of lower-income and underserved communities by providing access to jobs, facilitating the transfer of knowledge and technology, and encouraging entrepreneurship.

#### 4.2.2 Environmental aspects

The environmental aspect of sustainability concerns the corporate impacts on living and non-living natural systems, including ecosystems, land, air, and water. The structure of environmental indicators covers input (material, energy, water) and output (emissions, effluents, waste) related performance. In addition they cover performance related to biodiversity, environmental compliance, and other relevant information such as environmental expenditure, and the impacts of products and services.

##### **Element 4: Materials**

It shows the corporate performance on helping conserve primary resources, such as minerals, timber, and agricultural products, by reducing raw material use in processes, packages, and products. Includes adopting efficient industrial processes related to the reuse and recycle of materials, such as metals, paper, plastics, and construction materials, and the consideration of how use of renewable resources can help conserve primary resources.

##### **Element 5: Energy**

It shows the corporate performance on conserving energy and improving the energy efficiency of operations and of goods and services sold. Where practical, it includes conserving and efficiently using fossil fuels and moving towards increased use of environmentally safe and sustainable energy sources.

##### **Element 6: Water**

It shows the corporate performance on conserving water and improving water quality through efficient use and careful planning, it includes improving the water efficiency of facilities, processes, and products and reducing or eliminating process and wastewater discharges.

##### **Element 7: Biodiversity**

It shows the corporate performance on promoting the conservation and sustainable use of biological resources. It includes the protection and restoration of biodiversity, endangered



species, and sensitive habitats such as forests, wetlands, coral reefs, and marine sanctuaries.

**Element 8: Emissions, Effluents, and Waste**

It shows the corporate performance on minimizing adverse environmental impacts and human health effects associated with air emissions, wastewater discharges, offensive smells, excessive noise, and solid and hazardous waste generation associated with operations (including transportation and company vehicle use), products, and services. It includes efforts such as process changes, equipment changes and material substitution changes in handling practices, source reduction, recycling, and conversion to energy.

**Element 9: Products and Services**

It shows the corporate performance on developing and distributing products and services whose adverse environmental impacts and effects on humans have been assessed and minimized. Considering how a new product or service can have a positive impact on the natural world. Includes understanding the environmental, health and safety impacts of products and services along the entire life cycle and taking steps to eliminate or reduce these impacts and risks from intended uses or reasonably foreseeable misuses. Also includes designing new products and processes with the intent of minimizing wastes, reducing emissions, and eliminating adverse end-of-life impacts.

4.2.3 Social aspects

The social aspect of sustainability concerns the corporate impacts on the society within which it operates. The social performance indicators identify key performance aspects surrounding labour practices, human rights, and broader issues affecting consumers, community, and other stakeholders in society.

**Element 10: Social performance**

Society performance indicators focus attention on the impacts of the corporation upon the communities in which they operate and to disclose how the risks attendant upon their interactions with other social institutions are managed and mediated. In particular, information is sought on the risks from bribery and corruption, undue influence in public policy-making and monopoly practices.

**Element 11: Product Responsibility**

Product responsibility performance indicators address those aspects of corporate products and services that directly affect customers: health and safety, information and labelling, marketing, and privacy. It mainly covered through disclosure on internal procedures and

extent to which these procedures are not complied with.

#### 4.2.4 Workplace aspects

The workplace aspect of sustainability concerns the corporate governance impacts on the human well being within which it operates. The performance indicators identify key performance aspects surrounding labour practices and human rights.

#### **Element 12: Employment**

It shows the corporate performance on helping address basic human needs, such as healthcare, nutrition, education, housing, sanitation, clean water, transportation, and communication in the communities in which the company operates and in the society at large. This could include contributing to the development of social capital (the ability of people to work together in a society for a common purpose, based on a sense of mutual trust) and supporting programs that promote social infrastructure and the health and well-being of community residents.

#### **Element 13: Occupational Health and Safety**

It shows the corporate performance on minimizing or eliminating spills, releases, accidents, and other incidents with the potential for adversely impacting people or the environment.

It also shows corporate performance on promoting a healthy and safe workplace. This includes compliance with occupational health and safety standards and practices, management of health and safety risks in the workplace, and employee training.

#### **Element 14: Training and Education**

It shows the corporate performance on developing and preserving human capital by activities such as generation of employment and training opportunities and by responsibly addressing the support needs of displaced employees.

#### **Element 15: Diversity and Opportunity**

It shows corporate performance on promoting diversity as a source of innovation and Eliminating discrimination and harassment for any causes. (E.g. colour, race, gender, age, disability, ethnicity, sexual orientation or religion) Examples of programs or practices include equal opportunity programs, job training for disadvantaged groups, and fair employment practices.

#### **Element 16: Human Rights**

Human Rights performance indicators require corporation's evaluating on the extent of

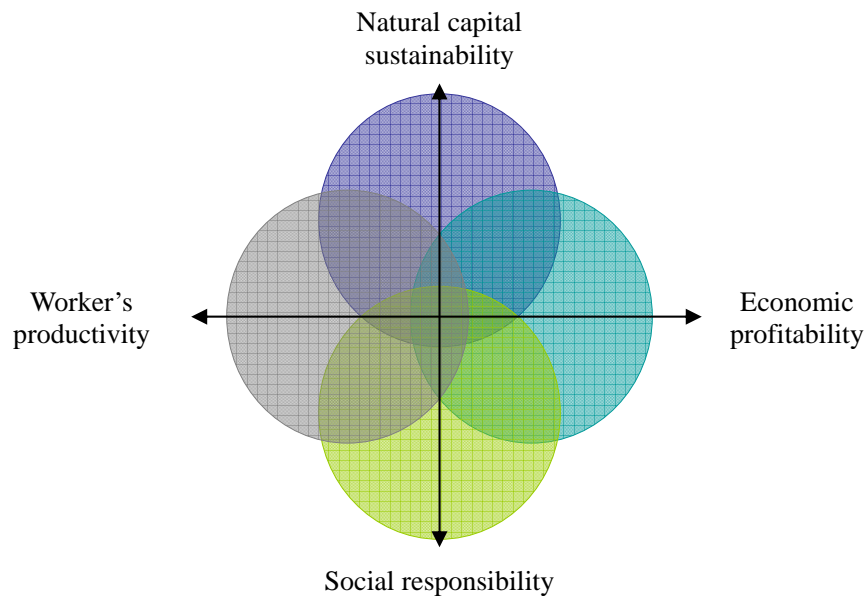
consideration of Human Rights impacts as part of investment and supplier/contractors selection practices. Additionally, they cover employee and security forces training on human rights and particularly incidents related to Non-discrimination, Freedom of Association, Child Labour and Forced and Compulsory Labour.

#### 4.2.5 Summary of indicators

Developing an indicator system is an ongoing process, a means of expanding the traditional notion of management, and of communicating this information to decision-makers and a wide variety of stakeholders. Numerous challenges remain for implementation, including expanding the traditional goal of business, identification of objectives and performance measures, reconciling scales, data, aggregation and visualisation methods (Bell & Morse 2001; Dhakal & Hidefumi 2003). This will provide a reference framework for further implementation, awareness of the benefits and pitfalls and eventually, a move towards a best practice standard for implementation and practice.

Whether an indicator system can deliver a definitive evaluation that says ‘this is a sustainable business’ is yet to be seen in this evolving field. Chasing the ‘magic number’ may be a misplaced idea when examining the effectiveness of indicator systems. As suggested in the discussion above, the real effectiveness of the systems comes into play when they drive management changes, raise perceptions and identify gaps in current knowledge. This is difficult to evaluate, but the changes and influences driven by using indicator systems are subtle. Any evaluation of effectiveness must take this into account.

A well-designed indicator framework is systemic, hierarchical, logical, and communicable. Systemic means that the parts are organized to facilitate analysis of key properties of the system and relationships between subsystems and major features.

**Figure 3.1 Systemic arrangements of parts**

In Figure 3.1, for example, the division of the corporate system into four sub-systems (economic, social, environmental and management) reflects the fact that corporate integrated objectives in business operation. It also facilitates analysis of the relationship among four dimensions. The above sets four aspects of the indicators. It is clear that there are significant interrelationships between the indicators of sustainability, and that they should be thought of in an integrated manner. However, for maximum ease of use, this initial version of CSES treats each of the elements independently. Table 3.1 shows these elements and operational indicators.

**Table 4.2 Corporate sustainability indicators**

Aspects (4)	Sustainability Elements (16)	Operational indicator (adopted from GRI) (79)
Economic profitability	1. Economic Performance	EC 1. Economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and to governments
		EC2. Financial implications of climate change
		EC3. Coverage of the organization's defined benefit

		pension plan obligations
		EC4. Financial assistance received from government
	2. Market Presence	EC5 Entry level wage compared to local minimum wage for significant locations of operation
		EC6 Practices and proportion of spending on locally-based suppliers at significant locations of operation
		EC7 Procedures for local hiring, and proportion of senior management in locations of significant operation from the local community”
	3. Indirect Economic Impacts	EC8 Description of infrastructure investments and services supported that provide public benefit
		EC9 Indirect economic impacts
Environmental sustainability	4. Materials	EN 1 Weight of materials used
		EN2 Percentage of materials used that are recycled
	5. Energy	EN3 Direct energy consumption broken down by primary energy source
		EN4 Indirect energy consumption broken down by primary source
		EN5 Percentage of total energy consumption met by renewable resources
		EN6 Total energy saved due to conservation and efficiency improvements
		EN7 Initiatives to provide energy-efficient products and services
		EN8 Initiatives to reduce indirect energy consumption
	6. Water	EN9 Total water withdrawal by source
		EN10 Water sources and related habitats significantly affected by withdrawal of water
		EN11 Percentage and total volume of water recycled and reused
	7. Biodiversity	EN12 Location and size of land owned, leased, or

		managed in, or adjacent to, protected areas
		EN13 Description of significant impacts of activities on protected areas
		EN14 Area of habitats protected or restored
		EN15 Programs for managing impacts on biodiversity
		EN16 Number of IUCN Red List species with habitats in areas affected by operations broken down by level of extinction risk
	8. Emissions, Effluents, and Waste	EN17 Greenhouse gas emissions
		EN18 Emissions of ozone-depleting substances
		EN19 NO <sub>x</sub> , SO <sub>x</sub> , and other significant air emissions by weight
		EN20 Total amount of waste by type and destination
		EN21 Total water discharge and quality
		EN22 Total number and volume of significant spills
		EN23 Other relevant indirect greenhouse gas emissions
		EN24 Weight of transported, imported, or exported waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII
		EN25 Water sources and related habitats significantly affected by discharges of water and runoff
	9. Products and Services	EN26 Initiatives to manage the environmental impacts of products and services and extent of impact reduction
		EN27 Percentage of products sold that is reclaimed at the end of the products' useful life by product category
		EN28 Incidents of, and fines or non-monetary sanctions for, non-compliance with applicable environmental regulations
		EN29 Significant environmental impacts of transportation used for logistical purposes

		EN30 Total environmental protection expenditures by type
Social responsibility	10. Social performance	SO1 Programs and practices for assessing and managing the impacts of operations on communities, including entering, operating and exiting
		SO2 Extent of training and risk analysis to prevent corruption
		SO3 Actions taken in response to instances of corruption
		SO4 Participation in public policy development and lobbying
		SO5 Total value of contributions to political parties or related institutions broken down by country
		SO6 Instances of legal actions for anti-competitive behaviour, anti-trust, and monopoly practices and their outcomes
	11. Product Responsibility	PR1 Procedures for improving health and safety across the life cycle of products and services
		PR2 Number and type of instances of non-compliance with regulations concerning health and safety effects of products and services
		PR3 Procedures for product and service information and labelling
		PR4 Number and type of instances of non-compliance with regulations concerning product and service information and labelling
		PR5 Procedures related to customer satisfaction, including results of surveys measuring customer satisfaction.”
		PR6 Procedures and programs for adherence to laws, standards, and voluntary codes related to marketing

		communications including advertising, promotion and sponsorship
		PR7 Number and type of instances of non-compliance with regulations concerning marketing communications including advertising, promotion and sponsorship.
		PR8 Percentage of customer data covered by the data protection procedures
		PR9 Number of substantiated complaints regarding breaches of customer privacy
Management productivity	12. Employment	LA1 Breakdown of total workforce by employment type and by region
		LA2 Total number and rate of employee turnover broken down by age group and gender
		LA3 Minimum benefits provided to full-time employees, which are not provided to temporary or part-time employees
		LA4 Percentage of employees represented by independent trade union organizations or covered by collective bargaining agreements
		LA5 Minimum notice period(s) and consultation and negotiation practices with employees and/or their representatives regarding operational changes
	13. Occupational Health and Safety	LA6 Percentage of workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs
		LA7 Rates of injury, occupational diseases, lost days, and absenteeism and number of work-related fatalities
		LA8 Education, training, counselling, prevention and risk-control programs in place for assisting workforce



		members, their families or community members affected by HIV/AIDS or other serious communicable diseases
		LA9 Elements of occupational health and safety management approach
		LA10 Health and safety topics covered in formal agreements with trade unions
	14. Training and Education	LA11 Average hours of training per year per employee broken down by employee category
		LA12 Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings
		LA13 Percentage of employees receiving regular performance and career development review
	15. Diversity and Opportunity	LA14 Composition of governance bodies' and breakdown of employees per category according to gender, age group, minority group membership, and other indicators of diversity
		LA15 Ratio of average remuneration of men and women broken down by employee category
	16. Human Rights	HR1 Percentage of significant investment agreements that include human rights clauses or that underwent human rights screening
		HR2 Percentage of major suppliers and contractors that underwent screening on human rights
		HR3 Type of employee training on policies and procedures concerning aspects of human rights relevant to operations, including number of employees trained
		HR4 Incidents of discrimination
		HR5 Incidents of violations of freedom of association and collective bargaining

		HR6 Incidents of child labour
		HR7 Incidents of forced or compulsory labour
		HR8 Procedures for complaints and grievances filed by customers, employees, and communities concerning human rights, including provisions for non-retaliation
		HR9 Percentage of security personnel trained in organization's policies or procedures regarding human rights
		HR10 Incidents involving rights of indigenous people

### 4.3 The structure of benchmarking frameworks

A framework of parts (components, dimensions, elements, themes, etc.) is an arrangement of the parts of a system that must be measured to get a clear and accurate reading of the state of that system and changes to it. A framework of aims (goals, objectives, principles, criteria, etc.) is an arrangement of the aim of each part, succinctly expressing its point, the main item or items of concern, and the level or type of performance that is sought. A combined framework of parts and aims provides a checklist of the human and environmental conditions required for sustainable development. More importantly, it enables people to:

- identify the essential parts of the system;
- avoid measuring the same part more than once;
- avoid omitting an essential part;
- highlight unavoidable gaps (so that everyone knows that a part is missing if there is no suitable indicator for it);
- ensure that an appropriate weight or value is given to each part;
- show the logic underlying the selection of parts and the weight given to each;
- measure key relationships between groups of parts;
- combine the indicators to provide measurements not just of the particular parts they represent but also of major groups of parts and of the system as a whole;

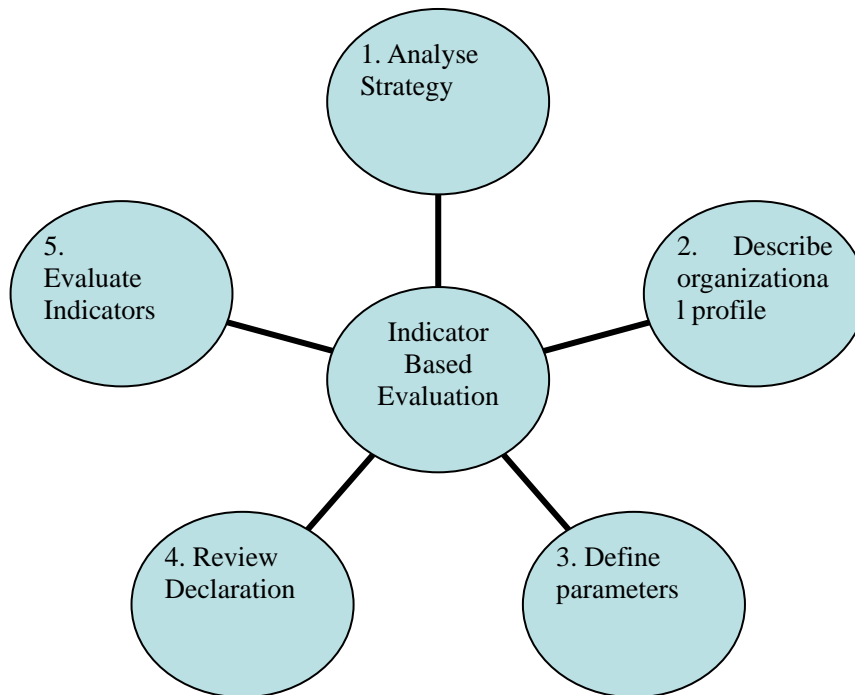
The benchmarking framework developed in this thesis is the basis of a comparative policy study that examines the use of indicator systems in corporate sustainability management. It

is an evolution from previous descriptive research, with its basis in a systems perspective and meta-analysis across multiple dimensions. The framework drew from the reviewed literature in Chapter 2 and empirical evidence to produce the key criteria for an indicator system. In particular this thesis draws from sources such as Meadows (1998); Bell & Morse (1999), Bossel (1999) and Dovers (2001) who advocate a systems approach to the development and analysis of indicators and the development of criteria for systems evaluations.

