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# **The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA**

A thesis presented in partial fulfilment of the requirements for the degree of

Master of Environmental Management

at Massey University, New Zealand.

**Lucy Martinez**

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## Abstract

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The study reviews the initiation and development of environmental management systems (EMSs) and how EMS and corporate responsibility (CR) reporting developed over time in New Zealand, the United Kingdom (UK) and the United States of America (USA). Comparing the three countries provides New Zealand with a global perspective to identify if northern hemisphere countries have better systems. The study has two aims:

1. To compare and contrast the initiation and development of EMSs and CR reporting in New Zealand, the UK and the USA; and
2. To suggest strategies New Zealand's government and businesses could use to improve EMS and CR reporting systems, and thereby strengthen the country's business environmental performance.

The scope of the thesis is the urban corporate and manufacturing sectors; the timeframe is from the mid-twentieth century to the present. Scholarly journal and media articles, industry publications and reference books used for the research were accessed via the ProQuest database, Massey University online library, the New York Public Library and Google.

Results show that there has not been a clear and consistent pattern of EMS development in each study country, but each country has been a leader and innovator at different stages. An initial scan suggested that New Zealand has lower ISO 14001 certification numbers and CR reporting rates than the UK and USA. When examined more closely, results show that New Zealand's ISO 14001 certification intensity (rather than raw numbers) is actually higher than the USA, although New Zealand and the USA both lag behind the UK. Results also show that CR reporting is now completely mainstream business practice worldwide. Despite this, New Zealand's CR reporting is limited; unlike the other two study countries, this form of reporting is not legislated.

Conclusions were that economic instruments in the UK and USA are shown to be an effective way to incentivise clean business practices and increase EMS uptake. Multinational companies increasingly scrutinize suppliers' environmental credentials, which will impact New Zealand's SMEs more into the future. ISO 14001 is a necessary universal tool to remain relevant in today's global economy, which may incentivise higher uptake among New Zealand's export businesses.

It was recommended that New Zealand's government form a legislative requirement for CR reporting, and firms should be encouraged to look to organizations such as the NZ Sustainable Business Council, the Global Reporting Initiative and the International Integrated Reporting Council for guidance on CR reporting.

**Key words:** ISO 14001, environmental management, environmental management systems, corporate responsibility reporting, New Zealand, UK, USA,

L. C. Martinez

Candidate for the degree of Master of Environmental Management, October 2017

Prof. John Holland, Ph.D.

Institute of Agriculture and Environment

Massey University, Palmerston North, New Zealand

John Holland, Ph.D. \_\_\_\_\_

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# Table of contents

|   |           |
|---|-----------|
| <b>Chapter 1: Introduction .....</b>  | <b>7</b>  |
| 1.1 Background .....  | 7         |
| 1.2 Using an EMS as part of a sustainable business .....  | 9         |
| 1.3 Patagonia Inc.'s embedded EMS .....   | 11        |
| 1.4 Problem statement .....   | 17        |
| 1.5 Aim .....   | 18        |
| 1.6 Objectives .....  | 18        |
| 1.7 Importance of research .....  | 18        |
| 1.8 Scope and limitations.....  | 19        |
| 1.9 Outline of thesis.....  | 19        |
| <b>Chapter 2: Methodology.....</b>  | <b>22</b> |
| 2.1 Data collection method and study design .....   | 22        |
| <b>Chapter 3: Early inclusion of environmental considerations into government policy and business management.....</b> | <b>24</b> |
| 3.1 NZ historical context in which EMS were developed .....   | 26        |
| 3.2 UK historical context in which EMS were developed .....   | 29        |
| 3.3 USA historical context in which EMS were developed .....  | 31        |
| 3.4 Chapter 3 recap.....  | 33        |
| <b>Chapter 4: Early environmental management systems and EMS models .....</b>   | <b>34</b> |
| 4.1 The first environmental management systems .....  | 34        |
| 4.2 Stakeholder theory .....  | 35        |
| 4.3 New tools for managing environmental outputs .....  | 35        |
| 4.4 Sustainable development .....   | 38        |
| 4.5 Porter Hypothesis .....   | 39        |
| 4.6 UN Conference on Environment and Development.....   | 40        |
| 4.7 UN World Summit for Sustainable Development.....  | 43        |
| 4.8 Kyoto Protocol .....  | 43        |
| 4.9 Environmental management models & environmental performance evaluation systems .....                              | 44        |
| 4.10 Early EMS activity in NZ .....   | 48        |
| 4.11 Early EMS activity in UK .....   | 50        |
| 4.12 Early EMS activity in USA .....  | 52        |
| 4.13 Chapter 4 recap.....   | 55        |
| <b>Chapter 5: Recent developments in EMS and CR reporting .....</b>   | <b>56</b> |

|   |   |            |
|---|---|------------|
| 5.1   | New tools for measuring environmental performance .....           | 57         |
| 5.2   | Formal environmental management standards .....                   | 57         |
| 5.3   | Drivers of EMS uptake .....                                       | 63         |
| 5.4   | Barriers to EMS uptake .....                                      | 65         |
| 5.5   | Corporate responsibility reporting .....                          | 65         |
| 5.6   | International voluntary EM and CR standards and initiatives ..... | 71         |
| 5.7   | Climate change and EMS .....                                      | 76         |
| 5.8   | Development of EMS & CR reporting in NZ .....                     | 77         |
| 5.9   | Development of EMS & CR reporting in UK.....                      | 81         |
| 5.10  | Development of EMS & CR reporting in USA.....                     | 85         |
| <b>Chapter 6: Conclusion .....</b>                                  |   | <b>90</b>  |
| 6.1   | Findings .....  | 91         |
| 6.2   | Implications.....   | 102        |
| 6.3   | Final note .....  | 102        |
| <b>Appendix 1: Patagonia Inc.'s environmental initiatives .....</b> |   | <b>103</b> |
| <b>References .....</b>   |   | <b>106</b> |

## List of figures

**Figure 1:** simple continuum model of environmental management

**Figure 2:** Steger's generic environmental strategies model

# Chapter 1: Introduction

## 1.1 Background

In a world with a growing population, unmitigated inequality and an environmental base under huge pressure, governments and business leaders have a responsibility to innovate and create sustainable business solutions; much more can be done to institute change and break the business-as-usual cycle. Solutions created by business can have an impact at the speed and scale needed to foster lasting change (Confino, 2012). Improving the environmental performance of multinational companies such as StarBucks and McDonalds could have global impacts because of the scalability of such companies' changes and their reach into many countries. This is especially important now because global production and consumption are forecast to quadruple by 2030 (Smith, 2013). An environmental management system (EMS) is a framework for strategically managing an organization's impacts on the natural environment by improving its environmental performance (Worthington, 2013). EMSs are a relatively new concept; formal EMSs emerged in the early 1970s. The frameworks vary between businesses, but can include energy use, emissions, waste, consumption of materials and transport. More and more businesses around the world are implementing EMSs, and corporate responsibility reporting is now an essential business management tool.

### ***What is an EMS?***

An EMS is an effort, motivated from within a company, to integrate environmental considerations into business decisions and operations. Companies developed specific management systems to deal with environmental issues even before the ISO 14001 EMS standard was introduced. These systems involve a range of practices, such as specifying environmental goals, evaluating environmental risks when deciding on production methods, training employees and providing incentives to carry out these environmental practices, self-assessment/audit, continually improving the performance and system, and providing environmental reports to stakeholders. So an EMS is the framework to provide a systematic method to managing environmental issues by encouraging decisions to be based on full information about resources, technologies and processes (Khanna and Kumar, 2011).

In the early 20<sup>th</sup> century there was a lack of standards for industrial products and processes. People and institutions mostly responded to environmental change as it was experienced rather than planning



strategically to prevent or manage impacts. Environmental management was initiated with the early creation of environmental regulations and laws in the 1970s, followed by the appearance of voluntary codes of conduct in businesses and later, development of international environmental management guidelines and standards. Increased knowledge has provided a basis for anticipatory responses, and business leaders and policy makers now have a variety of tools to use (Stern *et al.*, 1992). Research suggests that implementation of an EMS can provide a number of economic and non-economic benefits for an organization (Atkin *et al.*, 2012; Khanna and Kumar, 2011; Psomas *et al.*, 2011; Melnyk *et al.*, 2003). While a firm does not necessarily need a formal EMS to act in an environmentally responsible manner, focusing on sustainability helps a firm manage social and environmental impacts as well as improve efficiency and natural resource stewardship; it is also a key component of stakeholder, shareholder and employee relations.

The thesis investigates the predominant activities in New Zealand (NZ), the United Kingdom (UK) and the United States of America (USA) as related to environmental management systems (EMS) and corporate responsibility (CR) reporting. The focus of this thesis is on EMS and corporate responsibility reporting related activities and regulation, rather than environmental regulation in general, and also examines the modern environmental movement as it affected the development of environmental management systems. The terms 'conservation' and 'environmentalism' are often used synonymously, but there is a difference. Conservation is the planned management of a natural resource to prevent exploitation or destruction, and environmentalism is defined as advocacy for preservation, restoration, or improvement of the natural environment (Merriam-Webster, n.d.). Although the concepts of conservation and environmentalism date back to the 1800s and earlier, the scope of the thesis is from the outset of the modern environmental movement, around the mid-20<sup>th</sup> century to the present because EMSs began to be formulated around this time.

In the early 20<sup>th</sup> century there was a lack of standards for industrial products and processes. Environmental management began to develop with the early creation of environmental regulations and laws in the 1970s, followed by the appearance of voluntary codes of conduct in businesses and later development of international environmental management guidelines and standards. In the past, people and institutions mostly responded to environmental change as it was experienced. Increasing scientific knowledge has meant that there is now a basis for anticipatory responses. Business leaders and policy

makers now have a variety of options: some involve anticipatory action, and some depend on experiencing global change (Stern *et al.*, 1992).

The three countries selected for study in the thesis were chosen to provide a global perspective on EMS and CR reporting. Each country's size, population, geography and systems of environmental law and regulation are very different, so their approach to EMS and corporate responsibility reporting can provide a global perspective; as more is learnt about EMS differences between countries, the potential to improve these systems increases. Examining the development over time of EMS between different countries enables analysis and problem solving for the present day. Change can be prompted by raising national concern over weak environmental outcomes compared to international benchmarks; knowledge of high-performing countries can inform the way to improve the practices of countries with weaker environmental performance.

## **1.2 Using an EMS as part of a sustainable business**

Knowledge of high-performing environmental management systems can inform the design of improvements for weaker systems. An EMS generally is a process within an organization to identify, measure, and regulate a company's environmental impacts. An EMS can be a framework, practice, process, set of tools, or even an effort to strategically manage an organization's impacts on the natural environment by improving a firm's environmental performance (Worthington, 2013). An EMS must be based on foundations of environmental compliance, pollution prevention and continuous improvement if it is to be useful and effective as a planning and operational tool. Key components of a successful EMS are that it follows the three 'C's: Commitment – the EMS is supported at all levels of the organisation. Continuity – the EMS keeps operating once established. Continual improvement – the organization works continuously to reduce its environmental footprint (Waste and Resources Action Programme, 2015).

An environmentally responsive firm is one that has been through a deliberate process of change to address adverse environmental impacts of its activities. These changes can be to the business's policies, values, products, systems, processes and/or technologies. Environmentally responsive firms have been defined in the literature in numerous ways, and include three important factors. Firstly, the organization must create a formal plan (such as an EMS) to deal with environmental issues. Secondly, the organization should have corporate initiatives designed to mitigate a firm's impact on the natural

environment, and lastly, should recognise the importance of environmental issues and integrate them into the organization's strategic plans (Worthington, 2013).

A sustainable business is often described as one that manages the triple bottom line: people, planet and profit. A number of studies have tried to pinpoint the indicators required for a business to be considered sustainable, for example equity, life cycle impacts, biodiversity protection, greenhouse gas emissions, and water and air pollution (e.g. Diesendorf, 2000; Shrivastava, 1996). Definitions can focus on different elements such as environmental impact or an organization's principles. A systemic view of sustainability measurement incorporates both tangible and intangible indicators, such as the organization's vision and goals and corporate attitudes to sustainability as well as actions to reduce environmental impact. In addition, the need for better collaboration between organizations to drive systemic change towards sustainability is becoming increasingly recognized (Nidumolu *et al.*, 2014). Regardless of the actual definition, there is no final destination in the corporate shift towards sustainability, and efforts should be an ongoing process of improvement (Worthington, 2013).

### ***Embedded or "bolted-on" sustainability***

For most companies sustainability is a "bolted-on" optional extra to the core business strategy; an EMS is not embedded into the core strategy of the organization and does not affect everything the business does. Despite best intentions, bolt-on sustainability initiatives are an afterthought in an attempt to show that the business is environmentally and socially responsible. Highlighting one sustainable part of a business activity tends to inadvertently draw attention to the unsustainability of the rest of the business activities; if one line of a clothing brand is touted as sustainable, what of the other lines under the same brand? When sustainability is bolted-on, it becomes the responsibility of an individual or one department, who may just find and communicate the things the company already does that are freshly packaged as efforts at sustainability (Laszlo and Zhexembayeva, 2011).

Three main indicators reveal if an organization's sustainability is bolted-on. Firstly, the sustainability strategy is separate to the main business. Secondly, the organization does not collaborate closely with customers, suppliers, NGOs and other stakeholders. Thirdly, the organization considers corporate responsibility to be something that must be balanced with and traded off against economic interests. The bolt-on approach to sustainability is still the prevailing practice, to the point that corporate

sustainability efforts these days are often met with cynicism among both corporates and stakeholders (Laszlo and Zhexembayeva, 2011).

The alternative to bolt-on sustainability is to embed environmental and social values into the organization. Sustainability can be embedded into core business strategy with no trade-off in price or quality. Embedded sustainability means that an organization decentralizes responsibility for sustainability, and has a better awareness of its risks and opportunities. Embedded sustainability may even enable a company to leverage environmental challenges, such as climate change, to ensure the company continues to grow and profit for many years into the future (Laszlo and Zhexembayeva, 2011). Embedded sustainability is being increasingly pursued by organizations around the world; bolt-on sustainability is no longer enough when faced with issues of declining resources, increasing stakeholder expectations, and increasing transparency. Companies such as Patagonia are leading the way and in doing so are gaining a competitive advantage.

### **1.3 Patagonia Inc.'s embedded EMS**

Many firms now recognize that improving their environmental performance is a matter of more than just compliance. Stakeholders and customers increasingly expect businesses to commit to decreasing their environmental impacts. An EMS, as a systematic approach to managing an organization's environmental impacts, can provide the framework to control and improve environmental performance. Investigating an environmentally innovative company can illustrate the value of incorporating sustainable business practices.

Patagonia Inc. (Patagonia) is a US-based brand name international outdoor apparel firm with a reputation for strong environmental and social policies. Patagonia provides an example of a company that is successfully incorporating many sustainable elements into its operations, including an EMS that encompasses its whole operation, and environmental expectations from its suppliers. An EMS can focus on systemic elements such as an organization's principles, or environmental impact elements such as life cycle impacts, biodiversity protection, greenhouse gas emissions, and water and air pollution. Collaboration between organizations is now recognized as a necessary instrument to accelerate the shift to a more resource-efficient, sustainable economy. Embedded sustainability is also being increasingly pursued, whereby the sustainability objective affects everything the business does. Businesses

attempting to become more environmentally and socially responsible recognize that there is no final destination on the sustainability pathway.

### **1.3.1 Patagonia's sustainability objectives and solutions**

Patagonia Inc. has seven main characteristics that provide a good example to other companies of how an effective EMS in a sustainable business looks. The company has an embedded EMS that follows the three c's (commitment, continuity and continual improvement), it carries out life cycle analyses and works with the supply chain, and collaborates with other apparel retailers on environmental industry standards and initiatives. Patagonia Inc. is making an effort to change the way business is done within and beyond the firm, even if it means lower profits, and is one of a growing number of companies putting environmental expectations onto its supply chain (Chouinard and Stanley, 2012).

#### **a) Embedded sustainability/EMS**

Patagonia has embedded sustainability values into its core business: its mission statement, core values and philosophies. Patagonia has an EMS that underpins all of the company's business operations, a "collective consciousness of how the company does business" (Bro, C., personal communication, December 15, 2015). Tinsley (2014) states that an effective EMS improves corporate environmental performance by involving people in the environmental activities in the firm.

Patagonia's mission statement is an attempt to resolve the dilemma of environmental values versus business success in two ways: by aiming to minimize harm from the business's operations and by devoting a portion of the business's earnings to protecting the environment.

Patagonia's core values include quality and environmentalism, instead of being purely concerned with the economic bottom line; this creates incentives for senior executives, management and employees to recognize good environmental performance (Landis-Gabel and Sinclair-Desgagne, 1994). In most companies, the fiduciary duty of the directors is to make as much money as possible for shareholders, sacrificing other considerations. Once a company goes public, carries out succession planning or raises third party capital, the company's original mission is usually compromised or lost (Carus, 2012). Patagonia is privately owned, so its leaders have more power over its workings and can make riskier decisions than the leaders of publicly owned companies.