Any corporation is a complex system with ecological, social and economic dimensions to considerate, any analysis calls for a multi-disciplinary approach that acknowledges the links between business management, and human behaviour (Bowen 1996; Charles 1997). All 'dimensions' affect the corporate sustainability. There are a variety of approaches that report on the sustainability systems and take into account different dimensions. Majority of systems have focused on the ecological dimension but recent initiatives are pushing towards the development of socio-economic indicators.

This section specifies the procedure applied in the indicator based evaluation, based on the indicators developed in the chapter 3, the framework builds an evaluating process, including five flexible implementation steps:

**Figure 4.1 Evaluation steps in indicator based framework**



#### **4.4 Developing a scoring system**

The indicator developed in chapter 3 sets out 4 aspects, 16 elements and 79 operational indicators to assess the performance of the sustainability indicator systems. These indicators represent the SES outcomes - comprehensive and strategic sustainability evaluations, a functional and pragmatic structure and process, adequate representation of policy issues, and relevant to sustainability management outcomes. Each of the strategic indicators is divided into operational criteria that focus on specific elements of the system. A description of each indicator, operational indicator is provided in Chapter 3.

To assess the performance of each element a scoring system has been devised. For each element a score from 1-5 score is allocated, based on its performance from poor (1) to advanced (5). A generic key for the scoring process has been developed and is displayed below.

Criteria and stages of corporate sustainability:

**Table 4.3 Stages of the sustainable development pathway**

1. Prepare	2. Commit	3. Implement	4. Integrate	5. Champion
Minimize SD efforts, while assessing the issue, what other companies are doing, and potential opportunities	Commit to moving forward in addressing SD and chose a strategic direction for SD actions	Launch programs consistent with SD strategy	Make SD part of every day business practices	Act as a leader and champion for others within industry to act on SD

1- The lowest level of sustainability performance in relation to the element. For this score, the SES has failed to achieve or address the listed evaluation element.

2 - The company has achieved a minimal or basic level of performance. This score relates to an ad hoc, narrow or undeveloped approach against the element. It can also refer to a formative, ‘on paper’ commitment that is yet to follow through into practice.

3 - The company has achieved a sufficient level of performance in relation to the element. The company has addressed the evaluation indicator, but further development is required. There is an identified commitment to the indicator with ongoing implementation. Some limitations present.

4 – The company has achieved an advanced level of performance in relation to the indicator. The performance can be considered a best practice approach. Once scores have been obtained for each indicator they are aggregated to the operational indicator level by an averaging process.

5- The company has taken the leading role as champion for others within the industry to act on SD.

The mean of each operational indicator is plotted by the way of orientation graphs for each case study. These graphs are a useful means of identifying trends and performance within policy systems (Bossel 1999). Results are displayed for each case study under each evaluation indicator, and a summary graph of the scores is presented. Therefore, for each

case study, the performance or 'behaviour' of the indicator system can be observed. Using orientation graphs, specific areas of improvement or deficiency can be highlighted.

These scores are aggregated and graphed at the strategic indicator level to determine the overall performance of the SES. It is important to note that the scoring procedure is a subjective process that is based on a review of the published literature, grey literature, legislation, industry perspective, consultation with practitioners and empirical practice. The justification for each score is transparent and clearly stated within each case study – and open for debate. The scoring process is not designed to provide a mathematically verifiable analysis. Rather, the approach seeks to compare and scrutinise a series of complex, live, highly integrated, and value based policy processes.

The scoring method allows for a degree of flexibility in the investigation of these systems whilst providing the basis for a detailed and consistent comparative analysis. The outcomes from this scoring approach allow for analysis of the relative strengths and weaknesses of each reporting system and recommendations for the future development of each SES. It allows for the development of a systems 'map' for each SES, a display of the inter-related components and processes with each SES, and analysis of the strong and weak points.

#### **4.5 Conclusion**

This chapter described the development of the benchmarking framework and principle for evaluating corporate sustainability system. It first established contents of framework from internal stakeholders' classification. Based on this foundation, the actual principles for sustainability evaluation was established, which includes four evaluation principles with practical elements to be considered. The procedure for evaluation is based on this framework and suggests the establishment of 'good practice' for each aspect within the corporate sustainability system's context and the identification of the performance gap. In the following Chapter 5, this evaluation framework and the methodology are put to the test by applying them to evaluate Chinese companies as case study.

## **CHAPTER 5. Application to Chinese companies**

This chapter will evaluate and analyze the sustainability performance of the Chinese companies to validate the applicability of the concepts and framework developed in the previous chapter. This is done by the empirical analysis of case studies, which were carried out during a project funded by the UK Department for International Development (DFID) called state own enterprise reform and enterprise development (SOERED), mainly in the Liaoning and Sichuan Province of China. The case studies include 136 Chinese companies with covering a wide range of industry. The original aim for this research was to have a good representation of companies (SOE, SME, Joint Venture. etc.) and of industry (light, heavy, service, etc.). However, this was not feasible in the research context due to financial and time constraints. Finally selected twenty companies case study was written and included in my co-authored book “Corporate social responsibility in China”.

The CSES indicators based evaluation developed in this paper has been adopted by several development organizations (DFID, WBCSD, LEAD and GTZ) in China to assess Chinese corporations and Multinational corporations’ sustainability performance in China, Case studies in this chapter, are taken from the DFID project implemented by Institute for Environment and Development, in which I acted as research fellow to design the evaluation system, the following is the briefing introduction of the project.

CSR project in SOERED programme uses indicator system developed in this paper to evaluate the corporate sustainability. These indicators provide a universal framework for internal benchmarking comparisons, stakeholder consultation and public dialogue to build a local research framework of appropriate evaluation indicator, scoring and gap analysis method. In this chapter, we will analyze one company as example to illustrate how the evaluation system helps company to improve sustainability.

### **5.1 Background of the case studies**

From year 2000 to 2004, UK government Department for International Development (DFID) launched implementation of the State-Owned Enterprise Restructuring and Enterprise

Development (SOERED) Project in China. Case studies in this paper are part of the CSR evaluation during this project.

The project was based in two Provinces of China, Liaoning and Sichuan, and had two components, restructuring State-Owned Enterprises (SOEs) and Enterprise Development. As program evaluation, I joined CSR team to evaluate corporate social responsibility within this project.

The Province of Liaoning is in the North-East of China, while Sichuan is in the south-central part of the country. In each of the chosen Provinces, three municipalities were chosen as beneficiaries. In Sichuan these were Mianyang, Chengdu (the provincial capital) and Leshan. In Liaoning they were Shenyang (the capital), Anshan and Dalian. All cases in this paper are companies from these six cities.

The first (SOE Restructuring) component aimed to turn round a number of loss-making SOEs in each Province through consultancy advice and the preparation and implementation of a restructuring plan. It was envisaged that in most cases some reduction in the labour force would be necessary, and that the resultant social problems could be addressed through absorption by the small (private) enterprise sector. The second, Enterprise Development component offered consultancy advice and loan guarantees to Small and Medium Enterprises (SMEs). Social responsibility and HSE concerns were incorporated into the Project as cross-cutting issues.

In each municipality three new institutions were created: a Restructuring Agency to identify suitable SOEs and deliver restructuring plans; a Business Advisory Centre (or Enterprise Development and Advisory Centre) to provide advice to small and medium enterprises; and a Loan Guarantee Companies to provide partial guarantees to Banks for lending to SMEs. For evaluation of the project, Case studies included the companies that are the Participants of these institutions.

The purpose of this case study is two aspects. First, this investigation is intended to help the relevant companies that participated in our study to benchmark their sustainability management against similar companies. Second, this study was created to contribute to the SOERED project for evaluation of the corporate social responsibility. To fulfil its purpose, the case study addresses question on how the participating company in SOERED project improve their business performance after applying SES to benchmark their performance.



Our investigation aims to investigate 180 companies from the SOERED project. The data were collected using a tracer-record method. Each of the relevant managers from the participating companies received a flat envelope that included a cover letter, and self-evaluation questionnaire. To ensure the survey was more appealing visually, thereby helping to increase the response rates, the cover letter was claimed that this research is part of SOERED project and all data will keep confidential and the letter also containing SOERED and Institute logos. Space was provided for additional comments at the end of the survey.

Two provincial project offices were used to administer the survey. Reporting managers had the option of completing the hard-copy mail survey and returning it in the self-addressed return postage envelope. Second, reporting managers could complete the survey on-line using a website developed for this study. These responses were automatically saved in a database. The website also contained a downloadable survey in MS Word, providing respondents with a third option of completing the survey on their computer and returning it to us by email. Alternatively, reporting managers could print the MS Word, complete it by hand, and mail us the hard copy.

Offering respondents the option to complete the on-line survey was desirable for several reasons. First, since the on-line responses were compiled directly into an electronic database, the Internet survey reduced the resources required for data entry and minimized data entry errors. Also, because reporting managers were mailed only one survey, there was a higher probability that the questionnaire might be misplaced. Finally, we believed that the Internet survey would appeal to a portion of subjects who might prefer to respond to an on-line survey rather than a traditional mail-based survey.

We mailed surveys in May 2004, and we ensured reporting managers that their individual responses would be kept confidential. Non-responding reporting managers were called by provincial office requesting them to complete the survey. Each time, we contained a web address and guide to access the on-line survey. Finally, a total of 136 companies (name list of the companies at the website: [www.csr.ied.cn](http://www.csr.ied.cn)) who met our selection criteria completed our survey. Approximately three quarters of respondents completed the mail survey and about one-quarter completed the on-line survey.

## 5.2 Self-evaluation by benchmarking framework

To answer this question, we asked the participating companies to score their own performance against benchmarking framework. We take one company (Yongfeng paper mill) as example to describe the procedure of implementation on self-evaluation, because all the participating companies have the same procedure to do the self-evaluation that was consulted by SOERED project.

### 5.2.1 Company profile

Yongfeng Paper Mill is a paper production factory, it is located at Muchuan county in Sichuan province, due to special geographical location, and the paper raw material is bamboo. Muchuan now has a bamboo forest of 853 million m<sup>2</sup>, among which, the material area of bamboo timber is 300 million m<sup>2</sup>. The 200 million m<sup>2</sup> rapid growth tree base under construction ensures the material supply of the company. Presently, Yongfeng has formed a bamboo forest industrial chain and is a large enterprise with scale. It has a production capacity of 60,000 tons of pulp and 70,000 tons of office paper. It has a market occupation rate of 10% in the nation.

The Company maintains its image as a leader in environmental management and community engagement, its case study report is available as part of its corporate profile on its website and provides considerable detail with respect to its environmental and energy policies and projects.

### 5.2.2 The research process

A number of interviews with key personnel in senior management level, environmental management, and operations management, as well as with employees were conducted. The purpose of the interviews was to:

- understand how the Company plans and executes its sustainability management initiatives
- compare this approach with the methodology advocated in this Thesis.
- analyse the gaps, if any, and modify the approach as needed.

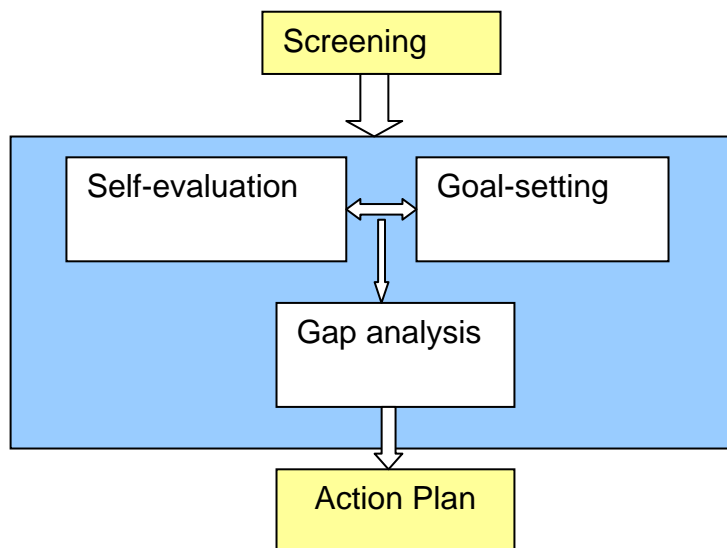
The outcome of the research revealed that Yongfeng Paper Mill is at an advanced stage with respect to other corporations' environmental programs and should be regarded as 'best

practice'. As a consequence the most appropriate approach to this case study turned out to be a comparative analysis consisting of:

- Step by step analysis of the proposed planning and execution methodology with the Company's practices.
- Identification of differences (if any) and gaps.
- Conclusions with respect to the outcomes.
- suggestions for improvements

The evaluation process is based on a simple five-step implementation procedure which developed by GEMI<sup>10</sup>, depicted in Figure 5.1. These five steps correspond to the five major activities that the tool supports:

**Figure 5.1 Implementation procedure**



(Source: GEMI 2004)

• **Visioning.** This step is the starting point for any application, and enables you to identify company context, key issues, and initial focus. This information will influence recommendations regarding potential goals and actions.

The following evaluation activity is the heart of the tool, and consists of two steps that can

<sup>10</sup> [www.gemi.org](http://www.gemi.org)

be performed iteratively.

**Self-Evaluation and Goal-Setting** enables to apply a set of evaluation templates that characterize Corporate SD status for specified elements and enable corporation to set goals for specified sustainable development elements.

**Gap Analysis** enables corporation at any point during the evaluation, to compare status against goals for specified SD elements, and thus identify gaps.

The following two steps are the furthering improvement process, through these steps, corporate sustainability performance can be improved continually.

**Integration** communicates to all levels of the organization in order to obtain support and commitment for sustainable development. Enable organization to subscribe and by which actions for change will be judged.

**Action Planning** proposes actions that will address the gaps identified above, and enables you to print action planning reports for specified SD elements.

### 5.2.3 Self-evaluation and goal setting

In assessing the Yongfeng Paper mill's sustainability performance, the following results were achieved through implementation of the above steps. Reporting manager from the participating companies rated their own company's performance and set the goal they like to achieve based on their company's development strategy and specific circumstance. The five scores (1-5) standard is explained in section 4.4 and the operational indicator and elements have been defined in Section 4.3.

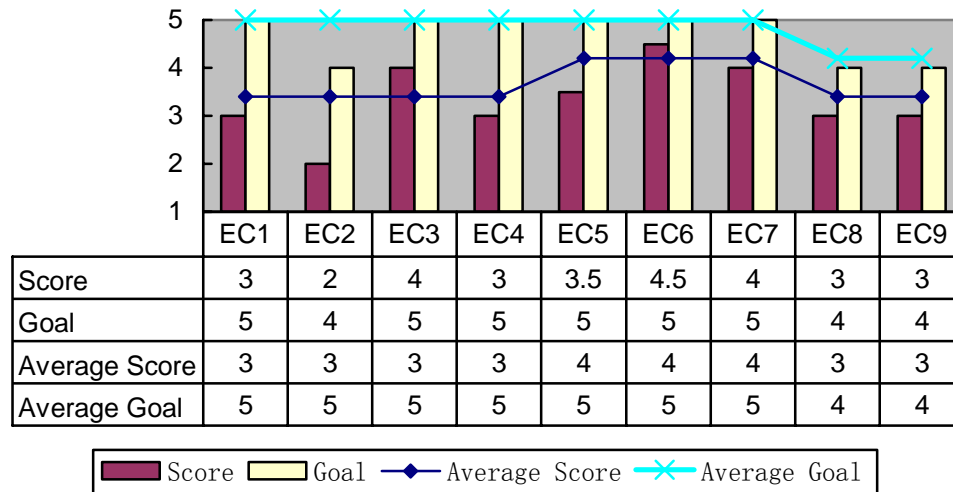
The benchmarks results are used to calculate performance gaps. These performance gaps will be analyzed through comparing current score and set goal. The next section will give a specific description on different scores and its planning to the upper level performance.

The Yongfeng paper mill's evaluations are scored against the indicator framework in Table 5.2 below and each of the sustainability aspects (Economic, Environmental, Social and Management) was summarized by graph in Figure 5.2 to figure 5.6.

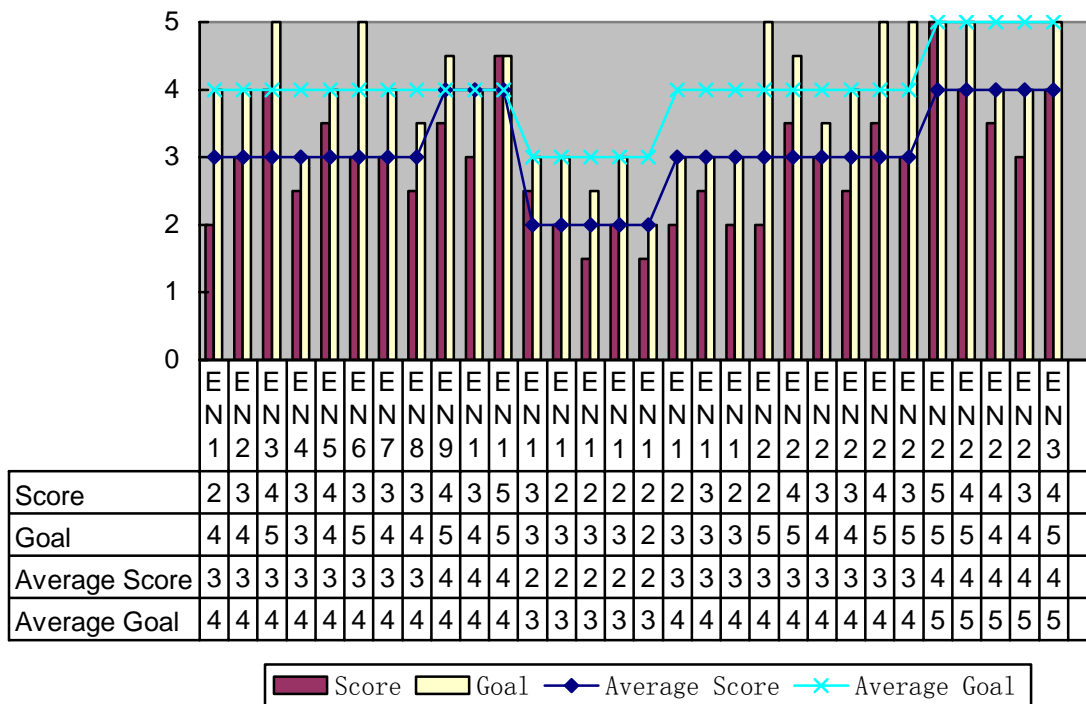
In terms of economic performance, the performance results in Figure 5.2 obtains an above average score (3) for understanding the focus of economic profitability within a broader societal notion of sustainability. The economic aspects contain three elements including

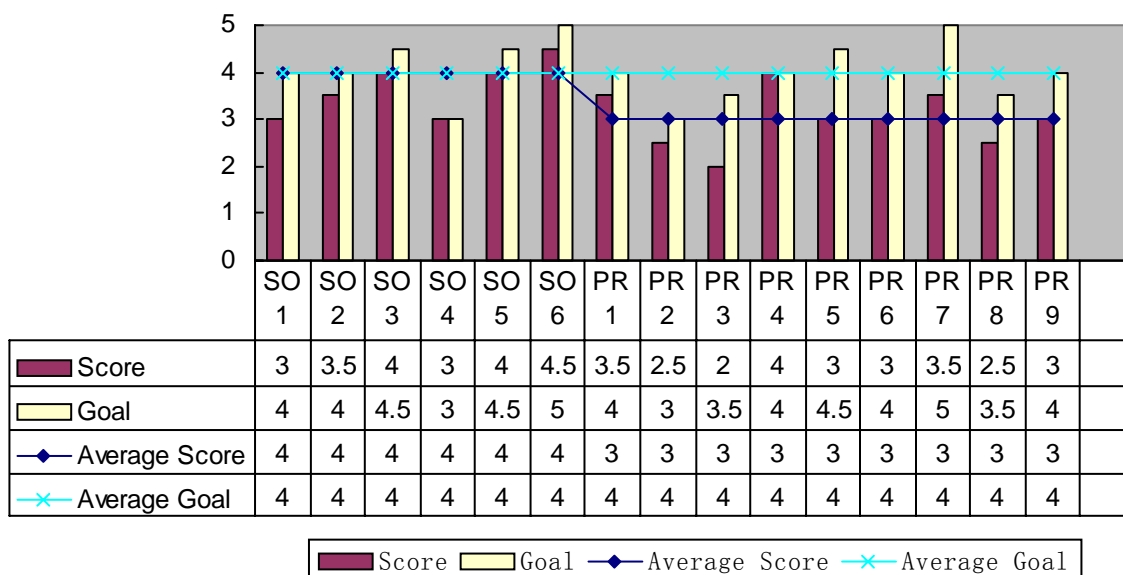
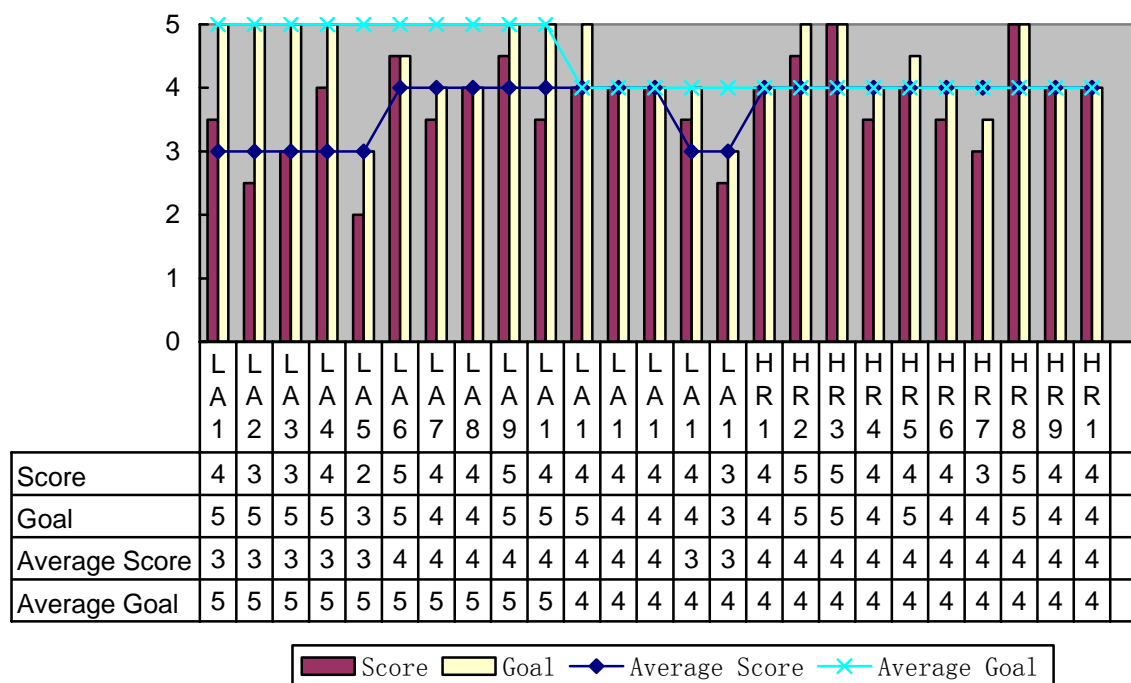
economic development, market presence and indirect economic impacts. In terms of contributing to a broader notion of sustainability, Yongfeng paper mill's results accorded with his position within the local economic development.

**Figure 5.2 Aggregation of the economic operational indicators**



**Figure 5.3 Aggregation of the environment operational indicators**



**Figure 5.4 Aggregation of the social operational indicators****Figure 5.5 Aggregation of the workplace operational indicators**

**Table 5.1 The summary of the scoring result by Yongfeng Paper Mill**

Aspects	Element	Score	Goal	The Gap analysis between current status and goals															
Economic Profitability	Economic Performance	3	5	<p>The chart displays the following data points:</p> <table><tr><th>Dimension</th><th>Score (Blue Diamond)</th><th>Goal (Pink Square)</th></tr><tr><td>Natural</td><td>18</td><td>25</td></tr><tr><td>Economic</td><td>10</td><td>20</td></tr><tr><td>Social</td><td>10</td><td>10</td></tr><tr><td>Worker</td><td>10</td><td>10</td></tr></table> <p>Legend: <span style="color: blue;">◆</span> Score <span style="color: pink;">■</span> Goal</p> <p>The company's current performance has already attempted the identification of those sustainability issues that are pertinent to their organisation and its stakeholders. The goal is to setup a management framework for sustainability in place and to use the management framework to generate its useful information. It may also be that integration with the mainstream business planning process.</p>	Dimension	Score (Blue Diamond)	Goal (Pink Square)	Natural	18	25	Economic	10	20	Social	10	10	Worker	10	10
	Dimension	Score (Blue Diamond)	Goal (Pink Square)																
	Natural	18	25																
Economic	10	20																	
Social	10	10																	
Worker	10	10																	
Market Presence	4	5																	
Indirect Economic Impacts	3	4																	
Natural capitals Sustainability	Materials	3	4																
	Energy	3	4																
	Water	4	4																
	Biodiversity	2	3																
	Emissions, Effluents, and Waste"	3	4																
	Products and Services	4	5																
Social Responsibility	Social performance	4	4																
	Product Responsibility	3	4																
Worker's Productivity	Employment	3	5																
	Occupational Health and Safety	4	5																
	Training and Education	4	4																
	Diversity and Opportunity	3	4																
	Human Rights	4	4																

### 5.3 Gap analysis

These score results are not intended to be accurate portrayals of any organisation. They merely suggest what an organisation achieving a particular score using the Sustainability indicator system might look like. The overall score gives a broad indication of performance. The result is useful to reflect on the relative scores for each section, which reflects a phase in the benchmarking framework – this will highlight any particular areas of strength and where there is room for improvement.

Rating scores and what they indicate about the companies concerned:

Organisational score: 16 – 30

An organisation scoring less than 30 is likely to have little integration of sustainability issues into organisational processes and decision-making. They probably have little awareness of what it means for them to be sustainable and they will not have identified and evaluated the full range of consequences associated with their actions. They are unlikely to have engaged in any meaningful stakeholder dialogue.

Organisational Score: 31 - 44

An organisation scoring between 31-44 may well have identified some elements within their organisation that have the capacity to help them integrate sustainability issues into organisational decision making and promote such issues in the wider community. Such an organisation may have undertaken some limited sustainability related initiatives, but as yet they are content to cope with problems as they appear, rather than choose a more integrated approach. It is likely that they have little understanding of the role of sustainability issues in relation to the continued long-term health of their company.

Organisational Score: 45 - 58

An organisation scoring between 45-58 has already attempted the identification of those sustainability issues that are pertinent to their organisation and its stakeholders. They have the building blocks of management framework in place, and probably have some good in-house technical expertise. They have engaged in some systematic stakeholder dialogue.



### Organisational Score: 59 – 72

An organisation scoring between 59-72 already has a fledgling management framework for sustainability in place. It may be that this management framework has not been in place long and is still generating its first useful information. It may also be that integration with the mainstream business planning process and / or other operational level systems has not yet taken place.

### Organisational Score: 73 - 80

An organisation scoring 73-80 is likely already to be in amongst the foremost proponents of sustainability and is also likely to be actively promoting sustainability issues beyond the organisational 'footprint'. The organisation will be enjoying a positive relationship with a range of stakeholders. The organisation is focused on the optimisation of principles, values and processes.

From Yongfeng case, we can see the company's current performance has already attempted the identification of those sustainability issues that are pertinent to their organisation and its stakeholders. They have the building blocks of management framework in place, and probably have some good in-house technical expertise. They have engaged in some systematic stakeholder dialogue.

The goal is to setup a management framework for sustainability in place. It may be that this management framework has not been in place long but can generating its useful information. It may also be that integration with the mainstream business planning process.

On the basis of the evaluation framework, the internal case studies in Chapter 5 are analyzed and the results are presented via a series of figures. Results are displayed for answering the research questions in the real application. For the external case study in chapter 7, the performance of the indicator system can be observed, including external stakeholders' dialogue and comparison with its own performing data at different time.

To compare the performance of individual case study, a series of matrices have been developed to examine the common structures, processes and application issues as identified in the aims. In addition, to quantitatively rank and visualise the case study results, an experimental tool, the SD Planer was adapted and extended (GEMI). This tool can establish baseline performance, assess opportunities, set goals, develop action plans and evaluate

progress towards business sustainable development objectives. The cases can be ranked to according to performance in their individual scores from the evaluation framework, or the aggregates of the strategic criteria, including a total aggregate performance based on four strategic criteria. Although caution must be exercised in direct comparison of diverse cases, this approach was deemed useful to examine the range of outcomes and identify ‘best practice’ systems. The method allows for a visually innovative method of comparing the results from the case studies and facilitates discussion on comparative performance and improvement.

#### **5.4 Empirical evidences**

According the gap between the current performance and goal, we provide an integrated action plan through checking the database for external evaluation system for further improvement in the company.

After authorized by board of directors, this action plan was implemented by company, from the evaluation paper of the SOERED project we can find the following assessment about this case study project.

*“Yongfeng Paper Mill is a good example of a restructured enterprise that has made very good progress in integrating corporate sustainability controlling into its day-to-day activities. It has seen clear benefits from this in terms of not just its wider stakeholder relations, but also in terms of its current and expected future sustainability as a business. It has made huge improvements in water purification by investing in new machinery. It has also encouraged local peasant farmers to grow bamboo for the mill. Locally grown bamboo reduces transportation costs and cultivation improves the soil by cutting soil erosion. The farmers’ incomes rise and so the local economy also benefits. Tax revenues from individuals and the company now amount to about one third of the total tax revenues to the county. Corporate sustainability policy compliance improves the company’s profitability and in turn the company contributes more to the local economy.”<sup>11</sup>*

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<sup>11</sup> DFID <http://www.dfid.gov.uk/aboutdfid/performance/files/ev658report.pdf>

## 5.5 Conclusion

CSES is designed for use by corporate sustainability benchmarking. It is optimized for use by internal management team, but it can also be used by stakeholder group on behalf of the external auditor. Because of the broad scope of the aspects, it is need to collaboration with representatives from several functional areas, including strategic planning, marketing, communications, human resources, operations, distribution, research and development, finance, and environmental, health and safety. There are several possible methods to input data:

- information collection can be completed through inputting by all of the relevant assessors direct responses to complete the online evaluation questions via internet. This can also be accomplished through a series of interviews with operational specialists.
- The reporting manager can print out the online evaluation forms to paper copies for the various sustainability indicators, distribute these to appropriate specialists along with relevant guidance, and then compile the results.
- The reporting manager can invite the required specialists to complete the evaluations online. This should be done by multi-users, since CSES can support integration of distributed data from multiple sources.

The development stage of corporate sustainability is evaluated by the reporting manager. The purpose of this self-evaluation form is to provide user a holistic process with considering all indicator performance. It may be that corporation has implemented most of the practices associated with a given stage and is ready to move forward, even though a few gaps remain. CSES also allows company to define corporate performance status in terms of the percentage of practices implemented. At the same time, company can set their target goals in the same form, which can subsequently be compared to the self-evaluation results in order to determine whether the organization is meeting its stated goals and recommend appropriate actions.

## **CHAPTER 6. A narrative-based evaluation**

### **6.1 Introduction**

Although the indicator-based evaluation system is very useful in benchmarking and evaluating corporate sustainability in term of improvement on management, the experiences in the SOERED case studies showed that the indicator benchmarking framework sometimes was not suitable for larger companies to help them to improve its relationship with stakeholders. Instead, the demanding survey shows that the large company in China, particular the multi-national companies are keen to work out a narrative-based framework that can suggest how the further stakeholder engagement should be implemented based on the evaluation results.

For application the concept of sustainability into corporate management, rather than checklists of indicators or fragmented methodologies, new sustainability evaluation frameworks are required that, in a flexible and participatory manner, provide the theoretical and practical advices to:

- (a) Help business decision makers to identify the main issues related to sustainability in specific case studies from a robust and interdisciplinary theoretical perspective.
- (b) Assist stakeholders in the selection and evaluation of case-specific indicators to evaluate the limitations and potentials of current practices and alternatives.
- (c) Assist corporate decision makers and corporate stakeholders in the integration of the information supplied by the indicators and opinions in support of the design of alternatives and the associated decision making and development processes.

A structure of the framework must be made as to the content that should be covered in an evaluation in order to ensure a balanced and reasonable presentation of the corporate performance. Identification of stakeholders and consideration of their needs is of central importance to the process of defining evaluation content since the stakeholders who are expected to use the evaluation will become the reference point for many decisions regarding the preparation of the report.

Stakeholders are defined broadly as those groups or individuals that can reasonably be expected to be significantly affected by the business activities, products and/or services from inside of the corporation; and whose actions and response from outside of the corporation can reasonably be expected to affect the ability of the corporation to successfully implement its strategies and achieve its objectives.

From the stakeholder definitions above, this thesis builds upon two methodological frameworks, which include the indicator-based framework for the corporate sustainability internal benchmarking and the opinion-based framework for external stakeholder engagement.