Patagonia's philosophies guide the company through the process of designing, making and selling clothing, and weave environmental and social considerations into product design, production, finances and human resources. The philosophies are communicated to everyone in the company to guide employees (Chouinard, 2006), and are another way of embedding sustainability throughout the business.

### **b) Life cycle analyses and working with the supply chain**

Patagonia began to carry out life cycle analyses (LCA) (see section 4.3.3 for more LCA information) of the four main materials in its products in 1991 to trace the materials' environmental impact. Since the first four analyses, 150 more have been completed for the company's most popular products, covering 80 percent of sales. Factors such as fibre at its point of origin, weaving or knitting, dyeing, and sewing were traced, as well as carbon emissions, energy use, waste, and travel distance (Chouinard and Stanley, 2012). Patagonia started the Footprint Chronicles in 2007, an interactive website that showed the tracing of a number of Patagonia products from design to delivery, to show the results of the LCAs. Since then, other companies have followed suit in providing innovative ways of mapping out their supply chains to be more transparent, for example NZ outdoor apparel company Icebreaker launched its merino wool traceability tool 'Baacode' in 2008 (Weinstein, 2009). As multinational companies increasingly carry out LCA, the environmental credentials of their suppliers will be more closely scrutinized.

Patagonia has worked with suppliers to ensure that its products are produced under safe, legal, humane and fair conditions. Where possible, the company tries to use recycled and recyclable materials with a reduced environmental impact (Worthington, 2014). Patagonia began working with Bluesign technologies in 2000 to evaluate and reduce resource use in their materials supply chain, and to help manage the chemicals used in the process. Bluesign technologies looks at every step in the textile supply chain to ensure chemicals, processes, materials, and products are safe for the environment and people (Patagonia, n.d. a). Patagonia also requires its suppliers to map their own supply chains – something else that will increasingly affect small businesses in future.

### **c) Corporate responsibility reporting**

Corporate responsibility (CR) reporting is now an essential business management tool, and the debate on whether companies should report on corporate responsibility or not is long over (KPMG, 2013a) (see sections 4.5 and 4.10.6 for more information). Patagonia carries out CR reporting in three main ways, through the Footprint Chronicles, the Annual Benefit Corporation Report and the Environmental Initiatives Booklet. The Footprint Chronicles is published on the Patagonia website; it is organized by product and provides information about the company's supply chain factories, including factory audit result details and work to improve factory conditions. Benefit Corporations are required to produce an annual benefit report detailing the company's environmental and social performance. The annual Environmental Initiatives Booklet reviews the company's environmental activities and the grants made through 1% for the Planet (Patagonia Works, 2013).

#### **d) Collaboration with other companies**

The need for better collaboration between organizations to drive systemic change towards sustainability is becoming increasingly recognized. It is imperative that businesses work together to find ways to preserve and protect the natural commons while accessing their potential. One of the best ways to advance systemic collaboration is by developing industry performance standards (Nidumolu *et al.*, 2014). Patagonia has collaborated with a number of other organizations over the years to develop initiatives aimed at reducing the environmental impact of doing business. Initiatives include the Sustainable Apparel Coalition, 1% for the Planet, and the Common Threads Initiative.

Patagonia collaborated with Walmart (America's biggest retailer) in 2009 to create the **Sustainable Apparel Coalition** (SAC). Their mission was to gather together textile, apparel and footwear peers and competitors to develop a universal way to measure sustainability performance. The Coalition's aim is to minimize unnecessary environmental harm from these industries, and for the industries to positively impact the people and communities associated with their activities (Sustainable Apparel Coalition, 2015). The SAC is an example of an innovative model driving systemic change in the apparel industry, and will impact the way these companies' suppliers do business. The SAC's environmental measurement index (the Higg Index) has started a sustainability race between companies – those that score lower than competitors are impelled to improve their performance. To quote Nidumolu *et al.* (2014), the SAC has “fostered a strong culture of trust, openness, and collaborative spirit among fierce competitors.”

Patagonia has been providing cash funding and in-kind donations to community environmental groups since 1985. In 2002, Yvon Chouinard and Craig Mathews, owner of Blue Ribbon Flies, created non-profit alliance **1% for the Planet** to encourage other businesses to do this too. The alliance is a group of businesses committed to donating a portion of their proceeds to environmental organizations. The goal is to empower everyone to drive major initiatives encompassing wildlife, food, water, climate, environmental education, environmental human health, and land stewardship (Mathews, 2013), and is a good example of how companies can collaborate to positive effect.

The **Common Threads Initiative** was set up to encourage customers to buy and use clothes more sustainably, embracing the 5 Rs of Reduce, Repair, Reuse, Recycle, Reimagine. In the spirit of the 5 Rs, Patagonia increased the quality of their products in the 1990s to make them last longer, and the company encourages its customers to sign a responsible product stewardship pledge. It is a working example of extended producer responsibility (EPR) (see section 4.3.5 for more information). Patagonia provides a free or fair price repair service and advice to consumers on how to fix problems with their clothes to avoid them being thrown away; the company also encourages customers to sell unwanted Patagonia clothes through the Common Threads website or eBay. Worn out products can be returned to Patagonia to be recycled (Suazo *et al.*, 2012). This initiative provides an idea for an EMS that addresses a company's product waste, something that all producing companies may need to look into in the future as part of EPR.

#### **e) Culture of continuous improvement**

To be responsible, a company must carry out every improvement possible. The 'check' phase of the environmental management cycle (of Plan, Do, Check, Act) helps an organization to focus on performance in relation to its environmental policy and to identify problems and their solutions (Worthington, 2013). Patagonia has a culture of continual checking and acting on improvements. Three of the issues Patagonia has highlighted to continue working on are providing a living wage for supply factory workers, responsible purchasing practices, and traceability of products from raw materials to the end product (Patagonia, n.d. b). In most cases Patagonia's environmental and social improvements have been brought about from impetus within the company (endogenous change – see section 5.3). In other cases, the company has been forced to make changes after exposure and public pressure (exogenous change). The two examples below show how companies are very much in a fish bowl these days with NGOs, government, and the public looking in.



International environmental group Greenpeace challenged the environmental credentials of Patagonia and other outdoor apparel makers in 2015 over their use of perfluorinated chemicals (PFCs) routinely used in waterproof gear. A study (Greenpeace, 2015) found traces of PFCs in high-altitude lakes around the world. Patagonia had already changed from using “long-chain” PFCs to “shorter-chain” PFCs because byproducts of short-chain PFCs break down faster in the environment. However the Greenpeace research found traces of both short- and long-chain PFCs in its study of remote lakes (Politi and Bond, 2015). Patagonia is continuing to research water repellent chemistry to find a solution with lower environmental impact. The company stated that many water repellent finishes discovered do effectively repel water but they rapidly lose effectiveness, which shortens the garment’s lifetime; this in turn creates new environmental problems as garments are replaced more often (Patagonia, 2015a).

Patagonia partnered with Argentinian sheep ranches for wool supply and to regenerate the grassland ecosystem as a programme named Ovis 21. In 2015, PETA (People for the Ethical Treatment of Animals) posted video footage of sheep being mistreated at Ovis 21. A social media firestorm ensued and many consumers swore off Patagonia products. Soon after, Patagonia publicly apologized and announced it would stop buying wool from Ovis 21. Patagonia also pledged to continue efforts to lead in the wool industry’s Responsible Wool Standard (which was released in June 2016) (Patagonia, 2015b).

#### **f) Efforts to change the status quo**

The biggest conflict in sustainability discourse is between constant expansion of production versus ecological limits imposing boundaries. Firms wanting to be seen as responsible have tried to combine these opposites by creating a middle-ground dialog that only reinforces the present reality of business as usual and focuses attention away from our current unsustainable growth trajectory (Mitchell, Curtis and Davidson, 2012).

“No matter how much better we make the industrial system, it’s still predicated on making more things every year... There is nothing sustainable about more efficiently produced bikes, jackets and blenders unless we figure out how to address the fundamental growth of the consumption-based model” (Ruben, 2014).

Patagonia launched the Responsible Economy campaign in 2013, which examined how a future sustainable economy will look while acknowledging the finite limits to growth. The campaign stepped up Patagonia's advocacy by aiming to shape policy and influence businesses as well as reaching consumers (Matthews, 2013). Patagonia founder Yvon Chouinard (2013) stated at the beginning of the campaign that making things in a more responsible way is a good start to finding solutions to the environmental crisis, but "in the end we will not have a sustainable economy unless we consume less." Chouinard acknowledges that the company harms nature more than they mean to, and takes back more than they give. He states that until the company can carry out its business without jeopardizing nature's ability to regenerate itself, it cannot be called 'sustainable' (Chouinard and Stanley, 2012). In the meantime, the company continues to look for ways to make products less disposable and to challenge consumers to purchase responsibly (Ryan, 2014).

#### **g) Thinking outside the company: Patagonia's external environmental initiatives**

One of the reasons Patagonia stands out from other companies is because the company's environmental initiatives go much further than an add-on EMS. Patagonia is at the frontier of companies investigating how businesses can make a difference in a world of decreasing resources. Patagonia has collaborated with a number of other organizations over the years to develop initiatives aimed at reducing the environmental impact of doing business – Appendix 1 is a list of these initiatives.

## **1.4 Problem statement**

NZ appears to lag behind the UK and USA in numbers of ISO 14001 certifications and corporate responsibility reporting rates. Many studies have investigated development of EMS and corporate responsibility reporting in individual countries and compared EMS development in similar or neighbouring countries, but there is no comprehensive study comparing and contrasting NZ, the UK and the USA. Although these countries have disparate economies, geography and political systems, as more is learnt about EMS differences between countries, the potential to improve these systems increases. Comparing NZ with the UK and USA provides a global perspective for NZ environmental practice and a context for how EMS and CR reporting could and should progress in NZ. An initial look at the raw numbers of ISO 14001 adoption and corporate responsibility (CR) reporting rates per country shows that NZ has a considerably lower rate of ISO 14001 adoption and CR reporting than the US or UK. This study will investigate if this is actually the case, and if so, the reasons for the lag. This study examines the ISO

14001 and CR data and the developmental paths of EMS between the three study countries to elucidate the differences.

## **1.5 Aim**

The aim of the research was to review the initiation and development of EMSs, how EMS and corporate responsibility (CR) reporting developed over time, and then compare NZ with the UK and USA to provide a global perspective for NZ and to identify if and why NZ is lagging these countries. The aim was also to suggest strategies NZ's government and businesses could use to improve environmental performance, and thereby strengthen NZ's EMS and CR reporting systems.

The research aim was met by answering the following three specific research questions:

1. Why and how were EMS initiated and developed in NZ, UK and USA?
2. What is the current status of EMS, ISO 14001 and corporate responsibility reporting in NZ, UK and USA?
3. What strategies could NZ businesses use to improve their environmental performance taking guidance from the other two study countries?

## **1.6 Objectives**

In order to achieve the aim, I:

1. Researched the historical context in which EMS were developed, limiting the scope of the timeframe to the advent of modern day environmentalism, around the time when environmental considerations began to be incorporated into business practices.
2. Compared and contrasted how EMS and corporate responsibility reporting developed and their current status in NZ, the UK and USA.
3. Analysed the information collected and used it to identify gaps in NZ's EMS and CR reporting frameworks. Having identified these gaps, I produced recommendations for NZ to improve its EMS and CR reporting frameworks.

## **1.7 Importance of research**

The thesis will contribute to the literature by comparing and contrasting NZ's EMS and CR reporting frameworks with the UK and USA and identifying if NZ lags behind the UK and USA. The research will

strengthen NZ's EMS and CR reporting frameworks by identifying gaps in the system and making recommendations on how to remedy these shortfalls.

## **1.8 Scope and limitations**

The thesis focuses only on the three study countries and only from when EMSs were first initiated around the mid-twentieth century. Environmentalism and conservation have a long global history, and each study country has many environmental regulations, so the thesis limits the review of environmental regulation to those related to EMS and CR reporting. Economic, political and social context has been included where required.

The purpose of this thesis is to investigate EMSs in the urban corporate and manufacturing sectors, not those natural resource use/agricultural activities covered under NZ's Resource Management Act (1991) (RMA). As such, detailed discussion of the strengths and weaknesses of the RMA falls out of the scope of this thesis.

The reporting landscape and EMS field are evolving extremely rapidly around the world, so it was difficult to be completely current. Even though the thesis is concerned with the three study countries NZ, UK and USA only, globalization means that country lines are becoming more blurred. A project may have originated or may be based outside the three study countries but impacts CR reporting and EMS. Some of the projects currently having a global impact are reviewed in chapter 4; there are approximately 380 arrangements around the world affecting the way organizations report on sustainability (Climate Disclosure Standards Board, 2015), so not all are covered. Studying and writing the thesis by distance whilst in the USA was a practical limitation in terms of ready access to NZ and UK literature not available online.

## **1.9 Outline of thesis**

The thesis is structured into five chapters, as outlined below.

### **1. Introduction**

The first half of the introduction provides a brief background to the research and outlines the research problem, aim, objectives, scope, approach and importance. The second half of the introduction

examines the definition of a sustainable business and investigates Patagonia Inc.'s sustainable business practices to illustrate the definition.

## **2. Methodology**

Describes the research strategy, how data was collected and how the analysis was developed.

## **3. Early inclusion of environmental considerations into government policy and business management**

Chapter 3 examines the historical context in which EMS were developed, how environmental considerations began to be included in business, and the circumstances that caused the first EMSs to be initiated.

## **4. Early environmental management systems and EMS models**

Chapter 4 examines the first formal EMS standards and global environmental developments, and summarises both EMS theory and first and second generation EMS models. The chapter also examines the early key policy developments relating to EMS in the three study countries.

## **5. Environmental management systems and corporate responsibility reporting: recent developments and current status**

Chapter 5 examines the further development and current status of formal EMS standards. Also examined are the drivers and barriers to EMS uptake, corporate responsibility reporting, voluntary international standards, and global sustainability initiatives. The final section explores recent developments and the current status of EMS and corporate responsibility reporting in the three study countries. Government and business-based EMS schemes continue to emerge in recent years in NZ with varying results. The environmental performance of NZ's top companies does not compare favourably with international companies but a comparison of ISO 14001 certification intensity in each study country shows that NZ has higher certification intensity than the US (see 5.1.1).

## **6. Conclusion**

Addresses the research aim and thesis objectives by providing an overview of concepts discussed in the chapters and synthesising the three research questions addressed in the body of the thesis:

1. Why and how were EMS initiated and developed in NZ, UK and USA?

2. What is the current status of EMS, ISO 14001 and corporate responsibility reporting in NZ, UK and USA?
3. What strategies could NZ businesses use to improve their environmental performance taking guidance from the other two study countries?

## Chapter 2: Methodology

The purpose of this thesis is to conduct a comparison between the environmental management systems and corporate responsibility reporting of New Zealand, the UK and the USA using the information sources of scholarly literature, mainstream press and reference books. To keep the scope of the effort to something that could be managed as part of a Master's thesis, the timeframe for the comparison has been limited to only from when EMSs were first initiated around the mid-twentieth century. Environmentalism and conservation have a long global history, and each study country has many environmental regulations, so the thesis limits the review of environmental regulation to those related to EMS and CR reporting.

### 2.1 Data collection method and study design

The database ProQuest, Massey University's online library, the New York Public Library and Google were used to access scholarly journal and media articles, industry publications and reference books. ProQuest Dissertation & Theses Global provided access to global graduate dissertations and theses. Massey University Library provided online access to reference books and many major scholarly article databases. Google searches unearthed articles from media and industry publications and Google Books provided some reference books. I telephoned Patagonia Inc.'s head office in California to discuss their EMS in more detail (C. Bro, personal communication, December 15, 2015).

Many search terms were used to find articles relevant to the topic, mostly different combinations of the terms "environmental management systems", "corporate responsibility reporting", "New Zealand", "United Kingdom", "USA", "ISO 14001", "environmental management regulations", "corporate responsibility regulations" "Patagonia". These are broad topics so searches revealed many scholarly articles. I selected articles for their relevance as I read them.

Qualitative and content analysis methods were used to examine the findings of relevant empirical and secondary research. Research was started by compiling a timeline of key EMS and CR reporting events for each country and fleshing it out by searching for more info on each topic as I went. After an initial list of references was identified and read, more comprehensive searches of the literature followed to pinpoint more detailed information.

Once the three countries' EMS and CR reporting systems had been compared and contrasted, a summary table was put together (see Chapter 6 Conclusion) to clearly identify gaps in NZ's system and devise solutions to these shortcomings based on the systems of the other study countries.

A citation list for each journal and media article and book referenced was prepared in the widely used format of the American Psychological Association (APA).



## Chapter 3: Early inclusion of environmental considerations into government policy and business management

The trajectory of the modern environmental movement and development of environmental management systems (EMSs) in each study country does not fit into a tidy life cycle progression. A number of factors were key in raising awareness levels and generally stimulating demands for environmental action at the government and corporate level in the mid-to-late 20<sup>th</sup> century globally (Worthington, 2013). EMS development was initially influenced by each country's societal interests and by specific environmental incidents in each country (Dryzek *et al.*, 2003). Although the origins of the conservation and environmental movements stretch back to the 1800s and earlier, this thesis is concerned with only the modern day environmental movement, a context in which EMS's were developed.

Industrial expansion after World War II proceeded without much awareness of its environmental impacts. Economic development created jobs and increased consumption, material well-being and government revenue to provide public services. To maintain employment and its related benefits, annual growth is needed, which in turn depends on free trade and technological advancement. Economic growth in the US and Europe in the late 1950s brought about the new form of economy of mass consumption (Worthington, 2013). The environmental issues arising from economic growth and mass consumption were mostly ignored at this time. Environmental issues were initially regarded as localized problems of water, air, and land pollution; these problems manifested as smog, increasing pollution of major rivers and lakes, and chemical poisoning, as industrial growth, urbanization, and vehicle use increased (World Commission for Environment and Development (WCED), 1987).

Milton Friedman, the Nobel Prize-winning economist summed up the prevailing economic view of the early 1960s:

“there is one and only one social responsibility of business – to use its resources and engage in activities designed to increase its profits... Few trends could so thoroughly undermine the very foundations of our free society as the acceptance by corporate officials of a social responsibility other than to make as much money for their stockholders as possible” (Friedman, 1962).

The 1960s saw the first major oil spills from supertankers, nuclear proliferation, and photos of Earth from space that highlighted to people the Earth's fragility (European Environment Agency, 2011). Rachel Carson's book *Silent Spring* (1962) is considered by many to have sparked the modern environmental movement. The book created widespread environmental awareness by presenting clear evidence that industrialization was threatening the planet (Shabecoff, 2001; Griswold, 2012). Several factors contributed to *Silent Spring* igniting an environmental movement: it focused on the specific issue of biodiversity loss, was written for ordinary people rather than academics, and was an international best-seller (Watson & MacKay, 2003).

Concern about environmental problems, particularly air and water pollution, continued to expand in the 1970s. This concern forced a broad discussion about environmental conservation and the possibility that economic growth could come up against resource constraints. Coherent systems of environmental law emerged in NZ, the USA and the UK, and special government agencies and departments to oversee environmental matters were established (Worthington, 2013), for example the UK Department of the Environment and US Environmental Protection Agency were established in 1970, and the NZ Environment Act a while later in 1986 (discussed further in sections 3.2, 3.3.1 and 3.1.2 respectively). The first major international conferences to address environmental issues, such as the United Nations Conference on the Human Environment in Stockholm in 1972 (discussed further below) and the First World Climate Conference in 1979, showed the shift in the way the environment was viewed.

At the corporate level, environmental awareness was beginning to enter the boardrooms of some major international companies. For example, in 1972 the Club of Rome, a group of high-level politicians, diplomats, scientists, economists, heads of state and business leaders, commissioned a study subsequently published as *The Limits to Growth* (Meadows *et al.*, 1972). The study investigated how exponential growth interacts with finite resources, and predicted that economic growth would not be able to continue indefinitely (Worthington, 2013; Garner & Keoleian, 1995). Its assumptions about growth rates were somewhat extravagant, but the report highlighted the link between economic growth and its environmental consequences (Clapp, 1994). Recent research (Turner, 2012) found the *Limits to Growth* forecasts accurate 40 years on.

### ***United Nations Conference on the Human Environment/Stockholm Conference***

For the first time in history, many nations got together at the United Nations Conference on the Human Environment (the Stockholm conference) in 1972 to discuss environmental problems and find solutions. The main focus was the relatively narrowly defined problems of air and water pollution (Conca and Dabelko, 2010), but the origin of formal environmental management systems, and eventually ISO 14001 (see Section 5.2 for more information about ISO 14001), could arguably be traced to the Stockholm Conference. Stockholm ultimately led to the 1987 report *Our Common Future* (discussed in Chapter 4), which was the first to touch upon sustainable development, and called for industry to develop EMSs to manage their environmental impact.

### ***Polluter Pays Principle (PPP)***

In 1972, the member countries of the Organisation for Economic Co-Operation and Development (OECD), (including UK and USA; NZ joined in 1973), agreed to incorporate a Polluter Pays Principle (PPP) into their environmental policies. Essentially an economic efficiency measure, PPP intended for the polluter to bear the cost of pollution control measures and reflect them in the prices of products (WCED, 1987). The aim was to prevent governments having to finance new environmental protection measures with subsidies and to prevent differences in subsidies between countries, which would cause distortions in international trade (OECD, 2002). Kneese & Bower (1979) documented economically efficient opportunities for pollution prevention in a series of industries during the 1970s. A few big corporations (such as 3M) started incorporating and promoting this idea around the same time. This provided a push to companies to start strategically managing their environmental impacts.

The PPP has progressed since 1972. Initially it was implemented in a strict sense, and was limited to costs of pollution prevention and control. Later it came to include compensation payments, taxes and charges, and is now becoming broader in certain instruments to encompass all pollution-related costs (OECD, 2002). Such policies encourage business to take responsibility for their environmental impacts, so it became a key driver for EMS-adoption by business.

## **3.1 NZ historical context in which EMS were developed**

As in the UK and USA, New Zealanders' awareness of environmental issues grew in the 1970s and 1980s. Issues such as pollution, erosion, reduction in quantity and quality of native environment and decline in native species were becoming evident after years of unsustainable land and resource use. As in other

countries, people had assumed they would always have clean air and water and easy access to a pristine native environment, but the quality of NZ's natural environment was under increasing pressure from human interests (Palmer, 2013).

### **3.1.1 Beginnings of NZ's modern day environmental movement**

The increased environmental consciousness that emerged in mainstream society in NZ in the 1960s led to the formation of the modern environmental movement. Ecological concepts, initially understood in relation to the control of agricultural pests in NZ, began to be commonly associated with landscape change in relation to electricity generation schemes of the 1960s. The Save Manapouri Campaign, which opposed raising the levels of Lakes Manapouri and Te Anau for power generation, was NZ's first mass environmental mobilization and the first time a major development was successfully thwarted on environmental grounds; it is generally considered to be the birth of New Zealand's modern day environmental movement (Mark, 2015; Ministry for Culture and Heritage, 2014; Nathan, 2015). New environmental planning procedures were gradually established from the late 1960s, motivated by public pressure as well as environmental concerns of those within government as a result of big electricity projects (Whittle, 2013).

While the Save Manapouri Campaign had a big impact on New Zealand environmental policy, Whittle (2013) argued that controversy over the Huntly Power Scheme, occurring around the same time as Manapouri, also had a considerable influence on the development of environmental policy in NZ. The Save Manapouri Campaign concentrated on impacts to scenery, but the Huntly scheme brought up issues that reflected the international environmental movement of the 1970s, including the consequences of air and water pollution on human and ecological health, and cultural impacts of environmental degradation. Throughout the Huntly development, the definition of what was included in an assessment of the environmental issues was continually expanded beyond the physical environment to include social and cultural issues such as Maori connections with ancestral lands and waters (Whittle, 2013).

### **3.1.2 Increasing inclusion of environmental considerations in government policy in NZ**

In the 1980s, NZ environmental law, policy and administration was a miscellany of uncoordinated and overlapping statutes, regulations, principles and procedures. The Town and Country Planning Act, the Water and Soil Conservation Act, and the Rivers Control Act and the Minerals Law were all under review

or being challenged for various reasons. Numerous catchment commissions, organisations and water boards acted under several and conflicting mandates (Frieder, 1997; Whittle, 2013).

### ***Think Big***

The Think Big period helped consolidate NZ's environmental community to oppose what they considered to be government-funded environmental destruction. 'Think Big' was a government economic strategy to carry out big industrial projects to broaden the export base, stimulate the economy and reduce NZ's dependence on imported oil in response to the oil shocks of the 1970s. The National Development Act of 1979 was the first effort at integrating the soil, water and mining laws for nationally significant projects. From overseas NZ was seen as a "pioneer of deregulation" (Frame *et al.*, 2003). The Act granted rapid siting of a number of large-scale projects such as a methanol plant in Taranaki. As New Zealanders were taking more interest in resource policy reform, this period galvanized the environmental community to action and spurred the modern environmental movement (Frieder, 1997).

### ***Waitangi Tribunal***

The Waitangi Tribunal (created 1975) brought further attention to issues of water resource sustainability and the price of downplaying the environmental consequences of the Think Big projects. The Tribunal outlined the costs to health and the environment of NZ's careless development practices in a series of findings on Maori claims against the Crown. The *Environment Reports* (Wheen and Ruru, 2004) drew attention to the extent to which industry and agriculture had polluted waterways and water bodies, and directly challenged proposed developments that would discharge industrial waste and sewage into rivers and ocean. The *Environment Reports* also led to an awareness of land and water resources as interconnected systems, in which water is an asset instead of a source of waste disposal (Wheen & Ruru, 2004; Pawson, 2012).

Until the Waitangi Tribunal was formed, Maori views had not played a significant role in the development of NZ's environmental policy. Maori pressure on government increased through the Tribunal, to honour the Treaty of Waitangi and to mend earlier wrongdoings. This resulted in Maori concerns and views having more political recognition (Buhrs & Bartlett, 1993). By the mid-1980s, Maori and environmentalists, although not completely united, had several of the same concerns, including consideration of Maori and environmental values in economic considerations, excessive government

power and inadequate protection of resources. Government pledged to review resource laws: in 1988 it announced a comprehensive review of the Town and Country Planning Act, Water and Soil Conservation Act, Soil Conservation and Rivers Control Act, Minerals Act, as well as the procedures for assessing environmental effects, which culminated in the Resource Management Act of 1991. These changes included the mana of Maori as Tangata Whenua and guardians of the land.

### ***Overhaul of NZ's environmental laws and departments***

NZ's Ministry for the Environment and the Department of Conservation were established as a reaction to the avaricious Think Big developments of the 1980s. The Environment Act 1986 established the Ministry for the Environment and the Office of the Parliamentary Commissioner for the environment, and was a move toward incorporating environmental values into public policy (Frieder, 1997; Pawson, 2012) (discussed further in Chapter 4). The Labour government promoted the idea of sustainability instead of Think Big's focus on natural resource exploitation (Taylor, 2013).

## **3.2 UK historical context in which EMS were developed**

The post-war years in the UK saw a continued move towards greater intensity of production, in both the sense of land conversion for urban-industrial use and in greater production from the food industry, but also increased public awareness of 'nature', as a result of school curricula and television (Clapp, 1994). The SS Torey Canyon oil spill in 1967 was a high profile ecological disaster considered to be a key influencer of the environmental movement in the UK (Worthington, 2013). The disaster left an international legal and environmental legacy that lasted decades and was influential in stirring environmental awareness in the UK around this time (Barkham, 2010). A sign of the growing concern for environmental matters in the UK was the increasing amount of space dedicated to environmental issues in the media in the 1960s and 1970s. A new journal, *The Ecologist*, published *Blueprint for Survival* in 1972, proposed a check to economic growth and new technology, and (somewhat inconsistently) a lessening of the powers of the state. Despite its weaknesses, *Blueprint for Survival*, like the Club of Rome's *Limits to Growth*, attracted a lot of attention (Clapp, 1994). The document further raised the profile of environmental issues and established the new environmentalism as a force to be reckoned with amongst policymakers (Wilson, 2008).

The growing environmental concern in Britain was met with a muted reaction compared to NZ and the USA. While in the other countries, this concern led to new environmental regulations, greater active political participation and numerous new politically active environmental pressure groups, the British government made only minor changes to the established practices. Traditionally, environmental groups (and other movement groups) were infrequently consulted by government departments in the 1970s, and the departments were generally unreceptive to environmental arguments and remained development-oriented (Dryzek *et al.*, 2003). The Department of the Environment, established in 1970, opened a new institutional channel for the environmental movement; by merging the environmental, local government and housing portfolios, it provided environmental groups with some access to central government (Dryzek *et al.*, 2003). Access to government was provided by custom in the UK, while in the US it was required by regulation or legislation. Environmental issues in the UK became downgraded and depoliticized, and outside mainstream national politics for nearly two decades – environmental representatives did not become recognized as lawful participants in environmental policy making until the early 1990s (Dryzek *et al.*, 2003).

### ***Government move away from regulation***

The British government moved away from regulation by undermining regulatory agencies through budget cuts and dismantling advisory bodies such as the Clean Air Council. Cabinet papers leaked in Thatcher's first year in government (1979) revealed plans to 'reduce over-sensitivity to environmental considerations'. Thatcher met with environmental non-governmental organizations and environmental agency representatives only once before 1988. Development approval processes were seen as unnecessary and were stripped out of regulation to avoid traditional arrangements of environmental consultation (Dryzek *et al.*, 2003). According to Simmons (2001), since the 1980s, central government increasingly left land use decisions in private hands, with less collective say. Thatcher was contemptuous of the environmental movement; she considered environmental issues 'humdrum' compared to fighting the Falklands War (Robinson, 1992; Dryzek *et al.*, 2003).

### **3.2.1 Increasing inclusion of environmental considerations in government policy in the UK**

The Single European Act (SEA) (1986) established the capacity of the EU to preserve, protect and improve the quality of the environment and ensure prudent and rational use of natural resources, and so allowed for further consideration of the environment in business (Coordinating European Council,

1987). Despite a long history of formulating and implementing environmental policies, environmental protection was not an explicit goal of the European Union (EU) until the SEA (Wilkinson, 1990); Britain signed in 1987.

In 1988, Thatcher acknowledged for the first time that it was necessary to act on global pollution and said Britain should have a lead role in the global response. Thatcher claimed her interest in environmental issues came from a political level – environmental concerns were being used to ‘attack capitalism, growth and industry’, and she wanted to reclaim environmental issues for the Conservatives (Smith, 2000). Thatcher’s newfound interest put environmental issues in the political mainstream, strengthened the environmental debate in Britain and raised the status of the environment portfolio (Dryzek et al., 2003). Thatcher played an important part in helping to set up the Intergovernmental Panel on Climate Change (IPCC). She had a significant influence in putting environmental issues on the agenda by adding her political gravitas to the environmental debate; she later switched to become a climate change skeptic, who viewed the IPCC as alarmist (Vidal, 2013).

Environmental representatives in the UK became recognized as lawful participants in environmental policy making for the first time in the early 1990s. Environmental groups’ senior members were now involved in government meetings on environmental issues (Dryzek *et. al.*, 2004) and environmental aspects were integrated into a range of policy areas. ‘Green ministers’ were established within all government departments, and all departments were required to assign a chapter of their annual report to environmental issues. This was a massive development in bringing environmental issues into business considerations, even though these “green plans” were not regulated by law, making them more likely to stand and fall with the particular government in office (Janicke and Jorgens, 2000).

### **3.3 USA historical context in which EMS were developed**

American environmentalism goes back well before the 19th century and is deeply rooted in the nation's history. The US has led the world in defining modern concepts of environmental protection. As in NZ and the UK, the USA’s modern environmental movement burgeoned in the 1960s as concern about environmental degradation, particularly pollution and its relationship to human health, ramped up with the rapid expansion of chemical use after World War II (Worthington, 2014; Dryzek *et al.*, 2003). This new movement had roots in the women’s, civil rights and anti-war movements (Shabecoff, 2001).



A number of large environmental groups were established in the 1960s and 1970s, such as the Audubon Society, the Natural Resources Defense Council and Friends of the Earth. The new environmental groups had a different focus to the older conservation groups: pollution and toxic substances and their effect on human health, instead of land and wildlife preservation (Shabecoff, 2001). These groups went on to dominate the subsequent years of organized environmentalism (Dryzek *et al.*, 2003).

As in NZ and the UK, the USA's modern environmental movement burgeoned in the 1960s as concern about environmental degradation, particularly pollution and its relationship to human health, ramped up with the rapid expansion of chemical use after World War II (Worthington, 2014; Dryzek *et al.*, 2003). This new modern environmental movement, kindled by Rachel Carson's *Silent Spring* in 1962, had roots in the women's, civil rights and anti-war movements, and was initially tied to these movements, but later became a stand-alone issue (Shabecoff, 2001).