## **6.2 Narrative-based evaluation approach**

In order to provide the advice based on the evaluation results, a narrative-based approach was developed for benchmarking and further improving corporate sustainable performance. This approach uses the concept of the sustainability indicator in this research and internet technology to develop a practical tool that can be used widely by practitioners in the corporation. As discussed in the last section, the benefit of sustainability benchmarking is so evident that responsive action plan could be significant in the whole management improvement circle.

The narrative evaluation approach was developed by author with technical assistance by IED IT team and adopted the software information from GEMI SD Planner. The aim is to develop a database for corporate social responsibility monitoring. The initial version has been tested by more than 60 practitioners comes from Liaoning and Sichuan Provinces. The initial website still has been further developed to design software for business application.

Consultancy advice was developed to assist sustainability management practitioners to consider the current performance against goals in four aspects as identified in this research and benchmark the four aspects to analysis the gap between goals and current position to enable feasible working plans and decisions to be made, as well as relative management arrangement. There are a number of specific capabilities that narrative-based approach provides to help companies get started on their journey toward sustainable development.

- Establish a series of options for working plan of sustainable business practices. The tool synthesizes a broad range of generally accepted Sustainable development concepts into seven out of sixteen major indicators. (See Table 3.1) This provides a comprehensive basis for companies to select the desired scope and focus of their own sustainable development efforts.
- Enable company evaluation of current status. The tool provides a straightforward, structured approach toward evaluation of a company's current status in seven aspects with broad stakeholder coverage. For each element, a company can assess its position relative to a five-stage framework of evolution. This will help companies to set context and formulate their sustainability goals.
- Enable formulation of goals and gap analysis. The tool provides a flexible means for establishing company-specific goals with regard to any of the seven Sustainability elements. It also enables the identification of gaps between the company's current and desired position, which provides the basis for developing action plans.
- Clarify the potential business value of Sustainability. Depending on the chosen emphasis, the consultancy advice will help companies to understand the potential value associated with particular sustainability initiatives and thence formulate a business case for action.
- Provide guidance and support development of an action plan. For each selected element of Sustainability aspects, the tool assists companies in developing an agenda for action according the companies current position to take the recommending appropriate actions that can help to achieve the company's goals.

The intent of the approach is to provide the above capabilities in a manner that is generic, yet highly customizable to the needs of an individual company. In addition, this approach strives for clarity and simplicity, so that it is intuitive and easy to use with minimal training. The graphical user interface has been designed accordingly.

However, it should be noted that the approach has some important limitations. It is designed to provide action suggestion for companies to improve their sustainability performance, but it does not attempt to support decision-making about what course of action is best. There are many trade-offs involved in balancing the expectations of stakeholders against the business objectives and constraints of a particular company. Similarly, there are many potential synergies available in pursuing multiple Sustainable development objectives that create

“win-win” solutions for both the company and its stakeholders.

The seven stakeholder elements out of sixteen indicators are the following:

**Table 6.1 Stakeholder elements and operational definitions**

Stakeholders Elements	Operational Definitions
1. Employee	Protecting and preserving the fundamental rights of employees, promoting positive employee treatment, and contributing to employee quality of life.
2. Civil society	Working with public and private institutions to improve educational, cultural, and socio-economic well-being in the communities in which the company operates and in society at large.
3. Human rights issues	Supporting the protection of human rights with the company's sphere of influence, and promoting honesty, integrity and fairness in all aspects of doing business.
4. Shareholders	Creating value for the company's shareholders. Includes securing a competitive return on investment, protecting the company's assets, and enhancing the company's reputation and brand image through integration of sustainable development thinking into business practices.
5. Community Economic Development	Building capacity for economic development in the communities, regions and countries in which the company operates or would like to operate.
6. Environmental issues	Minimizing and striving to eliminate the adverse environmental impacts associated with operations, products, and services.
7. Natural Resource	Promoting the sustainable use of renewable natural resources and conservation and sustainable use of non-renewable natural

Narrative-based evaluation system lays out five stages that companies may take in moving towards their Sustainability goals. Five stages (1-5) from lower level to upper level are indicated in Table 6.2.

**Table 6.2 Five stages towards corporate sustainability**

Stages	Behaviour	Objective / Result
1. Defensive	Deny practices, outcomes, responsibility	Defend against attacks on reputation
2. Compliant	Adopt a compliant approach for doing biz	Reduce reputation & litigation risks
3. Managerial	Embed SR in core management processes	Strive for long term development
4. Strategic	Integrate SR into core business strategies	Enhance core competitiveness
5. Civil	Promote broad participation in SR	Achieve LT economic / social value

(Source: Simon Zadek 2001)

Although these stages are intended to represent increasingly sophisticated approaches, it does not follow that companies should necessarily strive for the “highest” stage. Companies need to determine which stage will deliver the most business value at a given time. The characteristics of how companies within each stage approach SD can be summarized as follows:

### **1. Defensive**

When companies first collide with emerging sustainability agendas, we hear protests that the ‘business of business is business’, with some limited acknowledgement of wider society through traditional channels like charitable giving. The main activities are to minimize sustainable development efforts, while assessing the issue, what other companies are doing, and potential opportunities to comply, avoid surprises, and prepare for next steps. Track issues and respond to external questions or challenges.

- PR and legal departments play a major, defensive role.
- Stakeholder engagement is mainly interpreted as philanthropy.
- Relations with government are seen in terms of compliance with legislation and paying taxes.
- No business case is perceived for going beyond compliance.
- The key drivers are activism, the media and government.

### **2. Compliant**

Some companies begin to move ‘beyond compliance’. Sustainable development issues are increasingly acknowledged as both legitimate and requiring constructive responses. The emphasis here is largely on measuring and managing direct operational impacts. The main activities are to commit to moving forward in addressing SD and chose a strategic direction for their SD actions to improve stakeholder relationships and explore the SD territory and develop a strategy, plan actions, and pilot initiatives intended to realize business value.

- The scope of sustainability widens though it is still seen primarily as public relations.
- Stakeholder ‘engagement’ is more active, but still often one-way.



- Relations with government still largely focus on taxes, compliance and lobbying.
- Voluntary industry standards evolve, often independently of governments.
- The business case mainly focuses on risk management and eco-efficiency.
- Corporate peer pressure now emerges as a key driver.

### **3. Managerial**

At this stage, Sustainability managing experts take centre role, with CEO and board members joined major events. The main activities are to launch programs consistent with their SD strategy to reduce adverse impacts and realize business value and incorporate SD issues as an extension of HSE management.

- Stakeholder engagement evolves into a two-way dialog with wider society, including a range of non-traditional stakeholders.
- There are closer working relationships with government, for example through tri-sector or public-private partnerships.
- The business case now focuses on risk management, reputation building and the co-evolution of solutions.
- The key drivers are civil society, some parts of government and leading businesses, with much of the media beginning to lose interest.

### **4. Strategic**

In this stage, the issues are experienced as increasingly strategic, requiring integrated responses across companies and value chains. But as the issues go mainstream and urgent action is required, tough dilemmas emerge and trade-offs have to be made between competing priorities. Even leading companies may get trapped, oscillating back and forth between business-as-usual and experiments with more radical strategies. The main activities are to make SD part of every day business processes to enhance quality of life, and create a sustainable enterprise and innovate, learn, and integrate SD into business processes.

- Top management and boards are now actively involved.
- The company engages with civil society and governments in progressive alliances working towards common objectives.
- The focus is on embedding sustainable goals in all business processes, starting with

product or service development.

- The business case becomes more strategic as businesses begin to connect the dots between long-term corporate objectives and wider societal challenges.
- The drivers are many and various, including growing interest from the financial sector.
- But companies pushing the envelope still often find that the drivers are inadequate in key areas.

## **5. Civil**

The previous four stages are completed procedure for many companies. However, with the challenges within the business world, it may not be enough simply to do more of the same. Champion in the sustainability management will show a trend towards new era. The main activities are to act as a leader and champion for others within industry to act on SD to Influence industry to act more sustainable and engage in external partnerships, external advocacy, and public policy development. The focus needs to shift to systemic change, addressing future markets, market frameworks and business models.

- New players come to the table, including ‘change agents’ like inventors, entrepreneurs, venture capitalists and investment bankers.
- Progressive alliances target system change, focusing both on governance and markets.
- CR moves beyond products or services to re-examine business models.
- The business case is often negative, in the sense that there may be a ‘first mover disadvantage’, at least in the short term.

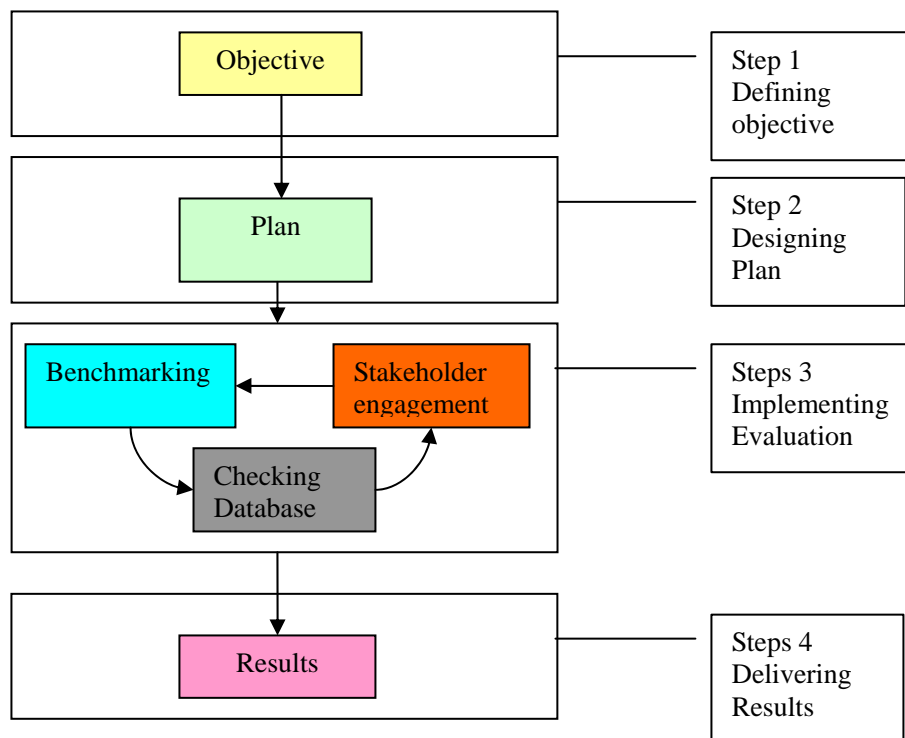
### **6.3 Procedure for implementation**

The evaluation framework provides a means of comparison between SES and presents an analysis of reporting approaches across several jurisdictions. The aim of the evaluation framework is to examine the underlying processes that make sustainability indicator systems effective. This includes the technical aspects of sustainability evaluation, but also the identified aims of indicator systems to improve policy dialogue, communicate findings and orientate management towards sustainability outcomes. The systems approach taken by the evaluation framework covers all the components of an effective indicator system as applied to corporate sustainability management.

The evaluation framework uses a process of hierarchical sub division to break down the broad indicator into specific, operational indicator. In this way, the evaluation framework aims to provide a link from the strategic sustainability dimensions through to the operational indicator. The performance of the strategic level component can be described by the aggregated performance of the lower level sub components.

For each of the lowest level indicator a simple scoring method has been designed to measure the performance of each case. Each score is then aggregated and averaged for the operational indicator and plotted on the orientation graphs as the basis of discussion. For each case study scoring will identify and assess the sustainability performance against the framework and highlight the strong and weak points. In this evaluation, I designed a general framework to implement evaluation and the process used to score them is given as below.

**Figure 6.1 General procedures in narrative evaluation**



Sustainability evaluation system builds a cyclical improvement and review process, including four flexible implementation steps:

**1. Defining Objective;**

- To figure out the corporate sustainable development mission, vision and operating principles and a high-level strategy that supports them, and to revisit them periodically.
- To define the key sustainability issues for organisation's licence to operate and its future direction and its training and development requirements.
- To identify corporate stakeholders and indicators related with business operations.

**2. Designing Plan;**

- To ascertain the corporate current sustainability performance, legal requirements and voluntary commitments.
- To prioritise the organisation's key sustainability issues.
- To develop plans to deliver the evaluation on its key sustainability issues.
- To formulate evaluation approaches with defined objectives, targets and responsibilities.

**3. Implementing evaluation;**

- To benchmark the selected indicators and assess its current performance and choose the company current stage based on five stage framework indicated in last section
- To compare current performance with setting goals and find which action plan should be taken at this stage gap.
- Stakeholder engagement according the action plan that feedback through evaluation by data analysis.

**4. Delivering results and publish report**

- To delivery the evaluation results against stated values, strategies, performance objectives and targets.
- To engage with internal and external stakeholders via reporting and assurance, and by incorporating feedback into effective strategic and tactical reviews culminating in appropriate and timely change.

Companies may enter and move through the steps at different speeds and give different steps different emphasis depending on their individual circumstances, the availability of resources and the level of maturity of their sustainable development policies, strategies and programmes. Many of the activities and outcomes called for in the phases that evaluation results provided may already be in-hand as a result of existing business management practices and systems.

The approach may be used in whole or in part:

- to integrate existing corporate management systems, building on existing approaches
- to establish a stand-alone evaluation system as guidance to deepen and broaden existing management practice without the formal structure of a management system.

In order to ensure compatibility with existing practice, the framework is structured on approaches widespread in formal and informal management systems.

The 'Plan, Do, Check, Act' model (see figure 6.2) that underpins the evaluation system is familiar to many organisations and has the benefit of being both practical and effectiveness in delivering improved corporate performance. Organisations can improve their performance by using this system:

- to set ambitious yet achievable targets
- to build on existing management systems and approaches or as a consultancy advice for managing sustainability issues in an organisation.

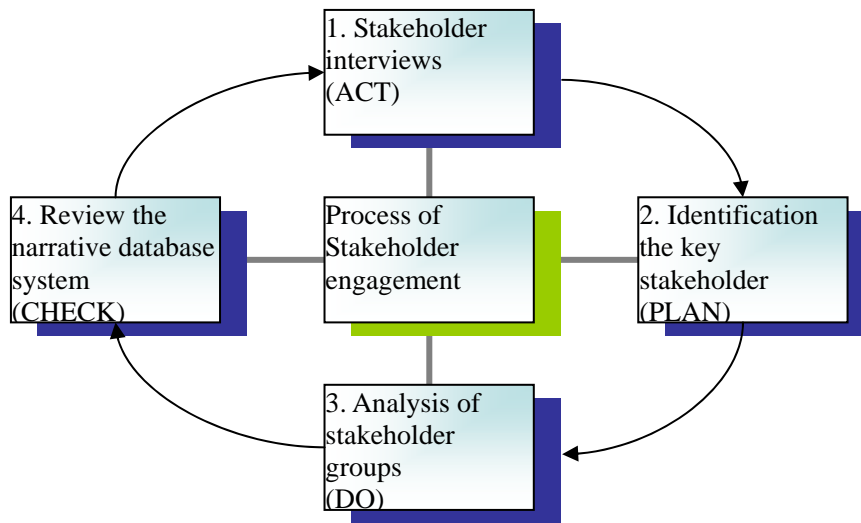
For some corporations the priority may be to embed sustainability into their core processes and decision-making. The planning and delivery phases of the evaluation framework would be a good place to start in these circumstances.

The indicator based framework is an attempt to translate the general principles of sustainability into operational definitions and practices. This framework is aimed at evaluating dynamic corporate system by defined indicators. It promotes a systemic, participatory, interdisciplinary, and flexible evaluation process, adaptable to different levels of data availability and corporate management resources.

The evaluation cycle process supported by stakeholder approaches together with the existing management system, the evaluation results provide the input for the further development of

sustainability management system, which – through a reviewing process – is then developed into an operational one. The initial vision and conceptual system will then continually be refined through feedback, benchmarking, and evaluation. This concept corresponds with the above described cyclical process.

**Figure 6.2 Evaluation steps in stakeholder engagement**



(Source: based on Deming PDCA circle)

## 6.4 Conclusion

Evaluation by external stakeholder investigation can be seen as a spirit of continuous improvement. It will not be done only once, as objectives will change as well as indicators of sustainable development's requirements and standards. However, stakeholders approach must take place at a rapid pace and it can occur at any point through the corporate lifespan. In order to sustain the corporation, the development process must become more considerate towards sustainability ideals. If corporate sustainability is to be improved, corporate sustainability action advice need to be set to measure progress between the targeting goals and actual performance.

The consultancy advice combines economic, social and environmental improvement advice into a composite index system for corporate sustainability evaluation. This approach was developed to fill the gap between existing management system and the increasing demand for sustainable business. The consultancy advice of the stakeholder evaluation system can be

used as a foundation for setting benchmarks towards corporate citizenship.

The suggested actions are also based on the principles and methodology of the sustainability indicators. It is a sustainability benchmarking tool developed to help promote corporate stakeholder engagement. Online database, whilst is easy to use, is also useful as a means of evaluating corporate sustainability performance, on one hand, helps to simplify the evaluation process.

A stakeholder approach to evaluate corporate sustainability would challenge the idea that there is a separate world where “business is business” and where the fundamental principles, self-interest, unfettered competition and the maximizing of shareholder wealth, have already been discovered.

This approach would encourage researchers to challenge the language and metaphors of existing theories of business and economics. It would challenge the accepted laws and truths about business and to abandon the search for an overarching ‘true’ paradigm of business. Rather, sustainability practitioner should expect a multitude of theories and frameworks that describe different approaches and different aspects of business. There will still be good and bad theories of business strategy, but the value of the theory will depend on its ability to help managers make sense of their world, rather on the basis of theoretical elegance.

What would pragmatism mean for a stakeholder approach? First, it would mean the end of separate streams of business ethics and business strategy research. Second, it would mean an end to the search for normative or foundational roots for stakeholder theory. Third, it would mean abandoning the search for absolute object definitions of such things such as stakeholder legitimacy. These issues would depend on the question at hand and on the circumstances under consideration. The stakeholder approach consists of a collection of interacting, reinforcing and contradicting theories of business strategy. Each theory would be based on concrete studies of real business case studies.

This is not to say that we need to abandon the idea of general principles for the sake of contingent theories. At any point in time there will always be theories, based on specific

examples, who's message holds true for a great many businesses and managers. These will still be general principles of business; indeed the idea that businesses should be managed in the interests of stakeholders is one of those ideas. However these principles will, over time, be continuously under review and will eventually be replaced by a description that are more useful.

As outlined above there are theoretical, epistemological and research challenges for a stakeholder approach to sustainability management. I believe that these challenges should be met by turning our faces towards practitioners and the development of a set of narratives that illustrate the myriad ways of creating value for stakeholders.



## **CHAPTER 7. Application to multi-national companies in China**

The empirical results of this research are summarized by the CSES implementation and evaluation by stakeholder engagement programs for corporations in China. Furthermore the program participants were monitored over the period of the program and feedback were gathered on the stakeholder engagement program. A comparison was also undertaken between businesses in the two programs. Furthermore the level of sustainability performance uptake within four sectors of CSES was estimated from the application of a sustainability evaluation, which measures awareness, management and implementation of CSES. The evaluation indicates the success of benchmarking and stakeholder programs to trigger and sustain sustainability performance in corporations. The output of this research may be used to make recommendations to corporations and their stakeholders on how they can better use performance indicators and benchmarking as a policy, as well as an application tool for the dissemination of sustainability evaluation system.

There is an increasingly recognition that multi-national companies in China must learn how to assess and control corporate risk associated with environmental behaviour, move beyond mere compliance with government environmental and other regulations, to improve their integrated corporate governance. If companies do not accept and respond to the trends driving corporate accountability and responsibility for sound sustainable performance, they will find themselves losing market share, access to capital, and the goodwill needed to operate in any society.

This chapter presents and discusses the empirical results of the case studies. It takes a narrative evaluation through stakeholder engagement as an example includes a description of the participating businesses and the implementation results through analysing a case study in BP China to explore why stakeholder engagement is critical to corporate sustainability improvement. This is done on the basis of results for the framework developed in chapter 6. It also contains lessons learnt in conducting the internal benchmarking program.

### **7.1 Introduction of the case study**

This section tests the stakeholder approach in evaluation application and methodology that were developed in the previous chapters. Case studies in this research were carried out by

the investigation of six multi-national corporations in China within a project initiated by China business council for sustainable development (CBCSD) to investigate sustainability of the large multi-national companies in China, mainly the member of CBCSD. The visited company were BP, Shell, BASF, Lafarge Novozymes and Rohmhaas.

Although the objective for this research was to have a good representation of companies (industry, original country and business territory) and wide range of stakeholders (government, NGOs and business partners etc.), it was difficult to satisfy them all in the research context due to time constraints. Section 7.1 will give a brief overview of how the case studies were selected and how they were carried out. Sections 7.2 explain the method of the stakeholder investigation. Sections 7.3 take BP China as an example to look at how the evaluation is implemented and Section 7.5 will draw some conclusions.

The cases studies were carried out by interviews and data analysis in the different agencies and organizations related to researched companies. A one-page description was prepared by the researcher, which was sent to the interviewees prior to the meetings. This one-page description was the self-introduction of interview and related questionnaires for stakeholder interviews that are attached to this thesis as Appendix. The visits in each company lasted about one week and involved several site visits and interviews. The visits took place from the March to September in 2005. The Table 7.1 show as below is the structure for description of the case studies, I designed this structure as a common format and procedure.

**Table 7.1 Structure for description of case studies**

1. General information	Corporate Strategy and analysis
	Corporation's profile
	Evaluation Parameters
	Self evaluation (internal benchmarking)
2. Stakeholders engagement	A: List of all stakeholders
	B: Stakeholders identification
	C: Approaches
	D: Key issues and concerns
3. Summary of Evaluation	List of opinion gaps
	Remarkable Aspects
	Identified Problems
	SWOT-summary

## 7.2 Method of investigation

The case studies are fundamentally theory-driven, because they are based on a theoretical conception of sustainability. The theoretical framework of sustainability is applied through the conceptual framework of sustainability evaluation. The data gathered to inform the conceptual framework is both quantitative and qualitative, thereby “more fully exploiting the strengths and overcoming the limitations of each [data collection method].” (Palys, 2003). The applicability of the conceptual framework for assessing sustainability is investigated. This research is exploratory and guided by theoretical constraints, as it operates within the boundaries of sustainability. The concepts applied in the theoretical framework are designed to describe components and interrelationships of sustainability for the purpose of broadening the understanding of the business sustainable development in China.

Attempts are made to bridge the dichotomy between deductive-quantitative and inductive-qualitative approaches in the research process, as each approach offers different insights. The deductive part consists of a theoretical discussion of sustainability principles and their utility. To inform this discussion, statistics (i.e. quantitative data) were collected to present important information in areas such as economic profitability and environmental

sustainability. Survey research provides additional insight into the attitudes and behaviours of stakeholders which are evaluated through holistic analysis.

Inductive analysis has been used to create an in-depth understanding of the policy and regulation on corporate governance in China. The intention is to examine the relevant indicators based on qualitative data, in order to draw conclusions on how sustainability is perceived and applied in the corporations in China.

Primary data were gathered through interviews and surveys, while secondary data, partially assembled on site, consists of corporate reports and academic literature.

The data for this project is collected from multiple sources in a quantitative and qualitative format. The sustainability evaluation framework devised in Chapter Four is the basis for organizing the data. The structure of the framework is designed to integrate the different sources of information. The interviews, surveys, and secondary data introduce complementary layers of detail for the sustainability evaluation process. A clearly organized evaluation is useful for the indicator development process.

#### 7.2.1 Interviews

In the stakeholder case studies which described in Chapter 7, each interviewee received an information letter and questionnaire prior to starting the interview. Information letters were faxed to each interviewee, while the questionnaires were presented in person on the day of the interview. Feedback letters were distributed to all interviewees within two weeks of completing the interviews. In total, eight key informant interviews were conducted, all of which took place in person in their companies.

All interviews were audio-taped, and were held in the second half of September and early October of 2005. The format and type of the open-ended questions were adjusted to match each person's organizational affiliation and job responsibilities in the hope of addressing the knowledge area each interviewee was most familiar with. In June of 2005, case studies were designed and submitted for ethics review, which were approved with minor changes by the china business council for sustainable development. The questions were prepared both in English and Chinese, and refined and revised with the help of my supervisor in BP China.

To facilitate analysis of the interview questionnaire, the responses were coded according to the sustainability evaluation framework devised in Chapter Four. The open question information was grouped into three responses, positive and negative, and neutral. This helped to identify the level of stakeholder engagement.

Within the two categories, further grouping was done to match the information in relation to the sustainability indices (or principles of sustainability). This analysis structure made it possible to cross-check the data from the interviews against one another and against any statistical data, which helped to verify the accuracy of the interviewee responses. The analysis structure was coded according to the indicators matrix.

### 7.2.2 Survey

The results of the questionnaires were summarized with basic descriptive statistics using access. The sustainability evaluation framework serves as an organizational tool for the results. Each sustainability indicators is addressed with pertinent questions that probe the attitudes and values of the residents interviewed. The analysis of the results is also presented in this chapter.

In the case study, the survey method was used to collect quantitative data about the management data of the selected companies. The survey was prepared according to the requirement of the project. The questions were designed in a close-ended format to limit the time requirements for completing the questionnaire. Respondents were asked to fill out three pages of questions.

At the first page, respondents were queried on their companies' basic profile, size of their business operations and number of employment, as well as style of the management. On the remaining two pages, the indicator matrix was used to assess the opinions and attitudes of their companies on issues related to social responsibility and environmental protection. MS Access is used to convert the data into a statistical format, the results of which are summarized in following section.

### 7.2.3 Secondary Data

The academic literature, corporate policy documents, sustainability reports, and statistical data sources were intended to not only verify the information obtained from the interviews

but also to add additional insights into the overall evaluation process. The academic literature was reviewed to identify elements that made the connection between sustainability and electricity. The content of the indices was chosen based on the literature that made this connection. Categorizing the literary sources into the appropriate evaluation indicators adds legitimacy to the content of each index.

The bulk of the written information collected for this study focuses on leading companies in their industry in China; most of them are the members of the China Business Council for Sustainable Development. Books, articles and reports that focus on sustainability issues in China are easily available in the library, in academic journals or on websites of companies and provided a good base of secondary data. Organizations that publish useful reports on the internet about China and sustainability in general are the Leadership for Environment and Development (LEAD), International Institute for Sustainable Development (IISD), CCICED, amongst others. China environmental statistics and the pollution data are available on the websites of these organizations, while the State Environmental Protection Administration (SEPA) website also publishes useful data. Important policy documents related to the energy sector in China are available on the website.

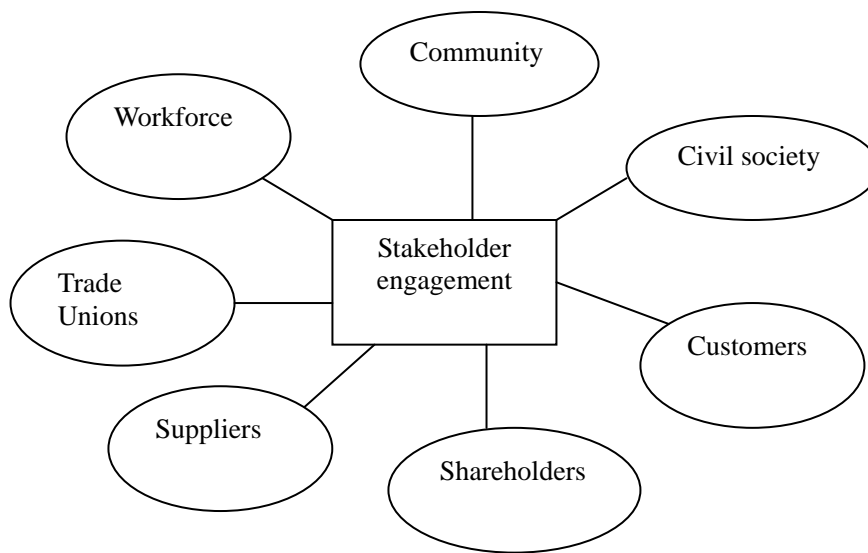
However, public information on their sustainability management specifically in China is limited. If it is referenced in their international sustainability report, it is usually in terms of whole corporations' strategy or sustainability profile, but without mention of its strategy of management improvement. Some information about sustainable development was collected from the Chinese national library, in Chinese language documents such as the National strategy of Sustainable development in China and the Statistical Yearbook.

These evaluation structures refer to general stakeholder engagement conducted by the corporation over the course of the evaluation period which was not specifically for the purposes to make an evaluation report. It includes the list of stakeholder groups, the Basis for identification and selection of stakeholders to engage, Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group and the key issues that stakeholder raised.

The stakeholder groups engaged by the corporations mainly includes:

1. communities;
2. civil society;
3. customers;
4. shareholders and providers of capital;
5. suppliers;
6. trade unions;
7. workforces

**Figure 7.1 Analysis of stakeholder groups**



These were important to the extent that they affect or were affected by corporate performance. One significant driving force behind process thinking is stakeholder satisfaction. Stakeholders form part of the external environment that both gives inputs to corporate behaviour (through the feedback channel) and receives outputs of corporate activities (stakeholder satisfaction). Examining the role of stakeholders was therefore an important dimension in evaluating corporate performance, outcomes and goal achievement of corporate sustainability. To facilitate the evaluation of stakeholders, the following three components were examined.

- Stakeholder expectations: identifying the services and products stakeholders expect from the corporations and the level of quality and effectiveness expected from the corporations.
- Stakeholder prioritisation: identifying, prioritising and analysing the stakeholders in

order of importance and influence, as defined by the organisations.

- Stakeholder satisfaction: assessing the extent to which the various stakeholders had been satisfied by the organisation. This was based on how the organisation prioritised the stakeholders and attempted to meet their expectations.

#### Identification

This includes the process for defining an organization's stakeholders, and for determining with which groups to engage, and those groups not to engage.

#### Approaches

The approaches could include stakeholder engagement, frequency of engagement by type and by stakeholder group. Such as surveys, focus groups, community panels, corporate advisory panels, written communication, management/union structures, and other vehicles.

#### Key issues

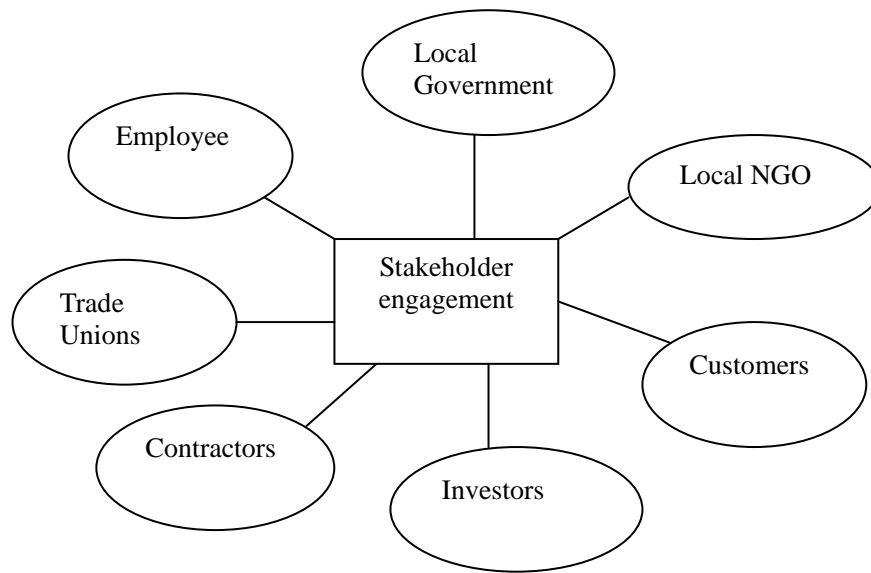
The issues and concerns rose through stakeholder engagement and how the organization has responded to those issues and concerns.

### **7.3 The case study of BP YARACO**

This section takes the case study from BP China's YARACO Chongqing factory as an example to illustrate how the information is gathered through field research and secondary data analysis. The procedure of this study is based on the sustainability evaluation framework devised in Chapter 4. The type of data collection method (interview, secondary data, or survey) informs the structure of the case studies. Interview and secondary data provide information for business performance and sustainability situations, the structure of case study is based on Table 7.1. Here we only provide the stakeholders' engagement in the case study as this is key evaluation part through field work and the rest parts concentrated on analysis of the secondary data.



**Figure 7.2 List of stakeholder groups**



## **B: Identification**

BP China's YARACO factory in Chongqing is engaged with a range of stakeholders including employees, local government, contractors and customers. Engagement may be direct, indirect, formal or informal or by supply chain communication. The knowledge which they gain from it is fed back to BP China management and used to improve their process across the business in a number of different ways. This section explores engagement with specific stakeholder groups.

## **C: Approaches**

Corporate sustainability is an idea of a powerful group (the corporate sector) that serves the purpose of promoting their position in society and the current course of globalisation from which they benefit. Therefore it is necessary to be aware of the relationship between the idea of corporate sustainability and the current status of the corporate sector in terms of their economic and political influence. When studying such an ideological topic it is inevitable to use research methods that allow the ideas to be challenged and explored at length.

Aware of this, the research is concerned with examining the diversity of meanings of corporate sustainability, in outlining any common boundaries within those forms and in contrasting these with other visions of sustainable development. While positivist,

quantitative methods have an important role in management research, the point of this study is to gain the in-depth, subjective views of participants whose work is directly impacted on by corporate partnership or sustainable development.