### **3.3.1 Increasing inclusion of environmental considerations in policy in the USA**

Much activity followed the initiation of the modern environmental movement. President Nixon recognized the need to clean up the environment and declared the 1970s the 'decade of the environment'. Extensive legislation was brought in to regulate public drinking water, toxins, pesticides, and ocean dumping, as well as to protect wildlife, wilderness, and some rivers. Pollution research, standard setting, contaminated site cleanup, monitoring, and enforcement were also provided for (Dryzek *et al.*, 2003). The 1969 National Environmental Policy Act (NEPA) recast the government from conservator of wilderness to protector of earth, air, land, and water (USEPA, 1992). The US Environmental Protection Agency (EPA) was established in 1970 to unify federal environmental monitoring, standard setting, research, and enforcement activities into one agency. The agency went on to shape much of the environmental regulatory field of the US (USEPA, n.d.a). In the private sector the USA led the world in developing the first environmental management systems, which emerged in the 1970s in various forms through industry voluntary codes of environmental conduct and "eco-auditing" programs, which are discussed further in chapters 4 and 5.

There was considerable bipartisan support for protecting environmental quality in the early 1970s. Much of the country's environmental legislation passed during the republican Nixon administration was with political consensus. The general public had little if any ideological or partisan differences in environmental concern. Surprisingly, the flush of environmental legislation was advanced by a

conservative president obligated to industrial interests (Dryzek *et al.*, 2003). Toward the mid-to-late 1970s, politicians' support for environmental protection began to diverge. The general public's support for environmental protection also began to split between liberals and conservatives. While there were fluctuations in the split in the period between the 1970s and the present day, over the years this liberal-conservative divergence has increased (McCright *et al.*, 2014).

The 'golden age' of environmental gains ended in the early 1980s with Reagan who, like Thatcher, was hostile towards environmental issues (Shabecoff, 2001). Environmental regulatory authorities were wound back in accordance with free market and individualist values. Reagan's attack on environmentalism actually increased the influence of environmental groups by causing surges in membership and funding. The shift in public opinion towards environmentalism caused the Reagan administration to soften on environmental issues by the mid-1980s, which continued into the Bush administration in 1988 (Dryzek *et al.*, 2003).

The adoption of new environmental legislation came to a virtual standstill for decades after the flush of new environmental law in the 1970s. With the lack of meaningful statutory change, for the last twenty years federal environmental policy innovation has come about through administrative action by the EPA, particularly development of voluntary environmental programs (Coglianese and Nash, 2014), which are discussed further in Chapter 4.

### **3.4 Chapter 3 recap**

A combination of environmental accidents and increasing company liability, groundbreaking publications, and a growing awareness of increasing pollution lead to heightened public concern of environmental issues in the post-WWII to 1970s era. People increasingly called for environmental issues to be addressed, which ultimately lead to a tightening of environmental regulation and the first attempts by business to address these problems. To varying extents, the ramifications of environmental events and groundbreaking publications spread further than just the country in which they occurred, for example *Silent Spring* affected the environmental movement and had impacts in NZ and the UK (and around the world), not just the USA.

# Chapter 4: Early environmental management systems and EMS models

## 4.1 The first environmental management systems

The first environmental management systems (EMS) emerged in the 1970s through industry in the form of voluntary codes of environmental conduct and environmental auditing programs. These programs were industry's response to a series of industrial accidents in North America that resulted in negative publicity, costly legal cases, and increased public concern about the environmental impacts of industrial processes. An increasing number of regulatory requirements, initially focused on reducing pollution emissions, meant that industrial pollution needed to be managed to ensure compliance. Some heavily polluting industries rapidly increased spending to develop new technologies and processes for pollution control. Having a voluntary code of conduct in addition to these measures helped to reduce liability, minimize waste and generally manage the environmental impacts of these businesses (Watson & MacKay, 2003; Tinsley, 2014; WCED, 1987).

Another stage of EMS prototypes emerged in the late 1970s as policy makers around the world started to regard developmental and environmental issues as interdependent rather than separate considerations (Worthington, 2013). This new form of EMS emphasized pollution prevention and waste minimization as well as compliance with regulations. Insurance companies and banks began asking for management audits of potential liability for contaminated sites. As companies began to formalize their methods of pollution prevention and adopt voluntary eco-auditing, the need to standardize such procedures was recognized. This gave momentum to the EMS movement, and so pollution prevention techniques rapidly evolved into refined management systems (Watson & Emery, 2004).

Environmental auditing became widely accepted by industry in the late 1980s as a management tool in developed countries. This development of environmental auditing around the world was largely due to the influence of USA subsidiary companies operating abroad: localized environmental problems are often linked to global market forces. In Europe, environmental auditing began in the chemical and petrochemical industries, mostly due to the inherent environmental risks of these businesses, but also because of their involvement with American operations (Worthington, 2014).

## 4.2 Stakeholder theory

Stakeholder theory was one of the early theoretical frameworks used to explore the notion of corporate sustainability and morals and values in an organization (Freeman, 1984). The theory, developed in 1984, states that organizations have obligations to many individuals and groups who affect and are effected by an organization, for example shareholders, customers, employees and suppliers. In the traditional shareholder view of a company, the shareholders are the owners, and the company must put their needs first to increase value for them. Stakeholder theory argues that other parties are involved. The theory was later used to look into corporate motivations for undertaking sustainability behaviour and it influenced the development of corporate sustainability (Roca & Sercy, 2012).

There are actually a number of theories that have been given the broad label of stakeholder theory. There is an ethical (or normative) branch of the theory, which describes how organisations should treat their stakeholders and emphasizes the responsibility of organisations. There is also a managerial branch that emphasizes the need to manage stakeholder groups, especially those that may control necessary resources, such as financial stakeholders and government regulators, and are therefore considered powerful. This means that information is disclosed for strategic reasons, rather than on the basis of perceived responsibility, to show that the company is conforming to stakeholders' expectations (Deegan, 2002). The more powerful the stakeholder, the more the company must conform to the stakeholder's requirements. Corporate environmental and social responsibility reporting is seen as part of this dialogue, and as a relatively successful way to negotiate these relationships (Gray *et al.*, 1995).

## 4.3 New tools for managing environmental outputs

Early environmental legislation tended to be concerned largely with pollution, for example acid rain was an important issue in many European countries. In the USA, compliance management often required only end-of-pipe pollution control technologies. Environmental management was treated as a necessary but unproductive cost instead of a business opportunity and a new element of management function (Watson & MacKay, 2003). Environmental protection policy tended to impose regulations on emissions by medium. For example, one regulation would deal with point-source emissions to the air only, while another would deal only with point-source waterborne emissions. As a result, some air pollution could be eliminated by being converted to another form of waste, such as sludge to be disposed of on land. Similarly, waterborne wastes could be captured and converted to sludge for land

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

disposal. Air and water pollution can be reduced in this manner, but landfills also cause water and air pollution, so ultimately waste emissions are shifted from one form (and medium) to another, without significantly reducing the total. Some policies only dilute the waste stream without touching its volume, such as by building higher stacks for coal-burning power plants and longer pipes to carry sewage offshore (Ayres, 1994). Industrial ecology and industrial metabolism can help to address the issues of waste dilution and diversion.

### **4.3.1 Industrial ecology**

Industrial ecology is a way of looking at the world as a series of interwoven systems, and can be described on three levels. At the first, least developed level, the system is a linear flow system with unlimited energy and materials flowing in and out. At the second level, some energy and material is reused within the system, and at the third most developed level, each system component is linked together: no inputs and no waste out.

The concept of industrial ecology was brought to a wider audience in a 1989 in a *Scientific American* article (Frosch and Gallopoulos, 1989). The article considered

"why would not our industrial system behave like an ecosystem, where the wastes of a species may be resource to another species? Why would not the outputs of an industry be the inputs of another, thus reducing use of raw materials, pollution, and saving on waste treatment?"

Industrial ecology is now used as a framework in environmental management to improve the materials cycle from the beginning input of virgin materials to the end disposal of waste products (Garner and Keoleian, 1995; Worthington, 2014).

### **4.3.2 Industrial metabolism**

While the objective of industrial ecology is to understand better how we can integrate environmental concerns into our economic activities, the objective of industrial metabolism is to explain how the materials and energy used by industry flow through industrial systems and are transformed and then expended as wastes, and so can be an important part of an EMS. By determining material and energy flows and mass balances, inefficient products and processes that create waste and pollution can be identified, and steps to reduce them determined. In an industrial ecosystem, waste generated by one company can be used as a resource by another. In this way, no waste would leave the system or

negatively impact the environment. Developing industrial metabolism as an analytic tool was a critical step in understanding industrial ecology systems and moving toward sustainability (Garner and Keoleian, 1995; Ayres, 1994).

#### **4.3.3 Life cycle analysis**

Life cycle analysis (LCA) is a method that can be used in an EMS for analyzing the biogeochemical cycles that underpin industrial ecology (see section 1.3.1(b) for the Patagonia Inc. example). For many products, much of the environmental impact is not in using the product but in its manufacture, transportation, and disposal. The importance of addressing the life cycle of a product came to prominence in the 1980s and 1990s, and LCA emerged from this idea (Guinee *et al.*, 2011). LCA assesses the environmental impacts of a product or service from 'cradle to grave', i.e. from extraction and processing of raw materials to the finished product. An example of an LCA is polystyrene foam versus paper cups. In its early days, much of LCA was used by producers to respond to environmental concerns about their products. This focus has since become less defensive and more strategic, with a shift towards greening the supply chain and public policy support (Matthews and Lifset, 2007).

#### **4.3.4 Responsible supply chain management**

Supply chain management can be defined as all activities relating to the flow and transformation of materials from raw extraction to the consumption of goods and services by the end user, both up and down the supply chain (Handfield and Nichols, 1999). Responsible supply chain management integrates suppliers into an EMS and is generally seen to enhance environmental performance, cut waste, lower expenses and improve efficiency and synergy between business partners (see section 1.3.1(b) for the Patagonia Inc. example). Many companies also now recognize that clients and stakeholders do not always identify the difference between a company and its suppliers; environmental liabilities may be attributed to the lead company, even if a supply chain company is responsible (Rao and Holt, 2005). Responsible supply chain management can differentiate a company and help reach niche markets that value responsibly managed products. Supply chain certification systems that incorporate EMS, such as the Forest Stewardship Council (discussed further in section 5.6.3), provide certainty to clients and stakeholders that a product has been responsibly sourced.

#### **4.3.5 Extended producer responsibility**

Extended producer responsibility (EPR) is a strategy to integrate environmental costs of goods for their whole life cycle into the price of the product, with a particular focus on the product's end-of-use treatment. Its purpose is decrease the environmental impact of a product by having its manufacturer responsible for the whole life cycle, particularly for take-back, recycling and final disposal (Lindhqvist, 2000). Producers, usually brand owners, have the most control over product design and marketing. As such, these companies have the capacity and a duty to reduce waste from their products (Sierra Club, 2008) (see section 1.3.1d Common Threads Initiative for the Patagonia example).

## 4.4 Sustainable development

The concept of sustainable development had growing prominence in the 1970s and 1980s through international discussions about the global human impact of development, economic growth and the environment. Environmental protection was not one of the initial goals of the European Economic Community (now the European Union or EU) but this changed in the 1980s (Watson & Emery, 2004). The World Commission on Environment and Development (the WCED or Brundtland Commission), established 1983, popularized the idea of sustainable development. Several key events led to the formation of the WCED, beginning with the Stockholm Conference because it furthered knowledge of the relationships between social, economic, and environmental concerns (Worthington, 2014).

The establishment of the Brundtland Commission was a notable attempt to address global issues of environment and development (Worthington, 2013). The Commission highlighted the concept of sustainable development to the world with its 1987 report *Our Common Future*. The report attempted to shift corporate thinking of environmental management as an added expense by showing that environmental protection and corporate profitability can be combined if the relationship between economic development, social development, human rights and environmental impact on human settlements is viewed as a whole (Tinsley, 2014). This new concept helped to shape the international agenda and the international community's attitude towards economic, social and environmental development. It became one of the most successful approaches to be introduced in many years (United Nations Economic Commission for Europe, n.d.).

As a result of *Our Common Future*, momentum for EMS increased (Tinsley, 2014). The EMS-related elements of the report were calls for industry to develop effective EMS and encouraged

- industry to be more efficient with resources, generate less pollution and waste, use renewable rather than non-renewable resources and minimize adverse impacts to human health and the environment;
- the development of regulations imposing uniform performance standards to spur industry's efforts to become more efficient and to level the playing field;
- industrial enterprises, trade associations, and labour unions to establish company-wide or industry-wide policies relating to resource and environmental management;
- international trade and industry associations to take the lead in sustainable development concerns by establishing guidelines for assessing the sustainability and potential hazards of new facilities and for selecting pollution control or waste treatment technologies (World Commission on Environment and Development, 1987).

The discussion by governments about how to resolve the issues of economic development and environmental protection had clear ramifications for the business community, and generally many businesses were still against the idea that environmental considerations should constrain corporate growth. Despite the reluctance of many, some business leaders were prepared to engage in discussion to promote greater social and environmental responsibility, for example Business in the Community (UK, 1982), Responsible Care Program in the Chemical Industry (USA/Canada, 1985), and the Montreal Protocol on CFCs (1987) (Worthington, 2013).

## 4.5 Porter Hypothesis

In 1991, the Porter Hypothesis contributed to a shift in manufacturers' attitudes toward environmental responsibility (Porter and van der Linde, 1995). The hypothesis challenged entrenched beliefs about environmental protection; it suggested that properly designed regulation could actually trigger innovative solutions that would improve the value of a product or make it cost less, which would in turn enhance competitiveness. In Porter's own words, "strict environmental regulations do not inevitably hinder competitive advantage against foreign rivals; indeed, they often enhance it" (Porter, 1991). He suggested several mechanisms by which environmental regulations could improve competitiveness, for example using fewer costly chemicals or lowering waste disposal costs. Most economists at that time held the traditional view: environmental regulation requiring firms to reduce an externality such as pollution restricted their options and as a result, reduced their profits. Ultimately, if profitable



opportunities were available to reduce pollution, profit focused firms would already be taking those opportunities (Ambec *et al.*, 2010).

Porter's hypothesis sparked debate and continues to do so. The controversy increased interest in the possibility that pollution reduction and profitability were not conflicting, and promoted much literature on the theoretical bases underlying the hypothesis. The current literature shows mixed results on the regulation-competitiveness effect; this could be because firm, industry or environmental characteristics have an impact on the extent to which innovation and productivity or competitiveness enhancements happen. Studies might not properly capture the lag of innovation. Higher compliance costs may be a result of older plants, rather than more stringent regulatory standards. The Porter Hypothesis suggests instead that stricter environmental standards lead to investment in research and development, changes in processes or organisations, which in turn leads to innovation (Porter and van der Linde, 1995; Ambec *et al.*, 2010).

Comparisons between countries in order to test the Porter Hypothesis are becoming easier as datasets become more global. Studies are increasingly showing (but still not conclusively) that countries with stricter environmental regulations are less competitive in those regulated sectors than those with laxer regulations. Despite this, future research might show whether the type of regulation (performance-based, market-based or command and control) affects these results (Ambec *et al.*, 2010), and as with any comparison between countries, the economic context of those countries must be taken account of.

## **4.6 UN Conference on Environment and Development**

The 1992 United Nations Conference on Environment and Development (UNCED), also known as the Rio Conference and the Earth Summit, encompassed a much broader and more complex agenda than Stockholm had 20 years earlier due to the huge growth in scientific understanding of environmental issues. The change in agenda partly reflected the increasingly accepted view of Earth as a single integrated system with complex links between land, oceans, atmosphere, and biosphere. The issues addressed also indicated scientists' increased ability to study and model environmental change (Conca & Dabelko, 2010).

The Rio Conference resulted in a number of documents and agreements that promoted EMS. The Rio Declaration on Environment and Development (the Rio Declaration) consisted of a set of 27 principles to guide sustainable development around the world. It produced multilateral treaties on climate and biodiversity and the Agenda 21 goals, as well as furthering the use of EMS by promoting the internalization of environmental costs (polluter pays) (Watson & Emery, 2004). Also adopted at the conference was Agenda 21, an ambitious plan for sustainable development in many areas (“21” referred to the 21<sup>st</sup> Century). Agenda 21 promoted environmental management systems by encouraging annual environmental and energy resources reporting and codes of conduct promoting best environmental practice (Watson & Emery, 2004; UNECE, n.d.). Also at the conference, the Strategic Advisory Group on the Environment (established by the International Organization for Standardization) and Rio Summit members formed an idea of an EMS standard that could be used globally across all industries (Jackson, 1997).

The Rio Conference boosted both national and local action on sustainable development (UNECE, n.d.). Businesses became involved, for example through the World Business Council for Sustainable Development (see section 4.6.1). The International Chamber of Commerce produced a Business Charter for Sustainable Development (ICC, 2016). Scholars have argued whether this activity in the business world was actually a cultural shift (Frankel, 1998; McCoy and McCully, 1993) or if business had in fact hijacked environmentalism by preventing a more progressive political debate over the integration of environmental, social, and economic concerns nationally and internationally (Welford, 1997; Worthington, 2013). This question remains today of whether any of this activity actually tackles the root causes of today’s global environmental issues – adding a green label to a product will not save the world (Worthington, 2013).