The survey format keeps the interviewees focused on particular issues concerning their general experiences of sustainability management, as well as providing the freedom to pose further questions in response to their answers. The format encourages interviewees to discuss their views in their own terms and at length, gives the opportunity for the worldview behind their statements to come to light. From this perspective, corporate sector representatives can provide a clearer understanding of what they mean by corporate sustainability and how it fits within the logic of the sector and economic system within which they operate.

### **Employee**

Through the questionnaire interviews that conducted voluntarily during this study visit from Aug 8th to Aug 18th, a positive relationship between respecting employee rights and running a successful enterprise was found according the employee interviews. It also shows that employees look to their job not only as a way to make a living but also a way to develop themselves intellectually, socially and professionally. The HR manager of YARACO explains:

*“Our employees have passion about wanting to make a difference. We understand that, to succeed as a business in competitive markets, YARACO must attract and retain the best people. Competitive rewards linked to performance and more opportunities for personal development are increasingly important elements of our business strategy. We believe there is a positive relationship between productivity and employee’s satisfaction”.*

The author asked employees their opinions on various dimensions relevant to their work. These included performance direction, working environment and conditions, development and perception of the company, as well as their treatment by management.

Generally, employees are proud to work for YARACO, feel involvement and show a high willingness to perform. The investigation indicates that employees rate YARACO highly for its financial, health, safety and environmental performance. Additionally, as a stakeholder group, employees believe YARACO has created an environment which keep transparent and harmonious management system.

However, employees raised concerns about maintaining a reasonable and more competitive salary and compensation system, and promotion regulation as a result of coping with the challenges of the integration process. Concerns were also raised about limited communication and trust in management. Management at all levels have noticed these issues and taken these suggestions very seriously. A range of measures have been agreed, aimed at improving critical areas.

### **Contractors and suppliers**

Contractors and suppliers enable a company to realize its added financial value. This is also where it confronts its competition. At the same time, they make a key contribution to business performance. To ensure the contractors and suppliers have the right capabilities to perform, YARACO carried out with a series of training and communication with its contractors. Marketing manager explains their policy:

*“Our expectations of our contractors and suppliers are high, but we always seek mutual benefit. For example, the contractors have to comply with the safety requirements and ensure quality standards; but these commitments are also assurance for their reputation and market competitiveness.”*

Trust is the key element to build any partnership, especially for supply chain and business cooperation. In chemical industry, quality and reputation are core competitive advantages to be a sustainable brand. A manager from a key contractor highlighted his company’s positive relationship with YARACO, which be contributed to good communication and the earlier building of mutual trust.

### **Transportation contractors**

Today, one of the biggest risks to the safety and well-being is road transport. YARACO is improving both the safety of their cars and offer driving safety training for all employees and their transportation contractors. Transportation manager said:

“As part of our engagement in society we see our transportation contractor as part of our external image, so we have a strict selection and management process, maintain high

standards and a strict supervision system, which are our bottom line to operate. We believe this engagement is core to creating mutual benefit.”

In Chongqing, many customers said that they enjoyed a positive business relationship with YARACO. Feedback from contractors highlight that the company has to work with stakeholders towards a better understanding on HSE principles and build up long term partnership. At the same time, they are impressed by care and concern with regard to detail safety monitoring, for instance, The manager from a contractor transportation company said: *“they discussed with us about transportation route and time schedule, made a detail transportation timetable and route map, ensure driver safe work and avoid tired driving.”*

YARACO takes a high priority concern on transportation on dangerous chemical products. In order to reduce the risk of accidents, 50% products are transported by rail, 40% products are shipped by river, only 10% product are transported by road. However, all shipment are important in term of safety assurance, YARACO has special manager to supervise this work.

### **Government relationship**

The Chinese marketing economy is still young and the role of government in the new economic system still changing. The Chongqing local government gave positive comments on YARACO’s performance. “this company’s the main contribution is not only tax and employment, but also a pilot model for other investor, YARACO gave us a good example, let other investor much confidence on local investment”. Governmental officials from foreign trade and investment department explain their impression of YARACO. They also hope YARACO can be another kind of the model company in implementation of corporate social responsibility.

I obtained little feedback from the safety monitoring department, as their key focus was the private sector with high accident records like the mining industry. As a result, their contact with YARACO which they see as a well performing company was relatively limited. Therefore, their impression of YARACO is a company with a good HSE policy. They gave positive comments on BP’s behaviour and were satisfied with YARACO’s performance.

## **D: Key issues**

In this section, we review four questions raised at the beginning of the case study, and through answer all these questions to summary ways to improve sustainability.

### *1. Does Sustainability actually benefit to business?*

From the evidence of this investigation we argue that there is a good business case for the corporations to adopt Sustainability practices. Some of the main reasons are as follows:

- Productivity: gathering innovation for products and efficiencies
- Expanding business: expanding the reach of business through access to new markets and increasing customer base
- Improved working environment: increased motivation, less staff turnover and the ability to attract better quality staff
- Reputation: enhancing the reputation of the firm – brand building for global companies

### *2. What are the good methods that can be employed to implement Sustainability?*

Traditional top-down strategies, described as the development and imposition of Sustainability practices by company, were thought to be the most effective means for instilling responsible business practices. However, it is evident that coaching with investors that encourage capacity-building and worker empowerment are effective means for BP to gain knowledge of Sustainability practices and methods of Sustainability implementation. YARACO under this model carries out Sustainability activities because they clearly link the benefits of Sustainability to their own growth.

### *3. What are some of the key elements of a successful transfer of Sustainability principle to practice?*

Investors influenced the BP development through many ways, which requires them to carefully research and analyze their operational and environmental conditions. A basic understanding of the business cultural mindset and Sustainability principle is the first step to clearly identifying how investors can develop their directing activities. Training high-level managers on cultural sensitivity and the importance many cultures place on

respect and societal positions can facilitate communication and dialogue with stakeholders.

With regard to business development, it is necessary for the investors to understand the local economic and environmental limitations that may inhibit YARACO from engaging in further capacity-building activities. Such constraints include limited managerial capabilities and limited access to financial capital for increasing operational capacity.

Building confidence and trust between two sides managers and among their partners is a key step towards the successful transfer of Sustainability practices. Establishing confidence and trust strengthens business partnerships and provides a foundation for Sustainability transfer.

In addition, marketing managers or supply chain should be encouraged to actively pursue new partnerships with sustainability friendly local business partners and maintain a database of contractors with corresponding profiles and capabilities based on performance and compliance with specified standards may facilitate the active participation from relevant management to engage local business partners. Required annual reviews of the database may help facilitate such activities.

It is important to focus on building capacity of management level to implement Sustainability practices by themselves through direct information exchange. This can be accomplished by holding structured and informal meetings in various settings to encourage suppliers to freely discuss challenges and achievements. Training for managers on managerial, operational and technical improvements can also increase standards within and partnerships between investors. In addition, providing incentives to those business partners who are performing well may encourage other partners to participate in Sustainability training activities and increase overall standards.

#### *4. How to improve the relationship with local Government?*

Governments have a significant role to play in engaging dialogue on creating an enabling environment in which Sustainability practices can be adopted more easily and on establishing mechanisms that help enterprise build capacity to grow and sustain their Sustainability initiatives. Governments must also focus on attracting investors who will bring additional developmental benefits besides tax revenues, such as employment, new

skills and technologies. In addition, governments can contribute to Sustainability development by designing comprehensive frameworks and systemic approaches that will bring together the existing work on standards and codes of different companies and exchange each other. By doing so, governments will promote and enable a fuller Sustainability implementation across industry sectors.

The case study is a short interview description resulting from the one-week visit for each company. The evaluation results do not exactly do justice to neither the developed evaluation framework nor the evaluated administration systems, mainly for two reasons:

- The duration of the company visits of one week each is probably not sufficient to collect enough material, to process it, and to test its validity. Mainly after the BP, Shell and Lafarge visits, there remained open questions, which would have required further investigations.
- The evaluation framework was not fully developed at the time of the visits. A company visit now after the whole framework and methodology has been devised, would probably yield better and more balanced evaluation results.

The case studies and their descriptions, however, provided a valuable test for the evaluation framework and methodology, and revealed the strengths and weaknesses of the framework itself.

#### **7.4 Outcomes for external evaluation system**

Narrative evaluation approaches are means by which complex management information, in all its forms, can be reduced in complexity to inform stakeholders and the community. Narrative report summarise the ecological, socio-economic and governance aspects of the corporate management, with ongoing monitoring of these variables informing stakeholders of performance over time.

Business management is becoming a multi-dimensioned process, conducted in an uncertainty business environment with political and socio-economic influences. Any means to include stakeholder and community organisations in decision-making processes, improve consultation mechanisms, or inform the public of the state and performance of the companies will require simplified and improved communication of all relevant information.

Several evaluating systems like GRI specifically inform stakeholders of relevant operational issues within the sustainability report. These initiatives contain as a part of their aims and structures mechanisms to improve the flow of information to the community and clarify important issues. These indicator systems focus upon generalised information (e.g. total catches of commercially important species per year) and avoid detailed evaluations. The BP Case has had particular success in informing corporate stakeholders and achieving management consensus.

Stakeholder approach is the basis of assessing progress towards sustainable development and implementing sustainability management within companies. As noted in stakeholder track progress, predict and warn about potential problems, facilitate learning by comparison at different period. When observing narrative statement, it should be possible to condense the complexity of a system to a manageable amount of meaningful information that assists the corporate managers in informing progress and making decisions (Bossel 1999).

Although narrative statements do not replace the conventional information that is used to financial management or Public relationship management, they enable this information to be presented and communicated in a clear format to stakeholders and highlight the basis of decisions or particular courses of action.

The use of indicator systems enables the methods and data, which are the basis of management decisions, to be available for scrutiny by stakeholders. Through the SES structure the framework for the evaluation and the objectives for the company are made explicit, as are the means of obtaining them and measuring progress. The outputs of the SES, which include the interpretation, analysis and conclusions, are communicated to those who have an interest in the corporate sustainability and the broader public, and as a result the transparency and accountability of decisions are increased (for example, BP decisions or regulation of EHS). The reporting of evaluation results opens up the basis of management through the medium of working groups or management committees, and can increase stakeholder support for the company as a result of this increased transparency.



## 7.5 Conclusion

There is no single best approach to evaluate corporate sustainability. Yet there is also no shortage of promoters of particular frameworks and methodologies. In this chapter, we do not intend to enter this debate but instead try to pull together the two evaluation method in a generic process of sustainability evaluation and explain it through case studies.

At base, corporate sustainability evaluation is an integrated evaluation that is applied to address: the environmental, social equity and economic consequences of corporate development, and within an explicit sustainability framework based upon agreed principles, criteria and indicators. Within this context, we define the conditions for the four pillars of Sustainability as:

- Economic evaluation;
- Social evaluation;
- Environmental evaluation and
- Management evaluation

Case studies in this chapter apply these insights in the full set of process elements recognised in progressive sustainability evaluation processes:

- identifying appropriate purposes and options for new or continuing undertakings;
- assessing purposes, options, impacts, mitigation and enhancement possibilities, etc.;
- choosing (or advising decision-makings on) what should (or should not) be approved and done, and under what conditions; and
- monitoring, learning from the results and making suitable adjustments.

General process design:

translation of the basic design feature into explicit and effectively imposed obligations - with careful, open attention to sustainability requirements in the conception, planning, approval, implementation and adjustment of all important undertakings at the strategic and project levels, in all jurisdictions;

Basic decision criteria:

translation of the core requirements for sustainability into strong generic guidance on the

relevant sustainability objectives, priorities and criteria, and trade-off rules, for all the main kinds of undertakings and locations, and covering all the main steps of environmental evaluation (including strategic evaluations to guide project level work);

Case specific process guidance:

Appropriate processes for elaboration of the general process rules and the basic decision criteria for specific places and undertakings;

Methods:

Well tested methodologies for sustainability deliberations, plus baseline data, indicators, systems depictions, desired future scenarios and approaches to conflict resolution, for example concerning trade-offs.

We concluded that some of the necessary work to put a broad-based evaluation system for corporate sustainable development is already well developed. But there remains a strong need to elaborate basic guidance for sustainability evaluation process design and application, particularly covering:

- The construction of a working understanding of the core sustainability requirements that are to be used as evaluation and decision-making criteria; and
- How to address the compromises and trade-offs that inevitably will need to be made between and among these requirements in particular cases.

## **CHAPTER 8. Discussion and conclusion**

This chapter discusses and concludes the research. It embraces the findings from the literature review, the development of the system to evaluate corporate sustainability and two systematic approaches for evaluation's implementation. This conclusion links and integrates the research findings. The discussion provides suggestions for future research which have emerged as a result of the findings of this study.

The main objective of this study was to develop a methodological framework for corporate sustainability evaluation Systems (CSES). Specific objectives included development of methodological tools for benchmarking by relevant indicators for internal stakeholders to assess the business performance at different scales and for external stakeholder to evaluate corporate sustainability from independent views.

This chapter will discuss and summarise the research findings and recommendation for future research. It includes a review of objectives for this thesis, a summary of the research, policy implications arising from the study and conclusions, which also includes limitations and areas for further research.

### **8.1 Review of the objectives**

The study aims have been indicated in chapter one:

1. Identify the generic structures, processes and concepts that underlie evaluation systems and influence their effectiveness, suggest ways to improve the conventional evaluation methodology by literature review and theoretical analysis. What are corporate sustainability evaluation systems?
2. Develop a framework to measure and compare the performance of corporate sustainability in a context that includes aspects from such as economic, social, and environmental issues. Strategically assess the role of indicator systems, Do SES improve decision making in terms of sustainability?
3. Investigate the application of evaluation systems within a variety of Chinese companies and Multi-national companies in China. How is evaluation systems applied in management?

### 8.1.1 Objective 1: Theoretical structures

The SES indicators, evaluation framework, and case studies are the analytical tools employed to address objective One. The objective focuses on the conceptual and generic structures that underlie all evaluation system development, influence outcomes, and contribute towards sustainable management.

The SES indicators in Chapter 3 were developed from observations in the literature and from direct research, and have been successfully applied to all case studies. Use of these indicators therefore implies that it reflects a systems view, generic structure and basic processes of an evaluation system. The indicator does not impose a fixed and rigid structure upon an evaluation system.

The ordering of indicators into a coherent framework can lead to improved understanding over which indicators to use to achieve outcomes; to understand system dynamics; and to promote clarity and objectivity. The cases illustrate a range of frameworks that frame the organisational structure of each SES. Frameworks determine the order of the information for the evaluation, what dimensions are considered, and its overall scope and structure.

The selected framework is often a derivative of the definition, the strategy focus and the business needs. The framework therefore can be orientated towards a specific business context. An important feature of SES is that it endeavours to improve management by assessing performance in relation to objectives. Once objectives and indicators have been established, a measure of performance is necessary to gauge progress towards or away from the goal.

The framework also take consider of the broad sustainability dimensions and conceptual categories that contribute to the notion of sustainable development, and include, but are not limited to environmental (often ecological and/ or target species), social, cultural, economic, political, governance, institutional, capital, human, and technological spheres. Achieving sustainability depends on satisfying to a certain degree all of the dimensions (i.e. the environmental, social and economic aspects of an issue). Indicator systems as policy constructs have however, limits on the financial input and expertise that drive the evaluation. One indicator system, no matter how technically proficient, cannot be expected to facilitate

and assess all the required dimensions of sustainability. The dimensions that are chosen for the indicator system will affect evaluation; a key challenge will be to integrate information and evaluations from different dimensions.

Selection of the indicator dimensions sets the scope of the SES and is often influenced by the definition and scope of sustainability. There is no right or wrong answer to defining the dimensions, as each consists of a different approach to conceptualising sustainable development. What is important is that the dimensions are oriented towards the purpose of the SES, usually on the basis of an industry context. Traditionally most sustainability indicator systems have been oriented towards the environmental dimension.

#### 8.1.2 Objective 2: Effective approaches

With reference to the deficiency of sustainability evaluation methods and the need for a multi-dimensional approach in evaluation in the literature, an internal evaluation approach was developed in Chapter 4. Elements and steps in evaluation were identified from the literature review and professional consultancy and results were incorporated in the sustainability indicators. Based on the research results, the list of sustainable development indicators was narrowed down and grouped into the four aspects: social aspects including social well being, economic aspects including financial benefits and business ethics, environmental aspects including environment impact and resource protection, management aspects including human resource management and labour issues. The development of a sustainability evaluation system that incorporates economic, social and environmental aspects into a composite indicator was presented and discussed in Chapter Five in line with the three aims set out in the introduction.

It is important to note that this method of analysis focuses on the comparison of indicator systems as based on the evaluation framework. The focus is on looking at the positive and negative aspects of the cases examined and what lessons can be gained for improved SES development.