#### **4.6.1 World Business Council for Sustainable Development**

The World Business Council for Sustainable Development (WBCSD) was invited to provide a business perspective for the Earth Summit. Founded on the eve of the Rio Earth Summit in 1992, the Council included CEOs from 48 of the largest transnational companies in the world, such as Dow, Shell and DuPont. The Council reported that the best way to achieve sustainable development was through the market, by implementing full-cost pricing and economic instruments including environmental taxes, charges, and tradable permits (Kolk & Mauser, 2002; Worthington, 2013). The Kyoto Protocol offered one way to achieve this goal that has remained valid to the present day (Worthington, 2013).

The WBCSD's *Vision 2050* report (2010) describes what needs to be done so that the nine billion people in the world can sustainably live by 2050, and targets in the WBCSD stepping stone plan (*Action 2020*) include business solutions such as uptake of EMS (Willis, 2014). The *Vision 2050* report was compiled by 29 leading global companies from 14 industries, and details a set of agreed must-haves, including such measures as incorporating the costs of externalities into the marketplace and halting deforestation. The report summarizes how progressive policy frameworks can transform areas such as forests, agriculture, energy and materials and also calls for business to abandon its destructive belief that free markets will solve environmental problems (Confino, 2012).

#### **4.6.2 Externalities and natural capital**

The concept of “externalities”, as mentioned in the WBCSD *Vision 2050* report, is now a familiar term in environmental management circles, and can be an important component of an EMS. It refers to costs created by businesses but not paid by those businesses. For instance, industrial processes polluting the air increase public health costs, but it is the public, not the polluting businesses, that pays the cost. Thus businesses privatize profits and publicize costs (Roberts, 2013). Tied to the business cost of environmental protection is the concept of natural capital, which refers to the world's natural assets, such as soil, air, water, a stable atmosphere and diverse biota. People derive a wide range of services from this natural capital, often called ecosystem services, which make human life possible (World Forum on Natural Capital, 2015). Water, land management and climate change are not just environmental issues; any impact on these resources has economic, social and cultural implications (Ministry for the Environment, 2014). If natural capital is depleted, the true cost of short-term increases in economic growth is shown economically and environmentally to future generations, also known as ‘inter-generational equity’ (Worthington, 2013). A recent report found that, of the 20 primary production and primary processing industries within a region with the biggest environmental impacts, would be profitable if environmental externalities were paid for (The Economics of Ecosystems and Biodiversity, 2010). A truly sustainable industrial system is one that does not spend down natural capital, but instead is integrated into energy and material flows (Roberts, 2013).

## 4.7 UN World Summit for Sustainable Development

The 2002 Johannesburg Conference further progressed the idea that companies have social and environmental responsibilities and contributed to the evolution of international environmental law (Watson & MacKay, 2003). Also known as Rio+10, the Summit focused on implementing Agenda 21 at the national, regional and international level. Even though the meeting did not produce much in the way of concrete products or specific targets, the focus on implementation was beneficial (Watson & McKay, 2003; Conca & Dabelko, 2010). Development issues had by now become so central to the discussion that some environmental advocates considered the environmental agenda was being ignored to an extent (and named the event “Rio minus ten”). The Johannesburg summit was held just one year after the destruction of the World Trade Center on 9/11. Governments were less willing to commit to open information flows and exchange of environmental data in view of fears of environmental terrorism. Political context always has an effect on the growth of scientific knowledge (Conca & Dabelko, 2010).

In the four decades since the 1972 Stockholm conference, many things had not changed by Johannesburg. Many of the hurdles to an effective global response seen at Stockholm were still present at later meetings (and remain today), including the conflict between the short-term inclination of most governments towards economic growth and political stability over the long-term foresight necessary for ecologically balanced planning. Another hurdle is governments’ hold on traditional concepts of national sovereignty even though the solution is a coordinated global response because the problems are global rather than confined to individual countries (Conca & Dabelko, 2010).

## 4.8 Kyoto Protocol

EMS can support climate change adaptation and mitigation steps by promoting energy efficiency, reductions in greenhouse emissions and minimising waste. The Kyoto Protocol originally emerged from the UN Framework Convention on Climate Change at the Earth Summit in 1992. It was adopted in Kyoto in 1997 and came into force in 2005 (United Nations, 1998). After Kyoto in 1997, international attention became increasingly focused on climate change and its expected economic, social, and environmental consequences. The start of the new millennium saw many meetings of political leaders through the United Nations, the G20 countries, the World Economic Forum, and the European Union, among others. Numerous official reports were published at the national and international level, which again

emphasized the links between economic activity and damage to the natural environment, for example the Stern Review (*Stern Review: The Economics of Climate Change*, 2006) and the UN Millennium Ecosystem Assessment Report (2007). A core theme of this activity was that environmental problems such as climate change were critical global issues requiring action by government, businesses and individuals (Worthington, 2013). Climate change and EMSs are discussed further in section 5.7.

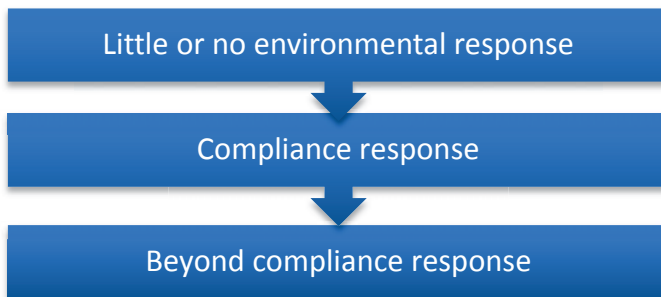
## **4.9 Environmental management models & environmental performance evaluation systems**

Environmental management models have contributed significantly to the development and understanding of EMSs. Much could be written about the models, but more than an overview is beyond the scope of this thesis. Since 1987, researchers and practitioners have created more than 50 models and typologies to characterize corporate environmental behaviour and evaluate corporate performance to better understand why and how organizations respond to the environmental agenda. Categorizing different forms of corporate environmental response can clarify understanding of environmental management practices and the different reactions of corporate decision-makers to the growing trend of environmentalism (Worthington, 2013). Over the years, classifications have increased in complexity and diversity, and a variety of models have been created to define directions that companies can take to become more sustainable (Kolk & Mauser, 2002). The environmental management models created were mostly continuum and typology models (Tinsley, 2014).

### **4.9.1 Continuum models**

A continuum model is a linear system that identifies a development in time. These models classify phenomena into mutually exclusive groups that can be identified in a continuous, non-discrete structure in time. A company can be identified using set criteria and positioned in a particular stage on the continuum (Tinsley, 2014). Stage models conceptualize environmental performance of a company as a development process in which the company moves towards higher levels of environmental performance over time. At their most basic, these models assume three phases of response, ranging from little or no consideration of environmental issues, to basic compliance with environmental regulations, to beyond compliance by more responsive organizations (see figure 1). The model assumes progression along the

continuum and implies that a company should aspire to evolve along each stage in order to reduce their environmental impact (Kolk & Mauser, 2002; Worthington, 2013).



**Figure 1:** simple continuum model of environmental management (Worthington, 2013)

The three basic phases of the stage model (figure 1) can be extended to five stages or more, portrayed as progressive levels of environmental management. This type of model implies that a company can choose its environmental strategy and that movement through the stages tends to occur as the company becomes more engaged in the environmental agenda (Worthington, 2013). Most companies cannot be clearly placed in one stage because the model uses a series of discrete decision rules to categorize phenomena into mutually exclusive and exhaustive sets. Therefore there must be one applicable class (stage) to classify an item (company) into, but also there may be only one proper class for each item. As such, an entity cannot be in two classes at the same time (Kolk & Mauser, 2002). For this reason, the applicability of continuum models is debatable. Kolk and Mauser (2002) stated that the actual application of continuum models has proved practically impossible. Although they provide a rough understanding of the ‘greening’ process, the models’ weaknesses become obvious when they are put into operation.

A number of second generation models were created in the late 1990s to address the flaws of linear continuum models, discussed in section 2.9.4.

#### **4.9.2 Typology models**

A typology model describes a related set of types, each type representing a combination of the organizational characteristics that determine the relevant outcome. Typology models do not provide a set criteria to categorize organizations into mutually exclusive groups the way that continuum models

do (Tinsley, 2014). In principle, a typology model is more applicable than a continuum model because the more similar an organization is to an ideal type, the better the typology will describe it. Typology models provide a snapshot in time, rather than attempting to identify future environmental performance. It may be more realistic that more than one strategy can lead to the best environmental performance (Kolk and Mauser, 2002; Tinsley, 2014).

An example of a typology model is one by Steger (1988), who investigated whether firms' beyond-compliance behavior was an attempt to stimulate innovation and develop markets (Kolk & Mauser, 2002). The type of strategy a firm chooses was thought to be determined by two factors: the firm's degree of environmental risk in its activities, and its capacity to gain market opportunities through environmental protection. In looking at these two factors, four generic strategies were devised, also shown in figure 2:

- Indifferent: environmental protection has no strategic importance
- Defensive: environmental risks large but opportunities small
- Offensive: environmental risks relatively insignificant but opportunities significant
- Innovative: risks and opportunities large (Worthington, 2013).

|                              |       | Market opportunities for environmental protection |            |
|------------------------------|-------|---|------------|
|                              |       | Small   | Large      |
| Corporate environmental risk | Small | Indifferent                                       | Offensive  |
|                              | Large | Defensive   | Innovative |

**Figure 2:** Steger's generic environmental strategies model (Worthington, 2013)

### 4.9.3 Environmental performance evaluation systems

Environmental performance evaluation systems were also developed in the late 1980s, parallel to but separate from environmental management modeling. Existing environmental management models could not meet businesses' growing need to gain more detailed knowledge of their environmental performance and to compare with competitors. This led to a call for environmental performance evaluation systems (Kolk & Mauser, 2002; Watson & Emery, 2004). The Coalition for Environmentally Responsible Economics (Ceres) put together one of the first structured systems to describe good

environmental performance in 1989 in response to the Exxon Valdez oil spill (*Ceres Principles*). The 10-point voluntary code of environmental conduct included the acceptance of an environmental mission statement and a commitment to the production of environmental reports.

In contrast to environmental management models, performance evaluation systems were developed by practitioners rather than academics. These systems were developed by banks, business associations and environmental governmental and non-governmental organizations, using their own rating and benchmarking systems (Kolk & Mauser, 2002). A performance indicator, which is a piece of information collected at regular intervals, can track the performance of the system (Gamble, 1990). Performance evaluation systems use a wide variety of indicators to measure performance, methods to collect data and sources of information. Being organization-specific, the systems hold an inherent risk of a vicious circle: the rankings are very subjective, so can end up being based partly on reputation, with the reputation being based partly on the rankings (Kolk & Mauser, 2002), and in this way differ from an independently certified EMS.

#### **4.9.4 Second-generation EM models**

A number of second-generation environmental management models were developed in the late 1990s, mainly because the stage models did not adequately conceptualize corporate environmental behavior (Worthington, 2013). Most studies of EMS models organize environmental strategies in stages from the most proactive to the least committed, which largely focus on internal processes rather than environmental performance. The new models provided a better understanding of the dynamics of environmental management by dealing with organizational and strategic complexities (Kolk & Mauser, 2002). Three alternative corporate responses to those suggested by the traditional model were:

1. restrained commitment: a firm has no incentive to advance towards excellence;
2. speculative commitment: a firm adopts a fast-track approach to excellence to quickly advance its corporate goals;
3. conditional commitment: a firm adopts a pragmatic approach to environmental policy based on time and place, for example by adjusting policies to site locations.

The second generation models suggested that companies use a wider range of strategic policies than researchers previously suggested (Worthington, 2013). This knowledge of increased complexity in modelling corporate environmental behavior makes it harder to apply the second generation revised



model compared to those models that try to simplify reality, a problem for all models of complex systems (Kolk & Mauser, 2002).

## **Key EMS policy developments in the study countries**

### **4.10 Early EMS activity in NZ**

Environmental management systems are not new to NZ; they have been used for many years in the form of land use planning. NZ's environmental policy reform in the 1980s and early 1990s provided a push for EMS uptake in the public sector but less so in the private arena.

#### **4.10.1 Land use planning in NZ**

Farm plans, adopted from the USA, are a form of EMS New Zealanders have been using since the 1940s. Farm plans are a type of self-regulation initially developed to manage soil conservation. Farm plans evolved from the early soil conservation plans into whole catchment management systems under the LUC. Many different forms are in use today including programmes to address water conservation, soil conservation and biodiversity (Blaschke & Ngapo, 2003).

The Land Use Capability (LUC) system is another form of EMS used in NZ since 1952 to support rural land use planning. Its primary objective is to maintain and increase NZ's land productivity through sustainable management. The Land Resource Inventory (LRI), an element of the LUC, is a nation-wide database to assess physical factors critical to long-term land use and management. The LRI classifies land into eight categories according to its long-term capacity to sustain one or more productive uses, based on the physical qualities of the soil, land, and environment. An example of LUC application is Gisborne and the East Cape, where it has been used to help plan and implement sustainable land use due to severe, widespread erosion. The LUC targets land that needs special management or a change in use to manage erosion, and a farm map of targeted land use is created to develop farm-specific plans (Lynn *et al.*, 2009).

#### **4.10.2 Environmental policy reform**

NZ went through a massive reform of the country's environmental laws in the 1980s. Law makers recognized that key environmental legislation, including the Water and Soil Conservation Act 1967 and the Town and Country Planning Act 1977, needed to be reviewed. The reforms were rooted in the 1972 Stockholm Conference, which ultimately led to a 1981 OECD audit report (*Environmental Policies in NZ*) emphasizing the need for improvement of environmental management. Also in 1981, the Nature Conservation Council produced a report (*Integrating Conservation and Development: A Proposal for a NZ Conservation Strategy*) that identified how key concepts of sustainable development could be included in NZ legislation (Environment Foundation, 2014). The growing political emphasis of environmental issues resulted in the expansion of government departments and agencies with environmental responsibilities, including the Ministry for the Environment and the Parliamentary Commissioner for the Environment (Frieder, 1997).

#### **4.10.3 Environment Act and the Parliamentary Commissioner for the Environment**

As a result of environmental administration reform, the Environment Act (1986) established the Ministry for the Environment and the Parliamentary Commissioner for the Environment (PCE). In its 1981 report, the OECD had recommended that environmental advice to government was strengthened and an environmental body with a separate audit and overseer function was established. The PCE has statutory independence and checks the EMS and environmental performance of public authorities. The PCE reviews the environmental management system of the whole public sector and reports it to Parliament. This capacity to critically investigate the policy decisions of government was unique in the world for almost a decade after the PCE was established (Parliamentary Commissioner for the Environment, 2014).

Although establishment of the PCE increased EMS uptake in the public sector, there was no legislation to drive EMS uptake in the private sector. The country was still seen as a pioneer of deregulation because of the public-service reforms of the 1980s. NZ has been claimed to have one of the least regulated economies in the world (New Zealand Now, n.d.). The business community considered environmental quality to be the responsibility of government and legislation (discussed further in Chapter 5). NZ's mostly small-to-medium sized enterprises focused on legal compliance rather than social responsibility. Any corporate responsibility up until this time was criticized as being a symbolic effort rather than true sustainability measures (Frame *et al.*, 2003).

#### **4.10.4 NZ environmental legislation related to business**

The two main laws relating to business environmental compliance in NZ are the Resource Management Act 1991 (RMA) and the Hazardous Substances and New Organisms Act 1996 (HSNO). The RMA brought about a paradigm shift in the way the environment was managed when it was first introduced, because it was the first statutory planning regime in the world to incorporate the principle of sustainability by requiring sustainable management of resources (Pawson, 2012). The Act regulates the effects of activities on the natural environment instead of regulating the activities themselves (Rennie, 2011). This provides businesses with freedom to carry out an activity as long as they can avoid, remedy, or mitigate its adverse effects on the environment. Markland (2009) indicated that the regulatory framework for environmental performance in business is too complex and difficult to understand, particularly for small and medium-sized enterprises (SMEs), so there is a risk of far-reaching non-compliance. MfE's 2010/2011 report on resource consent compliance identified that while 72 percent of consent holders complied with their conditions, regulators received a significant number (124,172) of complaints about alleged RMA breaches (Ministry for the Environment, 2011).

HSNO's purpose is to protect the environment, and the health and safety of communities, by preventing or managing adverse effects of hazardous substances and new organisms. Results of a 2008 survey of HSNO regulatory officers showed that just ten percent of sites met regulatory requirements on the first compliance assessment visit (Flashpoint Magazine, 2008). While these figures do not show the full story, they imply that NZ businesses are either unable or unwilling to meet environmental regulatory compliance (Whitehead, 2013).

While the RMA regulates many impacts of human activities on NZ's natural environment, the purpose of this thesis is to investigate EMSs in the urban corporate and manufacturing sectors, not those natural resource use/farming activities covered under the RMA. As such, further discussion of the RMA falls out of the scope of this thesis.