The second approach to address Objective 2 is to distil the empirical information from the case studies and the evaluation framework that reflects positive corporate sustainability and management outcomes generated by SES. The identified benefits include:

- Evaluation systems facilitate strategy planning and policy making;
- Evaluation systems inform stakeholder and community organisations;
- Evaluation systems facilitate management of specific sustainability issues;
- Evaluation systems facilitate corporate transparency and accountability in decision-making;
- Evaluation systems contribute to the implementation of external stakeholder engagement
- Evaluation systems are used as a tool for increased external auditing organization involvement in sustainability management;
- Evaluation systems facilitate increased participation in and awareness of sustainability management mechanisms by NGO bodies and the public;
- Evaluation systems are forming the basis of management and performance measurement standards;

### 8.1.3 Objective 3: Application of SES

This refers to the influence of the SES in relation to decision-making. The decision making scope influences the design of the SES and determines how the results of the evaluations are used in the management process. Two influencing approaches have emerged in the decision making scope across the cases: internal benchmarking and external evaluations.

The objective 3 represent the desired goal for the evaluation system and ask the question ‘what do we want to achieve? The objectives are a core component within the SES and often exist at multiple scales. At the strategic level they define the purpose of the indicator system and are generated from policy statements, strategic plans or legislation. Conceptual objective, while important for setting strategic focus, can be interpreted in different ways by stakeholders. This can lead to multiple views on what the SES is trying to achieve and what it is trying to measure.

To facilitate transparency and clarity in decision-making, the objective must be filtered down into operational statements that link back to the conceptual objective. This is a challenge for SES implementation as the majority of objectives exist at the conceptual level but do not exist at the operational level. As shown in the SES indicator, an objective should be set within the categories to define and set the aim for each indicator.

Operational objective ask the question ‘what is the indicator trying to achieve?’ and directly influence the form of the measurement. Setting the objectives for indicators has focused increased attention on management processes, as stakeholders need to identify the conceptual objective and then agree on a suitable indicator based objective. It has essentially forced the attention onto defining specific goals for management systems beyond the conceptual level.

Therefore, one of the advantages of using indicator systems in management is the distillation of specific objectives that can be agreed upon, measured, and achieved. This process of setting objectives has been identified across the cases and reveals that this process is critical in generating effective outcomes.

In acknowledging the importance of considering corporate sustainability in corporate development, the conventional economic approach of decision-making in the corporation was critically examined and discussed. This was explored by identifying and measuring the principal sustainable development indicators that embrace social and environmental considerations within a sustainability evaluation framework.

The research methodology and data collection were presented in Chapter 3. Data for the sixteen indicators were collected and measured using benchmarking tool developed in Chapter 4. Chapters 6 analysed the stakeholder approach as an evaluation methods, and its purpose was to test evaluation procedure. The results indicated a strong relationship between the stakeholder feedback and that the indicators self evaluated by the corporation, which can be analyzed through performance gap analysis and formed a working plan for improvement.

The sustainability evaluation system was further verified by applying it to case studies among members of China Business council for sustainable development. The results indicate that the sustainability evaluation system can rank the corporate sustainability performance and develop action planning for improvement of the business sustainable development. In Chapter 6, the sustainability indicators were further extended to develop a benchmarking tool to be used in the corporation.

This thesis, therefore, has:

- successfully identified the elements of sustainability, suggested ways to improve the conventional evaluation methodology by literature review and theoretical analysis,
- created the rationale of corporate sustainability evaluation system and its methodology for evaluation approach to provide feedbacks to decision-making,
- developed two approaches to measure and compare the performance of corporate sustainability in a context that includes aspects from such as economic, social, and environmental issues, and

Sustainability issues are of growing concern and should be incorporated into the decision-making process of selecting the best option among alternatives. This study provides a platform for this procedure to be carried out in the most effective way.

In the sustainability evaluation system, the approach has been used to develop CSES, which is powerful yet so simple that it can be used by the policy makers of Multi national corporations, and their stakeholders when considering a multi-dimensional evaluation approach. In addition, the development of stakeholder approach has dramatically simplified the evaluation procedure which will ultimately improve the quality of decision-making and promote sustainability goals in the corporation.

## **8.2 Benefits from application of CSES**

Past performance is an excellent predictor of the future performance. Indeed, managers want their systems to be prospective; to provide information about future operations, not just report on the success or failure of what happened in the past (Cooper and Kaplan, 1999). Consequently, this research effort intended to make the corporate sustainability evaluation system cognizant of potential prospective uses by corporations in China.

The system provides a unique and comprehensive tool for promoting corporate sustainability.

The CSES will help corporations:



### 8.2.1 Manage corporate responsibility practices and programs

The CSES makes it easy for companies to perform an internal evaluation of their performance across the five key pillars of corporate sustainability:

- Governance and Management Practices
- Human Resources Management
- Community Investment and Involvement
- Environment, Health and Safety
- Human Rights

### 8.2.2 Measure performance against world leading codes of conduct

Using benchmarking database of information, the evaluation results enables companies to easily and effectively navigate the increasingly complex world of corporate responsibility standards and benchmarks. The questions in the CSES are based on existing corporate responsibility standards, codes and benchmarks that have been integrated and connected.

### 8.2.3 Improve corporate responsibility management practices

Whether the company is thinking about improving corporate sustainability or has a fully developed program, the CSES can be used to improve corporate social and economic performance. It can help decision makers determine how developed processes are and give them the opportunity to set performance targets. This will allow companies to work towards continuous improvement, while tracking the progress over multiple years.

The critical benefit to companies of an enhanced social responsibility management framework and a greater sensitivity to social responsibility issues is that it provides for more effective risk management. Social risk management procedures impose clear disciplines upon an organisation which should result in improved relationships with stakeholders and a better understanding of the environment in which it operates. Such management procedures should better equip an organisation to anticipate the inclinations of those who prescribe regulations and performance expectations upon it, and will sharpen its response to third party pressures to measure sustainability performance. Also, with the growing trend towards Socially Responsible Investments (SRI), companies able to effectively manage, measure and thereby demonstrate an improved social responsibility performance, should be able to attract increased business, customer and investor support and overall higher asset values.

#### 8.2.4 Report results to key stakeholders

A variety of reports can be generated that capture company's corporate sustainability program as a whole or just a specific section of it. Print reports that show social, environmental and economic performance against key international codes. CSES has all information to print the questions related to specific codes and standards and consolidate them in one easy to read report.

Because social responsibility management is an evolving science, the hard evidence of ensuing financial benefits has taken longer to accumulate and is perhaps less widely appreciated. However, there are corporate case studies in abundance that do demonstrate the ensuing benefits from socially responsible projects. Indeed in recent years it has become increasingly clear that those companies that effectively integrate CSR throughout their operations can deliver a range of positive outcomes that ultimately advance business competitiveness and establish the entity as an employer of choice. These include but are not limited to:

- the ability to attract talented employees in increasingly competitive and globalise labour markets
- cost savings derived from sustainable management strategies e.g. water, energy and office ecology
- improved relationships with governmental and non-governmental actors
- enhanced reputation leading to increased market share and consumer confidence
- the ability to attract business partners who have incorporated social and environmental requirements into the procurement process.

#### 8.2.5 Learn about latest trends and issues in corporate responsibility management

The CSES toolkits includes access to a comprehensive knowledge centre for understanding and learning about the latest news and trends in codes of conduct and standards for corporate responsibility as well as the changing expectations of company's stakeholders and the public.

Precautionary measures have evolved in the face of increased uncertainty in the management process and corporate risk evaluation. It has evolved as an accepted principle, having been included in a variety of national and international legal and policy documents, but generally remains limited in term of developing specific processes and mechanisms in management. A

precautionary approach, in its most basic form involves ‘erring on the side of caution’ when making decisions in a climate of uncertainty, but methods to implement this approach have been lacking or superseded by political pressure to maintain harvests. Initial methods focus on the identification and development of reference points (target and limit thresholds) for companies that identify desired states (targets) or undesirable states (limits) (Caddy 1999; Essington 2001). Establishing a precautionary approach has now evolved in terms of the development of an entire adaptable management process to account for uncertainty (and quantify it if possible) and adjusts the management system to minimise risk of long term detrimental impacts. This includes setting objectives, strategies, targets, reference points, and decision rules to cycle information back into management.

The process of constructing Evaluation systems facilitates an approach to addressing uncertainty. Despite the lack of practical precautionary approaches in corporate management systems, the inherent structure of the evaluation system aids the development of a precautionary approach. These cases have developed advanced approaches that quantify, assess and communicate information uncertainty and propose mechanisms for feedback management. Companies can learn valuable lessons and methods from this engagement in implementing a precautionary approach.

Business management has evolved to consider a variety of stakeholder interests. Consultation mechanisms have generally increased, but full and open participation by the community is lacking in China. The interest of civil society in business sustainability has increased in response to governmental and NGO public awareness programs, the formation of various corporate social responsibility initiatives, major international sustainability initiatives (such as Agenda 21 and Johannesburg 2002), and highly public security crises (such as the Petro China’s factory explosion in Jilin). Increased awareness has resulted in increased civil society pressures upon the corporate disclosure policy, and recognition that community organisations, on behalf of the resources that are managed for the benefit of society, are legitimate stakeholders in the management process.

Evaluation systems not only inform the broader community about activities and related issues within the companies, they can facilitate direct involvement in its decision-making. In the transparent and participatory development of an external evaluation system stakeholders are involved in the setting of objectives and the selection of indicators. In addition stakeholders can be involved in monitoring programs and contribute feedback into the SES.

When decisions are made on the basis of indicator results, NGO's remained informed and maintain a role in the acceptability and implementation of the findings.

#### 8.2.6 Evaluation systems form the basis of management and performance standards.

The development of evaluation for business sustainable development highlights a variety of measures for environmental, socio-economic, and governance success. These measures expand the base of management concern and explicitly recognise the variety of influences, inputs, outputs, and dynamics within business operations. This information is made available via the evaluation structure to decision makers and the public.

The range of issues covered within the cases is diverse, with some cases taking a predominantly target species approach, to cases taking into account an array of environmental and socio-economic variables. It can be observed from the cases that corporate management and reporting systems are gradually expanding to account for and measure the broader influences that occur within corporate systems. This expansion is limited by the availability of, and access to, information from research programs and other sectors.

The translation of these influences and objectives into measurable indicators combined with a means to assess their performance has resulted in SIS emerging as standards for benchmarking corporate practice. Standards fulfil a variety of purposes, for example, the ISO 14000 set of standards have been developed as the basis of accrediting environmental management systems (IISD 1996). Standards can be used as the basis of improving corporate management practice, and can be monitored by decision makers and the public to compare performance and improve outcomes. Several cases use SIS as a formal process of developing standards for management orientation and accreditation.

### **8.3 Summary of the research**

Sustainability translates into a compelling orientation towards the future. However, this concept does not provide ready-made instructions for implementation. The concept of sustainability is not a recipe book with clear-cut solutions for standardized problems. In effect, sustainable development is not about giving convenient answers but about asking the right questions.

Sustainability is a heuristic – a method not for applying existing solutions but for finding new ones. As a heuristic to enlighten corporate development, sustainability raises guiding questions as to how a corporation can organize social cooperation in a way that motivates persons and business partners with individual goals and interests to consider the present and future economic, ecological, and social consequences of their actions. As a strategy to solve problems, the underlying insight is that sustainability does not argue for the denial of economic self-interest but calls for fair rules of the game that seek to harness the forces of self-interest to achieve socially desirable moral objectives.

Companies can play an important role in fostering an integrated understanding of sustainability. Global problems require sustainable solutions by global governance – a process of institutionalization that entails both the creation of new organizations as well of new rules of the global game. Sustainability evaluation requires the cooperation of politics, business, and civil society. Such cooperation is not easy. We are in need of novel processes and new formats of collective learning that allow identifying and realizing common interests.

These learning processes aim at improving and strengthening the institutional order in which politics, business, and civil society operate. Companies who contribute to improving this order take responsibility as corporate citizens. Internally, corporate citizens take responsibility to strengthen corporate governance, transparency, and integrity. Responsibility does not expect companies to sacrifice their self-interest within the moves of a given game. Rather, it encourages companies to change the game itself in order to reconcile making profits and furthering moral objectives: that is the external dimension of responsibility.

Managing a company's social acceptance and responsibility will be an ever more important entrepreneurial challenge. Corporate sustainability is a strategy to meet this challenge – a challenge to be taken as seriously and addressed as professionally as the process of engineering cars, conducting market research, or planning financial strategies. Investments into sustainability enable corporate citizens to do well by doing good. Thus, sustainability means that business understands itself and is being perceived not as part of the problem but as an integral part of the solution.

The one purpose of this research was to identify those factors that are critical for developing

an evaluation system for improving corporate sustainability. This system incorporated environmental and social values into the decision-making process in order to promote sustainable practices in the corporation. The conventional approach, which considered only economic returns as based on market transactions, was shown to no longer be feasible. The deterioration of environmental goods and services due to the corporate activities has become an important consideration in every development. Environmental goods and services are externalities and intangibles that cannot be sufficiently handled by the current economic approach, but need to be included for a total assessment.

Even though a development generates net profit in the long run, it may be undesirable if it causes environmental deterioration. Therefore, the ultimate target, of this research, was to develop a sustainability evaluation system to assess corporate environmental and social performance. The CSES is a composite system that measures economic return as well as a development's environmental impact. The study involved identifying the principal sustainable development determinants investigating methods of quantification and, finally, developing a CSES to combine the determinants into a single decision-making tool.

The CSES is also a decision-making tool that uses a composite indicator to rank the development options of a project. The process enables the principle of trade-off to take place in the decision-making process and to enable environmental values to be part of the consideration in selecting a development option. This makes it possible to optimize financial return, maximize efficiency of resource consumption and minimize detrimental effects to the natural and man-made world. The research was divided into three parts: a literature review, a corporate stakeholder relationship investigation in NGO and Government, and an examination of corporate social responsibility.

The literature discussed the impacts of the corporate activities on the society and environment. It also investigated the use of evaluation methods in appraising the corporate sustainability. The study also critically examined the use of a multi-dimensional evaluation approach, as opposed to the conventional single dimensional methods, in assessing the corporate sustainable performance.

From the discussions in the literature review, the sustainable development indicators were

identified and business sustainability survey was formulated and carried out to examine the stakeholder relationship among NGO and government professionals. Simultaneously, these professionals ranked the identified sustainable development indicators in order to determine the principal variables to be included in the sustainability evaluation system.

The literature review and the industry survey provided the foundation for the case studies that formed the major part of this research. The analysis indicated that financial return, energy consumption, external benefits and environmental impact were the principal determinants for appraising corporate sustainability. The ultimate goal of this research was to develop system to manage corporate sustainability and assess its social and environmental performance.

The CSES formed the base for the case studies. The case study examined Chinese companies of various sizes, locations and ages. The aim was to quantify the four criteria of the sustainability and to examine their relationships in the system. The probabilistic results of statistical analysis of data indicated that the four criteria were highly correlated with each other, and the sample variation in one criterion could be explained by the variation in the other. The results also indicated that the correlated relationships allowed a trade-off principle to be applied in the CSES. The hypotheses as specified in Chapter Six were tested and discussed.

The CSES was finally validated by a study of another project. It was demonstrated by assessing a low-rise industrial building with three design options. The four criteria included in the CSES were assessed and quantified. The CSES being developed in this research is a multi-criteria approach for business management, which extended the conventional economic methodology to encompass energy usage and environmental values into the appraisal framework.

The CSES has also been developed into a benchmarking tool in this research using a computer application. The development of computer software, entitled CSES, has already been developed for the corporation as a tool for ranking corporate sustainability performance. The development of CSES highlighted the practical aspect of the CSES in assessing corporate sustainability performance and to promote sustainable practices in the corporation. Sustainable development is of growing importance to the world because the current exploitation and uncaring use of resources, together with the pollution generated, cannot

continue at present rates. The development of the corporate sustainability evaluation demonstrates a significant contribution to enhance sustainable development and exhibits a way to bridge the gap between the current methodology of business management and sustainable requirements in corporation. The CSES will have an important part to play in the future to ensure that sustainability is achieved in corporation.

If sustainable business is to be achieved, it has to adopt more long-term sustainable strategies at the feasibility stage of a development to promote environmental protection and conservation. These strategies must focus on continual improvement through the consideration of social and environmental matters in the decision process. Therefore, corporation has to place a higher priority on sustainability considerations in decision making to ensure that the concept of sustainability is valued and rewarded as well as practised at all levels throughout the corporate entire life span.

At the same time, financial profit cannot be the key evaluation indicator as in the conventional reporting approach, but also has to consider the impacts a development may have on the society and environment. If the corporation wants to facilitate a change in the customary and traditional way of thinking and doing things, focusing on financial return, implementing sustainability evaluation system in the decision-making process is the way.

As discussed, the benefits of using other sorts of benchmarking systems are so evident that potential benefits may also be gained by using it in corporation. It is, therefore, also important for the corporation to establish a benchmarking system to assess corporate sustainability performance. The development and implementation of benchmarks relies heavily on the practitioners in the corporation. CSES established a more co-operative and holistic approach to encourage and promote more sustainable practices in corporate real practice and business operation.