### **4.11 Early EMS activity in UK**

#### **4.11.1 Environmental Protection Act 1990**

The UK's Environmental Protection Act 1990 overhauled and consolidated many older environmental laws. The new law encouraged EMS uptake to ensure compliance with the Act's main purpose of integrated pollution control (IPC). Companies and individual directors deemed negligent in their duties towards environment protection could now be prosecuted under the Environmental Protection Act and fined for environmental damage (Holland and Boon Foo, 2003).

#### **4.11.2 BS 7750**

The first national EMS standard, BS 7750 (*Environmental Management Systems*), was drafted in the UK in 1992 and finalized in 1994. British industry and government had three main reasons to develop BS 7750:

1. The Environmental Protection Act 1990, which encourages the use of EMS;
2. The initial draft of the European Union's Eco-Management and Audit Scheme (EMAS) in 1990 (published in 1993); and
3. Pressure from the public and politicians about the state of the environment.

The goals of BS 7750 were to certify a company's compliance with its environmental policy and to have the company show that compliance to others. BS 7750 was written to be compatible with BS 5750 (precursor and template for the ISO 9000 standards on quality management) and with EMAS requirements (Tinsley, 2014).

Early efforts to create one generic, internationally recognized EMS standard began in several places around the world, but the UK ultimately lead the way to the ISO 14001 standard, which has become the most prominent environmental management standard in the world (Seddon, 2000). BS 7750, along with other national standards (e.g. from Ireland, Japan and Canada), eventually formed the basis of ISO 14001. The UK's BSI became the secretariat organization within ISO Technical Committee 207, which was the international group of experts created from ISO's Strategic Advisory Group on the Environment (SAGE) meetings to develop the ISO 14000 series (discussed in more detail in Chapter 5) (Voorhees and Woellner, 1998).

#### **4.11.3 EMAS**

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

The Eco-Management and Audit Scheme (EMAS) is a voluntary, beyond-compliance instrument developed in 1993 by the European Commission. The scheme is applicable globally and open to all types of organizations; it has requirements that include and go beyond the requirements of ISO 14001, so is considered the premium instrument for environmental management (German EMAS Advisory Board, 2011). EMAS is set up under the Eco-Management and Audit Regulation, an EU law that requires each member state to set up its own EMAS program; as such, EMAS is a government regulation, not an international standard. EMAS, as the 'senior' document, allowed the EC to recognize other accredited environmental management and audit standards, including BS 7750 (and later the ISO 14000 series) (Holmes, 1995), and the UK intended to use BS 7750 to at least partly implement the Regulation. The two main differences between EMAS and BS 7750 were that BS 7750 was company-specific instead of site-specific, so if a company operated many sites, all would have to be comply with BS 7750 or the company could not be certified. Under EMAS, on the other hand, individual sites operated by a company can be certified. The other main difference was that BS 7750 was open to all sectors, while up until 2001 EMAS was open only to industry (Wenk, 2008).

#### **4.12 Early EMS activity in USA**

US industry was first in the world to develop voluntary EMS and environmental auditing, and the instigation and dissemination of environmental auditing around the world was largely due to the influence of USA subsidiary companies operating abroad (Worthington, 2014). Budget cut-backs in the USEPA since the mid-1980s limited its capacity to monitor and enforce environmental policies. The result was more citizen enforcement actions against companies violating laws and against the EPA for slack enforcement. This led to a trend of devolution in the regulatory regime towards encouraging firms to carry out voluntary actions to supplement regulations. This trend broadened to the use of market forces whereby environmental information about companies and products was provided to enable citizens to show preference for responsible companies (e.g. the Toxics Release Inventory, discussed further in 4.12.2). These efforts by government were augmented by NGOs (e.g. the Environmental Defense Fund), which inform about chemical risk, name and shame large polluters, and rank firms based on environmental and social performance. Also part of this trend of devolution, a number of industry-led programmes for self-regulation were initiated, for example Dow Chemical, AT&T and 3M redesigned products and processes as part of pollution prevention programmes. The best-known of these programmes is Responsible Care, a set of guiding principles and codes of management practices to

improve environmental and social responsibility in the chemical industry. All of this activity was very different to the government-led approach to environmental protection of the 1980s (Khanna, 2001).

#### **4.12.1 Farm planning in the USA**

Early forms of EMS were farm planning systems, the model NZ used for its farm planning systems. Farming systems extension in the USA began in the 1920s and 1930s and had a resurgence period in the 1980s and 1990s. The early approach was called 'balanced farming', where whole-farm systems were planned, which was a form of EMS that involved conservation of soil and other farm resources, as well as production, economics and preserving the family farm (Flora and Francis, 2000).

The resurgence of whole-farm systems in the 1980s came about from farmer concerns about farm sustainability and a need for a more inclusive farming systems approach than what was practiced at the time. This second period coincided with the return to the US of a number of scientists who had worked long-term in other countries, and brought new ideas and approaches that were being practiced in the developing world (Flora and Francis, 2000).

#### **4.12.2 Voluntary industry EMS**

The proliferation of environmental regulations in the 1970s produced significant reductions in air and water pollution and improvements in waste management, but the regulations generated a preoccupation with regulatory compliance, rather than a proactive approach of incorporating environmental considerations into core business functions. At this early stage of EMS, industry considered environmental management as either an extension of product quality assurance or as a passing fad. Industry believed environmental management restricted production; corrections to processes were not considered to have potentially positive results on business activities, but instead were reactive: end-of-pipe solutions to ameliorate impacts (Tinsley, 2014).

The key factors encouraging development of EMS and environmental auditing in the US were CERCLA/Superfund (section 4.12.3) and the Bhopal disaster (section 4.12.4). In order to better adapt to the changing regulatory landscape, numerous associations, corporations and government departments developed and implemented a range of EMS frameworks, for example the Chemical Manufacturers Association created the Responsible Care program in 1988 (which actually originated from the Canadian Chemical Producer's Association in 1985) (Belanger *et al.*, 2009).

### **4.12.3 CERCLA/Superfund**

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 1980, commonly known as Superfund, was one of the first triggers to motivate companies to begin environmental audits. In the late 1970s, high levels of toxic wastes discovered in Love Canal, upstate New York, and the related unusually high cancer rates and birth defects of residents in the area prompted Congress to establish the Superfund to clean up the increasing number of uncontrolled and abandoned hazardous waste-disposal sites (Revkin, 2013). These sites had resulted from corporations not fully applying the Resource Conservation and Recovery Act (1976) because of the light penalties for non-compliance (Holland and Boon Foo, 2003). After the EPA began publishing estimates of Superfund clean-up costs for particular sites, many companies' annual reports started to include environmental disclosures that reflected the national interest in hazardous waste site remediation (Holland and Boon Foo, 2003). This had wider implications for the development of environmental auditing in other developed countries, not just the USA.

The Superfund Act was strengthened in 1986 and the amended act included formal corporate financial responsibilities for activities adversely affecting soil or groundwater (Holland and Boon Foo, 2003). The law made companies liable for releases of hazardous waste. It created a tax on chemical and petroleum industries to respond to release of hazardous substances, and provided a fund to clean up abandoned toxic waste dumps (USEPA, 1992b). EMS can help a company to adapt and can supplement efforts to comply with regulation when combined with the right environmental standards, certifiable audits and public reporting of results.

### **4.12.4 Bhopal and the Toxics Release Inventory**

The 1984 Bhopal disaster, the world's worst industrial accident, showed the need for enforceable international environmental safety standards and preventative strategies to avoid similar accidents. A toxic cloud of methyl isocyanate had drifted from the US-owned Union Carbide plant that ultimately killed more than 11,000 people (Sheiman and Doniger, 1985). In response, environmental auditing practices quickly expanded in the US and the Toxics Release Inventory (TRI) was created in 1986. This is a publicly available database containing information on toxic chemical releases and other waste management activities in the US. TRI was part of a new approach to environmental management; for the first time, actual quantities of pollutant releases by many major businesses were documented. As a

result, new incentives were generated for firms themselves to identify and reduce their toxic discharges, and thereby encouraged EMS use. The TRI is different to other federal environmental programs, which aim to improve environmental performance by setting standards and specifying how facilities must operate (USEPA, n.d.b).

### **4.13 Chapter 4 recap**

This chapter addressed the development of new tools and theories that were fostered to manage environmental problems, for instance concepts such as industrial ecology and industrial metabolism were formulated to address issues of waste dilution and diversion, and environmental management models were developed to further understand and advance EMSs. The Porter Hypothesis questioned the entrenched belief that environmental regulations reduced company profits. International environmental conferences were held more frequently to further explore concepts of sustainable development, the threats from unchecked greenhouse gas emissions and to promote use of EMS. Activity in the study countries showed a general progression toward increased use of EMS.



## Chapter 5: Recent developments in EMS and CR reporting

These days there is growing consensus of the obligation of businesses to all stakeholders in society, including the natural environment and the externalities it provides (Clapp, 2005). Although not all businesses are undertaking this transition, the emphasis placed now on corporate responsibility reporting illustrates corporations' growing commitment to transparency about their business operations (discussed further in section 5.5). This is a significant change from the way corporate responsibility was viewed as recently as the 1990s.

While the adoption of EMS gathered momentum in the 1990s, the prevailing view of industry and academics was that improving environmental management was contradictory to corporate performance, and possibly a breach of the fiduciary duty of managers to shareholders (Melnyk *et al.*, 2003). Economists and managers still generally did not consider environmental protection a legitimate cost of business but something that added costs and diminished global competitiveness, for example regulations now charged firms for their emissions, a by-product that was previously free (Ambec *et al.*, 2010). The thinking was that while environmental regulations can make firms allocate labor and/or capital to pollution reduction, technological standards can confine the choice of technologies in the production process, and any investment in improved environmental performance would increase lead times, increase costs, or reduce quality, in turn reducing profits and decreasing returns to shareholders (Melnyk *et al.*, 2003).

Nowadays, environmental standards are moving from voluntary to compulsory and stakeholders demand more accountability and transparency. Part of this trend is evaluation of supply-chain and product life-cycle (Economist Intelligence Unit, 2010b). While economic success and business survival remain central to boardroom discussions, sustainability is now a cultural dimension of business; it is no longer an add-on issue due to companies' dependence on resource availability (Miller and McGowan, 2013). Section 5.1 outlines the development of new environmental performance indicators and other tools of self-regulation. Section 5.2 outlines the development of formal environmental management standards. Also discussed in this chapter are the drivers (5.3) and barriers (5.4) of EMS uptake. Section 5.5 is a discussion of the emphasis companies around the world now place on corporate responsibility reporting nowadays. Section 3.6 provides an overview of some voluntary international standards and global sustainability initiatives related to EMS and corporate responsibility reporting.

## 5.1 New tools for measuring environmental performance

Companies began to emphasise their 'eco-efficiency' before the new millennium: cost-effective ways of reducing waste discharges, minimising energy use, as well as water, toxic chemical and other inputs. A combination of financial risks from new legislation and public reputation motivated these new initiatives. Industrial ecology tools were further developed in the 1990s, such as life cycle design and environmental accounting, and earlier efforts to use systems analysis to solve environmental problems were brought together. Some businesses began to promote more self-regulation to use different ways of meeting or exceeding environmental regulations at less cost (Garner and Keoleian, 1995).

The business community was gradually coming on board to integrate voluntary sustainability measures into business practice, and to recognize the need to standardize these measures. The International Chamber of Commerce created the *Business Charter for Sustainable Development* and *A Guide to Effective Environmental Auditing* in 1991 (Watson & Emery, 2004). NZ and the UK drafted long-term national strategies for sustainable development (Janicke and Jorgens, 2000). Most environmental performance systems around this time had highly specific purposes: to benchmark and rate companies for investment selection, or to investigate the relationship between environmental and financial performance. This did not provide much clarity on the measurement and status of environmental performance. Different dimensions were identified towards the new millennium, in particular the split between process and outcome measures, and the internal and external components of environmental performance. International efforts to standardise measurement and reporting provided more information on practical application, including the difference between indicators of environmental management, environmental performance and environmental condition, and the need to split generally applicable and organisation-specific indicators (Kolk & Mauser, 2002).

## 5.2 Formal environmental management standards

International management standards for environmental performance and corporate responsibility enable stakeholders to assess the social, environmental and ethical performance of a firm. These voluntary standards complement existing legislation designed to deal with social and environmental issues (Magali and Montes-Sancho, 2011). The world's first formal EMS standard, BS 7750, was published in the UK in 1992 by the British Standards Institute (BSI). This standard was the precursor to

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

ISO 14001; many British firms adopted BS 7750 then progressed to ISO 14001. A two year pilot program using 230 implementing organisations formed the basis of the standard. Modifications were carried out based on feedback from the pilot organisations, subsequently published with modifications in 1994 (Watson & Emery, 2004; Northern Ireland Environment Agency, 2009).

### ***EMAS***

While BS7750 was being developed, the European Commission was drafting the Eco-Management and Audit Scheme (EMAS), published in 1993 and opened to company participation in 1995 (Northern Ireland Environment Agency, 2009). EMAS was initially to require compulsory participation for particular businesses and a standard for EMS throughout Europe. This scheme had strong opposition so was not made binding on companies or individuals, only member states. EMAS required governments to establish monitoring and certification systems (Watson & Emery, 2004). EMAS was opened to all economic sectors in 2001; ISO 14001 certified organizations can fast track to EMAS certification. Its third revision (EMAS III) in 2010 introduced a global reach; organizations outside the EU can now apply for EMAS certification (Worthington, 2013).

### ***Strategic Advisory Group on Environment (SAGE)***

With much activity in several countries on environmental management standards, ISO assessed the need for an international environmental management standard and planned its development through the Strategic Advisory Group on Environment (SAGE), a group of environmental policy experts from a number of countries. For nearly two years the group studied BS7750, other national EMS standards, and the relationship between ISO 9000 (quality assurance systems) and the planned new environmental standard, to decide the requirements for a standardized approach to environmental management (Voorhees and Woellner, 1998). SAGE concluded that an international environmental management standard was needed because there were so many different, often conflicting, standards around the world. Many feared these conflicting environmental standards could lead to trade barriers and added expense. The appearance of ISO 14001 led to the withdrawal of BS 7750 and other EU national standards (Tinsley, 2014).

### ***ISO 14001***

The ISO 14000 series is a set of international standards for elective environmental management. The series is based around fostering a commitment to pollution prevention, environmental compliance, and

continual improvement of environmental performance through environmental management (Edwards *et al.*, 1999). ISO 14001 was developed and adopted in 1996. Essentially, it sets out the building blocks of an effective EMS. Now European business could comply with EMAS or with ISO 14001 or could ignore both. ISO 14001 was developed in under 3 years, much faster than it usually takes to develop an international standard, because it drew heavily from BS7750 (Watson & Emery, 2004). ISO 14001 has much in common with ISO 9000, the international standard for quality management. Both standards involve third party audits and focus on processes rather than outcomes such as pollution. If organizations manage environmental matters methodically, they will learn which production processes result in pollution, take action, and perform better than firms that do not. Under ISO 14001, a firm will create an environmental policy, set objectives and targets, implement a program to achieve those objectives, monitor and measure the program's effectiveness, correct problems, and review the system to improve both the firm's strategy and environmental performance (Magali and Montes-Sancho, 2011).

From the mid-1990s, EMAS and ISO 14001 became a key tool for organizations to demonstrate environmental responsibility, EMAS with a European focus and ISO 14001 with an international focus. These voluntary standards created a paradigm shift as operations became more proactive and less regulatory driven (Wenk, 2008). ISO 14001 refined the EMS concept as a management structure to address the short and long-term environmental impacts of a company's products, services and processes. The structure provided consistency in responsibility, allocation of resources, and ongoing evaluation of practices, procedures and processes in a firm. The new standard was also directed at the processes involved in pollution creation, management and elimination, instead of just pollution reduction (Tinsley, 2014).

Despite many studies (detailed in Magali and Montes-Sancho, 2011), the advantages of adopting ISO 14001 remain unclear and are still subject to interpretation even several years after the standard was created. Benefits are expected from improved environmental performance, and also from avoiding damaging impacts, which is difficult to evaluate. For example, a company may decrease the cost of regulatory fines and decrease their environmental liabilities, but quantifying the cost of an avoided lawsuit is more difficult than quantifying an actual payment made. Another example is that ISO 14001 procedures may lead to operational efficiencies by involving employees in the design and application of the standard, but no study has yet documented the gains in efficiency as a result of adopting the standard (Magali and Montes-Sancho, 2011).

### **ISO 14001 review 2015**

ISO 14001 was reviewed in October 2015 and changes were made to its structure and requirements. Before the 2015 review, ISO 14001 did not set requirements for environmental performance other than a commitment to comply with applicable regulations. It also did not specifically identify environmental performance as a factor in the certification process. This is important given that the cost of certification is high, ranging from \$50,000 for small companies to more than \$200,000 for larger companies and the advantages of adopting the standard remain unclear (Magali and Montes-Sancho, 2011). EMAS was more rigorous than ISO 14001 pre-2015 because it focused on changes in an organization's environmental impact, while ISO 14001 placed emphasis on documentation (Watson & Emery, 2004).