As indicated in the research, corporation is becoming the main player in global social and economic development. If the corporation wants to minimise the social and environmental impacts, it has to adopt continual research into the management on different issues of corporations faced in sustainable development. This knowledge will provide important information to the business leader for strategic decision making and working plan designing.



The evaluation of sustainability performance of a corporation is voluntary at the moment. Although some leading companies have thought about sustainability issues as their future's competitive advantage in order to keep market position and brand reputation. It is not enough to regulate all corporations to follow various voluntary initiatives. Hence, it is important for the regulatory authorities to assist by increasing the statutory requirements for sustainable performance in monitoring and auditing corporation. Furthermore, to effect efficient sustainability evaluation, it is important to develop application tool of the CSES, providing an alternative way to improve environmental performance by making it publicly available and to simplify the evaluation process.

#### **8.4 Recommendation**

I believed that the research carried out in this thesis was significant and the findings from the study were useful for the corporation, helping them to incorporate sustainability issues into decision making. However, there are limitations associated with this study. These principally relate to identifying key sustainable development indicators using a questionnaire of corporate sustainability professionals. Therefore, the research results may only be valid for the characteristics and culture of the corporations in China.

As this thesis was mainly developing the evaluation framework with a holistic focus, the single evaluation aspects within the evaluation system were not investigated in the level of detail that they would have deserved. Further research could be done for most of the evaluation aspects and especially the 'good practice' part of each. This could be a particular interesting research project as it could be done in the context of the above developed evaluation framework, which provides a holistic approach.

Another central and important issue for further study is to examine the sustainability value's contribution to the financial performance. This study has discovered that sustainability management is positively correlated with profitability. Further research is required to investigate this relationship in greater details and to explore the reasons for such a phenomenon. Besides, the case studies of CSES application are insufficient to provide a more comprehensive picture to show their improvement process and subsequent usage. This is particularly important if sustainability evaluation analysis of corporation is carried out in

the long term. The unexpected challenges incurred during business operation are largely unknown at the time of this research. Therefore, the research is still in its infancy and further research needs to be undertaken in order to provide a more accurate further analysis in the long term perspective.

This thesis has focused on developing an evaluation system to facilitate assess corporate sustainability. The relative importance of the sixteen indicators may vary according to the types of the corporation. Further research can be developed to explore the changes of the sixteen indicators in the context of their impact on different types of development. It is, therefore, significant for the sustainability evaluation system to be tested on different types of corporation in order to specify application scale of the sustainability indicators.

The sustainability evaluation system is a composite system that consists of sixteen indicators. As indicated in the research (see Chapter 4), the sixteen indicators were highly correlated. Further research can be carried out to explore the possibility of reducing the number of variables so that the evaluation process can be simplified.

This research can, of course, be expanded to investigate other countries besides China, with the opportunity to draw some interesting international comparisons. The development of the sustainability evaluation system has international applications and international co-operation in testing the framework using corporation from different countries will enable more interesting comparisons to be made and to consolidate the robustness of the methodology. This area of research can further be acknowledged if the concept and principle of sustainability indicators is taken to the international arena.

CSES, as developed in the research, was based on the concept and principles of the sustainability evaluation to be a benchmarking tool to rank status of corporate journey towards sustainable development. Benchmarks, as discussed in Chapter five, have been used as management tool in other issues and have gained significant attention in the corporation. The benefits of setting benchmarks for evaluation, and searching for best practice in corporation, are so obvious that research needs to be undertaken. This is particularly important for environmental issues, as progress or rate of deterioration need to be measured

and monitored. Benchmarks may form the standard and against which project performance can be compared and evaluated.

The development of the sustainability indicator is important in every type of development and to promote sustainable practices among corporations in China. The evaluation framework has been tested by a limited number of cases studies. The evaluation framework as well as the whole methodology would benefit when applied to a few more case studies. The continued use of the evaluation framework would support further lesson learning and help to advance the framework itself. It is, therefore, valuable for the sustainability indicators to be tested on a larger sample size and to further investigate the results obtained in this research.

## **8.5 Conclusion**

The primary aim of this research, to develop system for evaluation of corporate sustainability, has been achieved. The integrated corporate sustainability evaluation approach was presented, discussed and tested in the thesis by building framework, designing benchmarking tool and implementing case studies in China. The CSES was also further verified by applying it by stakeholder approach. The result indicated that the sustainability ranked the performance, aiding the decision-making process.

The CSES is a composite system that combines economic, social and environmental indicators into a system to rank corporations by their sustainability performance. There is a worldwide trend in sustainability evaluation away from purely the qualitative descriptions of sustainable practices towards a more comprehensive, quantitative interpretation of sustainability performance by using relevant indicators. The CSES, as a tool for sustainability performance evaluation, has used the framework as a basis for developing an indicator that provides an operational framework and guidance for making decisions. The demand for a standardization of a framework for benchmarking is growing and the CSES was developed to satisfy this demand.

The CSES reflects the possibility of using a composite system to incorporate social and

environmental issues that cannot really be measured by other evaluation methods. External evaluation methods such as stakeholder approach (see Chapter Six) assess sustainability issues on a 'feature-specific' basis where points are awarded for the presence or absence of desirable features. However, sustainability issues were successfully measured and incorporated using the methodology established in this research into the sustainability indicators. Another achievement of the research was using a multi-dimensional approach for decision-making. The CSES is a multi-dimensional evaluation method that assesses corporations for economic values as well as environmental, and the trade-off principle in the approach concerns equity for generations today and in the future. The stakeholder approach also provides an opportunity for public participation in the decision-making process. This is another area in which most evaluation methods are deficient.

The development of a sustainability evaluation system can be used as the basis for benchmarking tool allowing decisions to be made to improve the corporate sustainability. The benchmarks of the sixteen indicators developed in this research can be set as a common target for comparison. The demonstration of benchmarking projects using a sustainability index was presented in the development of CSES. Benchmarks for the sixteen elements were established in CSES and sustainable status can be ranked accordingly.

The development of the sustainability evaluation system helps to make better decisions as sustainability issues are successfully measured and incorporated into the decision making methodology. There is, therefore, no doubt that a better decision can be arrived at that will improve the sustainability and contribute business success.

As indicated above, this investigation has identified four principal sustainable development determinants that can promote corporate sustainable performance in China. During the study, some observations indicated the need for further study outside the scope and the aims of this research. However, the scope of this research has meant that the depth investigation that many of the research issues warranted was not possible. Accordingly, it is recommended that further research is necessary to extend and to modify the findings in this research.

Even though most of business leaders in corporation recognised the importance of

sustainability issues in the business operation (see Chapter 2), they retain this perception that undertaking social responsibility and protecting the environment will inevitably cost more. When it comes to practically incorporating social and environmental consideration in business development, these issues rank as the least important. Maximum financial return remains a deep-rooted requirement of a development in corporation. Therefore, research needs to be undertaken to investigate this perception and to recommend a range of actions to foster a serious attitude change among corporate decision makers.

The benefits of sustainability evaluation in corporation for promoting best practice deserve further investigation. The sixteen indicators in the CSES can form the platform and allow benchmarks to be set to assess corporate sustainability performance. Data for the sixteen indicators can be collected and measured in accordance with the methodology established in this research. Results from the analysis can be used to benchmark corporate performance in terms of weak, medium and strong sustainability.

The research in the development of a sustainability evaluation system was the prime objective and the system has been successfully applied in evaluating corporations in China to provide the best solution for corporate sustainability management. The research, whilst completed at this stage, has opened up opportunities for further research in many other areas including an international application. Although this research is small movement, but the findings in this research can be further extended and modified to accomplish the ultimate goal of promoting and improving sustainable practices locally and globally. As the Chinese philosopher Lao Tzu famously stated around 2,500 years ago, “a journey of a thousand miles starts with a single step.” Small movements can take us a long way and there is no time like the present.

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## APPENDIX

### Appendix I. Questionnaire for interview of MNC in China

A, For the worker:

Name: \_\_\_\_\_.

Working position:\_\_\_\_\_.

These questions are intended to serve as guidelines in a discussion with workers in XXX COMPANY.

#### **Warming up question:**

- 1) How long have you been working for XXX COMPANY? \_\_\_\_\_
- 2) Are you from this region or from other towns? \_\_\_\_\_.

#### **General Questions:**

- 3) Are you satisfied with your work in XXX COMPANY?  
☐ YES  
☐ NO
- 4) If yes, was it because  
☐ Salary and welfare  
☐ Working condition and safety environment  
☐ You think it has good business culture and management system  
☐ You believe you can improve yourself by working in this company  
☐ \_\_\_\_\_
- 5) If no, was it because  
☐ Salary and welfare  
☐ Working condition and safety environment  
☐ You think it has not good business culture and management system  
☐ Working in this company is just making a living  
☐ \_\_\_\_\_
- 6) How do you feel your working condition and environment, is it comfortable or acceptable?  
☐ YES  
☐ NO, please give explanation\_\_\_\_\_.  
☐
- 7) Do you feel respected and listened in the workplace by your manager ?  
☐ YES  
☐ NO, give explanation\_\_\_\_\_.  
☐
- 8) Do you have chance to get further education or training if you intend to develop yourself on skill or knowledge?  
☐ YES, how\_\_\_\_\_.  
☐ NO
- 9) Would you please show examples that make your deep impression during the work in XXX COMPANY?  
\_\_\_\_\_.

#### **HSE:**

10) Do you know the HSE requirements of the XXX COMPANY?

☐ YES give examples \_\_\_\_\_

☐ NO

11) Before you begin a new work, does someone introduce the situation and surrounding environment to you and give you a training or direction on performance?

☐ YES

☐ NO give explanation \_\_\_\_\_

12) Have you ever got the training on HSE and how much do you know your working safety situation, problems and how to handle it.

☐ YES

☐ NO give explanation \_\_\_\_\_

13) What will you do when work is not safe?

\_\_\_\_\_.

**Others:**

14) Do you know what is expect of you in you job?

\_\_\_\_\_

15) Does your line manager help you and review the targets?

\_\_\_\_\_

16) Are you believe that XXX COMPANY staff are recruited or promoted based on their performance?

\_\_\_\_\_

17) Does XXX COMPANY provide good working conditions, payments, benefits?

\_\_\_\_\_.

18) Do you believe that your personal records( medical, pay and others) are confidential?

\_\_\_\_\_

19) What is your comment to company's personal development policies?

\_\_\_\_\_.

20) What about your impression on company atmosphere?

☐ Good business culture, people are Friendly to each other

☐ Like other place, just for work.

☐ Not good or no comments.

21) Which aspects do your think is highlight or lowlight for XXX COMPANY, give example?

\_\_\_\_\_

**Open questions:**

22) What do you suggest to company development from your perspectives?

\_\_\_\_\_.

B, For the manager:

Name: \_\_\_\_\_

Working position: \_\_\_\_\_

These questions are intended to serve as guidelines in interview with managers in XXX COMPANY.

**Warming up question:**

1) How long have you been working for XXX COMPANY? \_\_\_\_\_.

2) How do you introduce XXX COMPANY to people?, what are the main points?

\_\_\_\_\_

3) What about your expectation to the company? \_\_\_\_\_.

**General Questions:**

- 4) Have you ever communicated HSE principle to members of supply chain as part of your business strategy.
- ☐ Yes
- ☐ No
- 5) If yes, please describe the reaction you received.
- ☐ Indifference
- ☐ Interest but do not adopt
- ☐ Great interest and intent to adopt it.
- 6) If no, was it because
- ☐ You think it is not relevant to business
- ☐ You think the story is too negative
- ☐ You think it is too risky to share this sort of information
- ☐ Other stories or principle about the company are more central to the corporate strategy.
- ☐ You believe you need to know more yourself before disclosing this material
- 7) Would you please show an example that makes your deep impression during the work in XXX COMPANY?
- \_\_\_\_\_.

**HSE:**

- 8) Does XXX COMPANY have HSE requirements? What? And from where? How to implement?
- \_\_\_\_\_.
- 9) Have you faced the problem with local community about HSE issues?
- ☐ Yes, please give examples\_\_\_\_\_.
- ☐ No
- 10) When you communicated with local government, have you ever mentioned your HSE principle as a topic, why?
- ☐ Yes, we think it is a comparative advantage
- ☐ Yes, we think that is important for a chemical company
- ☐ No, we do not think they are interested in it
- ☐ No, we think it is too negative.
- 11) Have you organized a training session for employee about road safety?
- ☐ Yes
- ☐ No
- 12) When you visited your workshop, have you talked about HSE with your colleagues?
- ☐ Yes
- ☐ No
- 13) Are staffs confident to report accidents?
- \_\_\_\_\_.
- 14) What are the tangible signs of XXX HSE attitude?
- \_\_\_\_\_.

**Others:**

- 15) How to communicate with your colleagues?
- \_\_\_\_\_.
- 16) What is your comment to company's personal development policies?
- \_\_\_\_\_.

17) What about your impression on company atmosphere?

- ☐ Good business culture, people are Friendly to each other
- ☐ Like other place, just for work.
- ☐ Not good or no comments.

18) What is your business culture?

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19) How about your relationship with business partners and government?

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20) What is the main obstacle during the implementation of policy like HSE and corporate social responsibility?

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21) Which aspects do you think is highlight and lowlight for XXX COMPANY, give example?

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**Open questions:**

22) What about your future planning for company development?

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C, For the contractors:

Name: \_\_\_\_\_

Status: \_\_\_\_\_

These questions are intended to serve as guidelines in interview with contractors of XXX COMPANY.

**Warming up question:**

1) What about the relationship of your personal or company with XXX COMPANY?

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2) Is XXX COMPANY your only partner?

- ☐ Yes
- ☐ No

**HSE:**

3) What is the main HSE issue for you or your company?

---

4) Have you faced the problem about HSE issues?

- ☐ Yes
- ☐ No

5) Do you have HSE policies?

- ☐ Yes
- ☐ No

6) Have you ever known about HSE principle from XXX COMPANY?

- ☐ Yes
- ☐ No

7) Have you ever communicated about your difficulties with XXX COMPANY like health, safety or other issues?

- ☐ Yes
- ☐ No
- 8) If yes, please describe the reaction you received.
  - ☐ Active response, enquire you and want to help you.
  - ☐ Response, but let you solve it by yourself.
  - ☐ No response.
- 9) If no, how about your response.
  - ☐ Keep it without change
  - ☐ Solve it yourself
  - ☐ Look for other partners

**Others:**

10) How do you describe your relationship and interaction with XXX COMPANY?  
\_\_\_\_\_

11) Have you ever had exchanges on HSE with XXX COMPANY either through materials, discussion, coaching or formal training, what is the topic?

- ☐ Yes \_\_\_\_\_
- ☐ No \_\_\_\_\_

12) What is your comment to company's business ethics as far as you know, please give examples?  
\_\_\_\_\_.

13) What about your impression on company management?

- ☐ Good management system, people are Friendly to each other
- ☐ Like other place, just so.
- ☐ Not good or no comments.

14) Do you feel XXX COMPANY feel that XXX COMPANY listens to your points of view?  
\_\_\_\_\_

15) Which aspects do your think is highlight or lowlight for XXX COMPANY, give example?  
\_\_\_\_\_

**Open questions:**

16) Do you have some suggestion to XXX COMPANY in term of development or business strategy?  
\_\_\_\_\_.

D, For the governmental officials:

Name: \_\_\_\_\_

Status: \_\_\_\_\_

These questions are intended to serve as guidelines in interview with local governmental officials.

**Warming up question:**

1) What is the main topic between you and XXX COMPANY?  
\_\_\_\_\_.

2) What about the relationship of your department with XXX COMPANY?

\_\_\_\_\_.

**General Questions:**

3) Which aspects do you think is important of XXX COMPANY for local development?

- ☐ Economic development and attracting investments
- ☐ Provide local employment
- ☐ Promote company HSE performance and influence to lead other companies

**HSE:**

4) What about governmental policy to JV company on HSE regulation?

\_\_\_\_\_

5) Have you ever heard about HSE issues from XXX COMPANY?

- ☐ Yes, what\_\_\_\_\_.
- ☐ No

**Others:**

6) Have you ever communicated with XXX COMPANY about policy regulations?

- ☐ Yes
- ☐ No

7) If yes, please describe the reaction you received.

- ☐ Active response, enquire details and want to play a leading role among local enterprises.
- ☐ Response, just implemented it.
- ☐ Response, but implementation is not good.
- ☐ No response.

8) What is your impression about XXX COMPANY?

\_\_\_\_\_.

9) What is your comment to company's business ethics as far as you know, please give examples?

\_\_\_\_\_.

10) What about your impression on company management?

- ☐ Good management system, people are Friendly to each other
- ☐ Like other place, just so so.
- ☐ Not good or no comments.

11) Which aspects do your think is highlight or lowlight for XXX COMPANY, give example?

\_\_\_\_\_.

**Open questions:**

12) Compared with other enterprises, what is the special point for XXX COMPANY? what about your suggestions to XXX COMPANY?

\_\_\_\_\_.