The 2015 review amended ISO 14001's structure to align with other ISO standards such as occupational health and safety (OHSAS 18001) and quality (ISO 9001); organisations are increasingly integrating their management systems. Changes to the *requirements* of ISO 14001 were more fundamental, the most significant being:

1. More focus on environmental performance. Previously, it was possible for a company to have an EMS without actually reducing its environmental impact. The 2004 version's focus was on continual improvement of the system. Now an organisation must continually improve its environmental performance as well as the system.
2. Interested parties' requirements have more consideration in the EMS to align ISO 14001 with global reporting guidelines such as the Global Reporting Initiative (GRI) framework. This should better connect an organisation's operational performance of the EMS and its external environmental communications.
3. Organisations now must consider the whole life cycle of a product rather than just their own operations to gain certification. Upstream and downstream activities with significant environmental impacts are included in the design and operation of the EMS. This will ensure that environmental impacts are not shifted to other stages of a product or service's life cycle (Seidel, 2013).

The 2015 changes may help to rectify the compliance and box-ticking approach that was prevalent previously (Seidel, 2013).

### **5.1.1 ISO 14001 diffusion**

The emerging phase of a standard provides a chance to analyse the institutional effects that shape the diffusion of a standard. In the take-up phase of diffusion, coercive or regulative pressures (where rewards or penalties are tied to adoption of the standard) tend to impact the adoption of ISO 14001, but this impact may fade over time. In later phases of diffusion, normative and cognitive forces (where the standard is considered to be the correct or normal thing to adopt) tend to be more effective at promoting uptake. Magali and Montes-Sancho (2011) found that a country is more likely to adopt ISO 14001 when its government has a high level of commitment to environmental protection, the country has a low to moderate number of law firms per capita, and an active civil society. These factors become less important in later phases of diffusion. Other important factors in early and later phases of ISO 14001 diffusion are the role of trade relations and the presence of ISO 9000. In later phases of diffusion, the standard diffuses through geographical proximity (Magali and Montes-Sancho, 2011). International trade encourages uptake of EMS standards because a standard can be a useful trade facilitator by providing a common foundation for goods and services exchange (Corbett and Kirsch, 2001).

Many organizations were cautious of the new ISO 14001 and were interested in its development, having seen the emergence and widespread acceptance of ISO 9000 (quality management standards). Many companies, particularly in the USA, were reluctant to follow a strict environmental management standard because of the risk of civil suits. The fear was that non-compliance with the standard could result in litigation – the extensive documentation required by ISO 14001 could be used against them if sued for violating environmental regulations (Martincic, 1997). Kollman and Prakash (2002) highlighted the key role of the British Standards Institute (BSI) in promoting ISO 14001 in the UK as well as the fact that British businesses had already had experience with EMS standards through EMAS and BS 7750; the lack of an equivalent body to BSI and experience of EMS standards in the USA hindered similar levels of uptake. Lack of external incentives was likely the main reason for slow uptake in NZ (discussed further in 5.8.1) (Markland, 2009).

#### ***Diffusion amongst SMEs***

Uptake of ISO 14001 around the world has grown steadily, particularly amongst larger firms, which claim that benefits include improved image, market access, profitability and compliance. Despite this, it is increasingly clear that small enterprises (50 staff or less) find ISO 14001 difficult to understand and implement, and those that do certify see fewer benefits than those seen by larger firms. This is of

particular interest because small and micro-enterprises (10 staff or less) produce most employment and economic activity around the world, so mitigating their combined environmental impact could have enormous benefits (Markland, 2013). SMEs have been estimated to be the source of up to 70% of industrial pollution worldwide (Battisti and Perry, 2010).

ISO has been attempting to make EMSs more accessible to small organizations for the past decade. In 2010, ISO published a checklist and an implementation guide (standard ISO 14005:2010, *Environmental management systems – Guidelines for the phased implementation of an environmental management system, including the use of environmental performance evaluation*). Despite these extra documents, assistance schemes and subsidies, ISO 14001 uptake is still not increasing in micro-enterprises. This brings into question the appropriateness or relevance of formal ISO 14001 certification for micro-enterprises (Markland, 2013). Many of the EMS frameworks and standards developed for large organizations are applied to SMEs, but SMEs do not simply function as miniature large firms (Battisti and Perry, 2010).

### ***ISO 14001 diffusion in the study countries***

Comparing absolute numbers of ISO 14001 certifications in each study country does not provide especially meaningful information; the UK and USA appear to have considerably more ISO 14001 certifications than NZ. However, given the massive differences in population and GDP of each country, intensity of standard certifications is a better measure of a country’s ISO 14001 uptake. Marimon *et al.* (2010) proposed using the internationally recognized measure of “purchasing power parity gross national income” (PPP GNI) to calculate<sup>1</sup> differences in intensity of certifications between countries, because international comparisons using GDP can be problematic due to price fluctuations and currency differences. PPP GNI is a calculation of gross national income (converted to international dollars) in terms of purchasing power parity.

|            | <b>ISO 14001 certs 2014<sup>+</sup></b> | <b>PPP GNI (millions) 2014*</b> | <b>Certification intensity</b> |
|------------|---|---------------------------------|--------------------------------|
| <b>NZ</b>  | 294                                     | 163,269.45                      | 14.59                          |
| <b>UK</b>  | 16,685                                  | 2,550,078.36                    | 53.01                          |
| <b>USA</b> | 6,586                                   | 17,823,200.00                   | 2.98                           |

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<sup>1</sup> To calculate intensity of certifications, divide each PPP value by e<sup>09</sup> and divide the result into the number of certificates issued

\*International Standards Organization (ISO), 2014

\*World Bank, n.d.

The calculation of certification intensity shows that while NZ lags significantly behind the other two study countries in absolute ISO 14001 numbers, NZ's certification intensity is not actually as low as it looks, and is higher than the USA. NZ and the USA both lag significantly behind the UK in ISO 14001 certification intensity. The UK's higher certification rate could be because international trade influences countries' ISO 14001 adoption rates; Prakash and Potoski (2006) found that countries that export to destinations with high levels of ISO 14001 certifications have higher certifications themselves, and Neumayer and Perkins (2003) found that countries with higher exports of goods and services to the EU and Japan had a higher ISO 14001 uptake per capita. Many public procurement contracts in Europe require suppliers to have ISO 14001 certification; pre-qualification questionnaires used as part of the bidding for public sector (and sometimes private sector) contracts frequently ask if a company has an EMS. Having ISO 14001 is likely to help a company win a contract (ENDS, 2013). ISO 14001 has increasingly been integrated into the environmental regulatory landscape in England and Wales. Economic incentives are used to encourage uptake of EMS, for example under the EU Integrated Pollution Prevention and Control directive, firms certified to the ISO 14001 standard are charged lower fees for their industrial sites (discussed further in section 5.9.1) (ENDS, 2013).

Sections 5.3 and 5.4 discuss some more reasons why EMS uptake varies between company types and countries.

### **5.3 Drivers of EMS uptake**

A number of key drivers of EMS uptake within countries and within individual organizations have been identified. Within an individual country, drivers of EMS uptake are largely domestic factors that determine an organization's perceptions of an EMS scheme's costs and benefits, even though EMS schemes such as ISO 14001 and EMAS are created by supranational organizations. In particular, domestic circulation of information and promotion of EMS shape perceptions of these schemes by stakeholders such as environmental groups, regulators, suppliers and the general public (Kollman and Prakash, 2002). Holland and Boon Foo (2003) stated that in Europe ISO 14001 may be more important in order to keep up a customer base.

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA



Within an individual organization, several drivers for EMS uptake are influential. The initial stimulus for sustainability-related changes in an organization tends to come from two elements: endogenous change, which comes from strong sustainability leadership within the organization (usually the CEO), and exogenous change, which comes from external pressure from shareholders or activists (or both). An example of a company that experienced exogenous change is Nike, which was accused by activists of human rights violations. The company now takes stakeholder accountability very seriously and aims for responsible supply chain management (Miller and Serafeim, 2014). External influences, such as customer demand, are greater motivators for a business to adopt environmental practices than internal influences such as employees who attempt to green the business from the inside (Tilley, 1999). Biondi *et al.* (1998) identified primary drivers of EMS uptake as legislation, customers, communities, and environmental groups. Markland (2009) cited three main drivers of EMS uptake. Firstly, managing organizational risk, for example some insurers around the world give consideration to a firm's EMS when setting premiums, and in some jurisdictions courts take an EMS as evidence in a due diligence defense (Wilson & McCutcheon, 1999). Secondly, some businesses now demand performance assurances from suppliers, such as an EMS, as a way to manage their environmental risk exposure; suppliers with better environmental performance are favoured over those that place less emphasis on environmental performance (Vachon and Klassen, 2006). Thirdly, consumer expectation – while there is substantial variation in consumer attitudes between different countries, a product's environmental impact can now influence consumer choice more than its brand.

Company size has the biggest influence out of all the factors that affect sustainability performance and EMS uptake. Small and medium sized enterprises (SMEs) still find it harder than larger companies to move from commitment to action. Large companies are twice as likely to monitor and evaluate their environmental performance. Despite this, SMEs are increasing their sustainability measures to catch up to bigger companies (United Nations Global Compact, 2013). Drivers of EMS uptake within SMEs are business performance and regulation. Studies have shown that businesses will not go beyond compliance because their decision-making frameworks are market-based (Williamson *et al.*, 2006). This implies that businesses are less likely to voluntarily adopt sustainability measures because such measures are not a core component of business performance. As a result, some authors (e.g. Tilly, 1999) have advocated for strengthening the regulatory framework, and argued that enhanced

regulation is the main way to connect between SME's focus on the economic bottom line with wider societal interests (Whitehead, 2013).

## **5.4 Barriers to EMS uptake**

At the country level, Neumayer and Perkins (2003) found that per capita ISO 14001 certifications are lower in countries with higher productivity (as a measure of product per worker), and in countries in which the government intervenes more in the economy.

At the company level, SMEs have been found to be less inclined to proactively engage in voluntary environmental initiatives than larger firms, for four main reasons. First, SMEs have lower public visibility than large firms, and so face a lower risk to their reputation and therefore have a lower motivation to manage this risk. Second, SMEs have fewer resources, including management, to devote to activities not perceived as necessary to the business's daily operations and marketing. Thirdly, environmental management tools and programmes tend to be designed for larger firms and do not fit the issues facing SMEs. Lastly, environmental performance improvements can depend on coordination within an industry, which is more of a challenge for sectors dominated by SMEs compared to sectors made up of a small number of large firms (Battisti and Perry, 2010).

More generally for firms of all sizes, a company may not be motivated to improve their environmental performance because of a lack of supply chain or customer pressure, the company's management may have a low level of environmental literacy, or management may have difficulty building a case to improve environmental performance because of limited opportunities to better relations with regulators, customers and other stakeholders (Battisti and Perry, 2010).

## **5.5 Corporate responsibility reporting**

### **5.5.1 Early corporate environmental reporting**

Early corporate environmental reporting in the 1970s and 1980s was carried out mostly by larger companies and those in environmentally sensitive industries. Firms began to disclose information voluntarily to preclude potential future costs for compliance with legislation. An important part of this disclosure was a firm's intention to maintain its reputation and status. This holds true today, although

corporate environmental reporting has developed a lot since its early days. With the growing acceptance of environmental regulation, some corporations began to be more proactive about carrying out environmental audits, rather than simply adhering to legislation. For example, Shell Oil introduced a proactive audit in 1981 (Watson & MacKay, 2003). Despite this, environmental reporting was not considered objective or reliable at this time, since the proportion of negative events reported was negligible compared to reporting of positive events. The most positive environmental outcomes were disclosed by the poorest performers. This showed that in an unregulated environment, companies would not always be objective in disclosing their environmental performance. Moreover, as the environmental sensitivity increased, so would the lack of objectivity, i.e. the firms would produce correspondingly more good news (Watson & MacKay, 2003).

### **5.5.2 Triple bottom line reporting**

Triple bottom line (TBL) reporting is a phrase coined by Elkington (1998) to help define sustainability as a three-pronged approach to “economic prosperity, environmental quality and social justice”, under the umbrella of CSR. TBL reporting can potentially be a valuable source of quantitative data about the relationship between CSR and profitability because it measures a company’s economic, environmental and social performance (Watson & MacKay, 2003). TBL reporting stimulated uptake of sustainability reporting world-wide, supported by the Global Reporting Initiative and a number of consultancies (Mitchell, Curtis & Davidson, 2012).

For TBL reporting to be an effective tool, reports must be believable and fully auditable, and show the fundamental conflicts between an organization’s financial obligations and its environmental and social responsibilities (Mitchell, Curtis & Davidson, 2012). Critics have argued that sustainability is a global concept, so full sustainability reports at the organization level make no sense. Organization-level sustainability reporting has little to do with what sustainability is really about and TBL reports can only approximate parts of sustainability. In the corporate sector, even the best sustainability reporting is interpreted as being an account of how the company would like others to see their views on sustainability and how the company understands it (Mitchell, Curtis & Davidson, 2012). Critics argue that it is almost impossible to reconcile the conflict between implementing more sustainability measures and the need for profit. Even Elkington (1998) agrees with this point.

On the other hand, once a company measures its social and environmental impact, it is more likely to become socially and environmentally responsible. The parameters a company measures are the ones the company is more likely to pay attention to, for example to instigate an EMS. For much of the late 1990s and 2000s, cost-cutting was the main business priority. With the advent of TBL, the environmental and social costs of companies moving production to low-cost countries such as India and Brazil became increasingly visible. Growing awareness forced a number of companies, including Tesco and Nike, to examine their standards for overseas suppliers (The Economist, 2009).

### ***Corporate environmental reporting becoming mainstream***

A global survey in 2001 showed that 70 percent of the chief executives interviewed considered corporate social responsibility (CSR) vital to their companies' profitability (Dickson, 2002). Companies were rapidly realizing that bad environmental news had a greater commercial significance than the opposite. To a greater extent, unethical behavior could cost a company money, its reputation, and reduce its share price. Although CSR was becoming more widespread, many companies still interpreted it narrowly. Social issues received much more attention than environmental ones; corporate philanthropy is easier to emphasize than analyzing and fixing a firm's environmental impacts. This is where EMS is useful. A 2002 study (ENDS, 2002) showed that while 78 per cent of business leaders recognized the benefits of CSR, only a third had tried to evaluate how environmental and social issues affected their businesses. Many executives probably still felt that CSR was an issue for their marketing departments (Watson & MacKay, 2003).

Even though CSR's exposure was increasing, the dialog often lacked depth. A big problem was the dearth of reliable evidence showing the relationship between CSR and profitability. A number of academic papers concluded that the benefits of CSR included increased sales to environmentally conscious consumers, improved corporate reputation and better recruitment prospects; however the studies at this stage were short of actual quantitative data (Watson & McKay, 2003).

### ***Corporate environmental reporting in the study countries***

Disclosure of environmental information differed substantially between the UK, US and NZ at the turn of the century. The UK had a more proactive response while companies in the US were more inclined to respond to legislative requirements, and in NZ environmental reporting was not legislated and companies had under-developed systems for recording and reporting this information. In the UK,

environmental information was clearly identified in the annual report and other reports regarding management of environmental activities. Despite increasing reporting legislation in this country, it was mostly management and reporting initiatives that drove disclosures. However, while the UK's proactive response increased voluntary disclosure, it did not necessarily improve reliability (Holland and Boon Foo, 2003). In the US, emphasis was on legislation, which was reflected in the annual report (Holland and Boon Foo, 2003). NZ companies did not typically rely on reporting framework guidance to structure sustainability reports. The motive for corporate sustainability measures was usually a member of senior management, as well as community concerns and shareholder rights (Dobbs & van Staden, 2012).

Holland and Boon Foo (2003) suggested that different drivers and motivations for environmental disclosures brought about many differences in environmental reporting between the UK and US; a disclosure model that reflects underlying management practices makes an organisation more transparent than one that requires disclosure from legislative pressures. They found that overall quality of environmental disclosures was lower in the US, likely due to the legislative reactivity here. In the UK, reporting was still voluntary in the early 2000s, and it better reflected true accountability than in the US where information was disclosed in reaction to requirements of a strict regulatory framework.

### **5.5.3 Responsibility for sustainability strategy and CR reporting**

The position in a firm where responsibility for CR reporting is set is important for its successful implementation. Emerging trends in different regions reflect local management structures. Studies have shown that Chief Executive Officer (CEO) commitment is crucial if a sustainability strategy is to be successfully implemented in an organization (Economist Intelligence Unit, 2010a). A recent trend is growing numbers of Chief Sustainability Officers (CSOs) appointed to expedite firms' sustainability strategies. The number of CSOs has increased considerably in the last decade, and while this growth has leveled off, companies are still creating and filling these positions (Miller and Serafeim, 2014). Despite increasing numbers of CSOs, the CEO is mostly still responsible for sustainability performance; regulators, shareholders and customers do not see sustainability as a "staff responsibility" (Miller and McGowan, 2013).

Miller and Serafeim (2014) found that the CSO role changes as an organization transitions through the different stages of sustainability commitment. At the first stage of commitment, Compliance, very few companies have appointed a CSO or equivalent position. CSOs in these companies tend to have a low

level of authority and most sustainability strategies are fairly generic. In the second and third stages, Efficiency and Innovation, the CSO's authority is more elevated. As the organization increases its commitment to sustainability, its sustainability strategy becomes more tailored to the organization. A CSO decentralizes decision rights and allocates responsibilities, so although the CSO gains more authority, the position becomes less central in later stages of sustainability (Miller and Serafeim, 2014).

While CR reporting alone does not guarantee a sustainable outcome, it promotes the integration of sustainability criteria into an organization, because often what gets measured gets done. CR reporting requires a company to collect information about impacts and processes that may not have been measured previously. The new data can provide better transparency about a company's performance as well as the necessary knowledge to increase efficiency, reduce use of natural resources and improve performance. As such, CR reporting encourages a company to set up an EMS, to help a company avoid or lessen their environmental and social impacts that may have financial risks (Ernst & Young, 2013).

CR reporting is now completely mainstream business practice worldwide because more than half of companies in a regular survey now report (KPMG, 2013a). 71% of the 4,100 companies in 41 countries surveyed in 2013 now carry out CR reporting, an increase of 7% since 2011 when 64% of companies in 34 countries surveyed carried out CR reporting. Additionally, 51% of reporting companies around the world now include CR information in their annual financial reports, up from 20 per cent in 2011 and 9 per cent in 2008. Only one in 10 companies published a fully integrated report (KPMG, 2013a). Of the three study countries, CR reporting in the UK and USA are more advanced than in NZ (discussed further in sections 5.8, 5.9 and 5.10). Another trend is that more companies are using a third-party to independently audit their sustainability reports (KPMG, 2015).

Responsibility for CR reporting lies in different places in each of these countries, with NZ's responsibility much less structured than USA and Europe, as follows:

### ***Responsibility for CR reporting in NZ***

A 2011 survey of NZ companies found no definite pattern of responsibility for developing the sustainability strategy/EMS or CR reporting in organizations in NZ. The main person responsible for strategy was the managing director (64% of responding companies). For companies with more than 99 employees, the managing director's involvement in environmental strategy dropped to 48%. A third of

companies surveyed had an environmental manager. The next most actively involved was the operations manager at 24% (Collins *et al.*, 2011).

### ***Responsibility for CR reporting in the USA***

In the US, responsibility for the sustainability strategy and/or CR reporting is usually with the chief operating officer (COO), or the chief executive officer (CEO). Waste and carbon emissions are often from a company's manufacturing facilities, distribution outlets, and offices, so the COO is the best person to preside over this operations-focused information as the person who holds ultimate authority in those areas (Economist Intelligence Unit, 2010a).

### ***Responsibility for CR reporting in Europe***

Responsibility for CR is different in Europe to the US due to the distinction between management and supervisory boards. The management board is responsible for day-to-day operations, while the supervisory board is concerned with long-term strategy. Responsibility for sustainability reporting in European companies sits with a board member responsible for strategy, communications and sustainability (although it can sit with the CEO or COO). This board member sits on the management board; it is unusual for a company to have a supervisory board member with responsibility for sustainability reporting (Economist Intelligence Unit, 2010a).

## **5.5.4 CR reporting and globalization**

Development of CR reporting has been closely linked to increasing globalization, which caused more movement of people, goods, ideas and corporate activity across borders. When an organization spreads its operation beyond its home country, the assumption is that it treats its people and the environment with equal respect wherever it operates. An organization's activities can be critically watched and followed more easily than ever before, regardless of where they operate, by means of the Internet and other advances in communications, non-governmental organization activity and media scrutiny. Essentially, increasing CR reporting has largely been a response to state incapacity, since not all governments (particularly in developing countries) are able to fully address these issues on their own (National Research Council, 2007).

Globalization has changed the role of the firm in society and the global economy. The public now expects firms to contribute to the social and environmental health of the planet. With globalization, the

distances between people and regions have contracted, leading to closer cooperation and integration, and more interconnectedness politically. Firms' economic power, and therefore their responsibilities, reach further. A globally responsible firm is now expected to care for the communities in which it operates, behave as a good employer, and have its value chain and business model reduce problems for the environment, the wider community and democratic processes around the world. Many firms voluntarily focus on making positive contributions to their communities and the environment to offset environmental externalities (Hassel, 2009).

CR reporting is now a much more comprehensive package. With its broader interpretation, corporate responsibility and CR reporting have become a public policy issue. A company can contribute to the public good and provide policy solutions on a global scale by supporting government in regions of limited statehood and helping to achieve social and environmental goals in its host country. Governments today handle increasing numbers of policy problems with fewer resources. Protocols and standards that are common in wealthy countries are not necessarily in place in developing ones (Hassel, 2009). The Rana Plaza tragedy in Bangladesh is an example of how multi-national companies can initiate their own policies outside their home territory, policies they would be expected to put in place if operating in their home countries. Rana Plaza has shown how important pressure from international aid organizations and consumers can be in shaping a company's corporate responsibility (Yee, 2014).

A recent survey found that diversity in corporate sustainability leadership seems to be shifting toward recognition of a few dominant firms globally (GlobeScan/SustainAbility, 2014). Competitive pressure is a key factor stimulating firms to integrate corporate sustainability, more than other incentives including green consumerism. KPMG (2015) stated that the main driver for CR reporting is legislative, and that there is increasing regulation around the world requiring companies to publish non-financial information. Moodie (2015) suggested a new type of gold rush is developing, where brands "race each other to claim an environmental or social cause".

## **5.6 International voluntary EM and CR standards and initiatives**

Changing expectations of corporate performance and transparency have become focused around CR reporting; many sustainability initiatives and reporting frameworks are forming globally as a result, with innovative collaborations between business, industry experts, civil society, and government agencies,



among others. Currently there are more than 100 ratings agencies that search through sustainability reports to score firms' disclosure and content (Kline, 2014). The initiatives vary in focus and substance and while many are complementary, CR reporting is becoming an increasingly complex and fragmented landscape; approximately 380 arrangements around the world have been identified that affect the way organizations report on sustainability (Climate Disclosure Standards Board, 2015). With regards to this fragmentation, the UN Environment Program published a report in late 2015 urging companies to align sustainability performance and reporting with the goals of the *2030 Agenda for Sustainable Development*. The aim of this Agenda is to transform CR reporting from incremental, isolated improvements in a broadcast format to collaborative reporting where companies engage with upstream suppliers and downstream stakeholders for an ongoing, dynamic exchange (UNEP News Centre, 2015).

The reporting landscape and EMS field are evolving so rapidly around the world that it is impossible to cover it all within this thesis. Some of the projects currently having a global impact are summarized below.

### **5.6.1 Global Reporting Initiative**

The Global Reporting Initiative (GRI) developed an environmental reporting system in 1997 aiming to raise the standard of sustainability reporting to that of financial reporting. The GRI system includes a set of performance indicators for environmental, social and economic factors (The Economist Intelligence Unit, 2010a). Examples of performance indicators are greenhouse gas emissions, energy consumption, incorporation of human rights concerns, and corruption-related risks (Global Reporting Initiative, 2013). By 2010, nearly 3,500 companies around the world issued sustainability reports, and 1,000 of these reports were based on the GRI's G3 (third-generation) reporting guidelines. To step up the process, the GRI disclosure structure now had three reporting levels, each with performance requirements and certifications (Economist Intelligence Unit, 2010a).

The GRI launched the G4 Sustainability Reporting Guidelines in 2013 to help companies prepare robust sustainability reports and correlate with internationally recognized reporting documents. The guidelines were used by 78% of reporting companies worldwide in CR reports in 2013 (KPMG, 2013a). Development of the guidelines was an international collaboration involving representatives from business, civil society, industry experts, government agencies and regulators among others (Global Reporting Initiative, 2013).

The GRI Sustainability Disclosure Database illustrates sustainability reporting's rapid leap into the mainstream. The database, which tracks sustainability reports submitted by companies, grew more than 30% each year between 2007 and 2011. A 2006 study found that 5% of Fortune 500 companies participated in GRI reporting. By 2012, 53% of S&P 500 companies produced sustainability reports, 63% of which were GRI reports (Ernst and Young, 2013). KPMG (2015) found that the GRI is the most commonly used voluntary reporting guideline around the world.

### **5.6.2 UN Global Compact**

The UN Global Compact was launched in 2000 as a voluntary framework for businesses to align their systems with ten principles, including environment, human rights and labour regulations. Companies that join the Compact must produce a Communication on Progress (COP) report each year showing what the firm has done to implement the ten principles. At the Global Compact's launch in 2000, 40 organizations were present; in 2010, 8,000 companies in 140 countries had joined, equally from developed and developing countries, and from almost every industry sector and company size. 4,000 civil signatories were holding companies accountable for their commitments (UN Global Compact, 2013; Economist Intelligence Unit, 2010a).

This progress is significant, but 8,000 participants is a small portion of the world's approximately 70,000 multinational companies and millions of smaller enterprises. While the majority of companies signed up to the Compact in 2013 had set sustainability expectations for their suppliers, most were not monitoring compliance or helping suppliers reach goals. Large companies are beginning to demand more from their suppliers. The UN Global Compact is envisioning a ripple effect as more companies carry out responsible supply chain management; where large companies lead and show benefits, others will follow (UN Global Compact, 2013).

Berliner and Prakash (2015) found that the UN Global Compact's monitoring and enforcement was not rigorous enough to motivate participants to adequately carry out their obligations. This has led to some participants strategically avoiding costly environmental and human rights obligations and making much of the less expensive positive steps they take – such as formulating an environmental policy – to make it look as though they are carrying out their obligations.

### **5.6.3 Forest Stewardship Council**

The Forest Stewardship Council (FSC) was set up more than twenty years ago when the international intergovernmental community could not agree on an international forest protection convention. It is a global voluntary system to certify forests and forest products to promote better forest management using EMS (Forest Stewardship Council, 2010). A recent survey found that client demand is now the key driver for FSC certification (Forest Stewardship Council, 2015). This illustrates how companies now recognize that clients and stakeholders do not always identify the difference between a company and its suppliers and the emphasis that is now placed on sustainable supply chains, as discussed in sections 1.3 and 4.3.4. Certification from such a recognized organization can differentiate a company and help reach niche markets that value responsibly managed products.

### **5.6.4 International Integrated Reporting Council**

The International Integrated Reporting Council's (IIRC) mission is to create a global integrated reporting framework bringing together financial, environmental, social and governance information in a clear, consistent and comparable format. Launched in 2010, the IIRC is a global collaborative body that brings together leaders from global organizations, including the GRI, Prince's Accounting for Sustainability Project, International Federation of Accountants, and the International Accounting Standards Board. The Council published guidelines on elements to be presented in an integrated report in 2013 (International Integrated Reporting Framework), and is working on having its framework adopted by reporting organizations around the world (International Integrated Reporting Council, 2013; Global Reporting Initiative, 2013).

### **5.6.5 Carbon Disclosure Project**

International voluntary initiative the Carbon Disclosure Project (CDP) is a UK-based organization that works with large companies and shareholders to make carbon-emissions reductions central to business. The CDP requests carbon, forest, water and natural capital information from the largest companies globally and collects data from organizations in approximately 60 countries. In 2014 the CDP published the CDP Climate Performance Leadership Index, which shows the 187 companies around the world that are doing the most to combat climate change. The world's 500 largest listed companies are responsible for 3.6 billion metric tons of greenhouse gas (GHG) emissions; 50 of those companies are responsible for nearly 75% of those emissions (Carbon Disclosure Project, 2013). Naming and shaming these companies encourages their leaders to improve environmental performance, for example through the use of EMS.

### **5.6.6 Global Initiative for Sustainability Ratings**

Launched in 2011, the Global Initiative for Sustainability Ratings (GISR) joined the efforts to make financial markets agents of (instead of impediments to) achieving the Post Rio+20 sustainability agenda. GISR's goal is to design and steward a non-financial ratings standard to cover environmental, social and governance (ESG) issues. In doing so, the standard will expand and accelerate businesses' contribution to sustainable development worldwide; what gets measured gets done. The initiative's strategy includes a rating framework and associated accreditation program, and a searchable online database of ESG ratings (Global Initiative for Sustainability Ratings, 2015).

### **5.6.7 The B Team**

The B Team is a global nonprofit initiative launched in 2013 to bring together international CEOs and business leaders to create sustainable business models. The idea is to mainstream sustainability throughout the private sector by moving the focus from immediate profit to investment that benefits the world in the long term. When first initiated, it was seen as a sign that the corporate sustainability movement was entering a new dynamic phase by aligning influential business leaders who run major corporations (e.g. Tata and Kering), with political influencers such as Gro Harlem Brundtland (former Norwegian prime minister). Although still early days, critics have noted the initiative has so far failed to make any meaningful progress. A number of other sustainability initiatives have been created in recent years but they are all under-financed and so far none has successfully taken on the fossil fuel lobby, which is cash-rich and an expert at finessing politicians and public opinion (Confino, 2014).

### **5.6.8 Dow Jones Sustainability Indices**

Socially responsible investment has become increasingly depicted as a way to promote environmentally sustainable development since the late 1990s (Richardson, 2008). The Dow Jones Sustainability Indices (DJSI) are a group of indices that evaluate the sustainability performance of leading companies in terms of economic, environmental and social criteria. The launch of the DJSI in 1999 reflected the increasing demand for sustainability information from investors and stakeholders. The DJSI was the precursor to many other US and international sustainability index funds, such as FTSE4Good and the Domini Social Index. Many of these funds lasted only a short time, even though studies have shown that the companies within are superior in many ways (Brill, 2009). The DJSI provides an annual list of the top three industry leaders as well as the three least improved industries relative to the previous year (Dow

Jones Sustainability Index, 2015). Naming and shaming provides an incentive for companies and industries to improve their environmental performance. Companies included in the indices are monitored throughout the year, assessed on their long-term economic, social and environmental management plans, as well as their efforts to continually improve their sustainability plans (Dow Jones Sustainability Index, 2015).

Criticism of the DJSI is that it is exposed to corporate biases because social and environmental data is self-reported, and so not necessarily credible. Additionally, the indices reward those companies with the best ability to respond to information requests and questionnaires rather than those with the best corporate responsibility practices. Companies with the most environmentally challenging issues are likely to dedicate more public relations resources to improve their public image. Some critics consider the criteria to be unbalanced – skewed toward economic criteria to the disadvantage of social and environmental ones. Additionally, only large companies are included; other sustainability indices include smaller companies (Windolf, 2011).

## **5.7 Climate change and EMS**

Climate change became more of a key sustainable development issue after the turn of the century. Many governments took steps to reduce greenhouse gas (GHG) emissions, including introducing emissions trading programs, carbon taxes, and energy efficiency standards. Companies recognized that they had to be able to understand and manage their GHG risks if they were to succeed long-term and be prepared for future national or regional climate policies. EMS were becoming a more prominent tool in the effort to shift societies and economies to a more climate friendly development path. Companies with well-designed and maintained GHG inventory would be able to manage and identify reduction opportunities, participate in mandatory (and voluntary) reporting programs, and participate in GHG markets (World Resources Institute and World Business Council for Sustainable Development, 2004).

Companies need to be prepared for future national or regional climate policies, and this is where EMS can be useful. Corporate emissions reporting is either voluntary or mandatory. On the voluntary side, the Carbon Disclosure Project, Global Reporting Initiative and the Greenhouse Gas Protocol (developed by the World Resources Institute) dominate. The mandatory side tends to be based on cap-and-trade, but is increasingly using the international guidelines that oversee the voluntary side (Economist

Intelligence Unit, 2010a). It has been found that firms with an established EMS are more likely to voluntarily disclose GHG emissions, and firms with an ISO 14001 certified EMS are more likely to voluntarily disclose GHG emissions than firms whose EMSs are not certified (Wahyuni *et al.*, 2009).

The International Standards Organization (ISO) developed new standards for GHG reporting in 2006 and 2007: ISO 14064 (2006): (parts 1-3) measuring GHG emissions and ISO 14065 (2007): for organizations that verify GHG emissions reporting. The three components of ISO 14064 are designing an auditable GHG inventory; determining baselines, and quantifying, monitoring and reporting project performance relative to the baseline; and verifying GHG inventories and validating monitoring projects (International Standards Organization, 2011). At the same time, the Intergovernmental Panel on Climate Change (IPCC) produced the “2006 IPCC Guidelines for National Greenhouse Gas Inventories” (IPCC, 2006). The guidelines provide internationally agreed methods to estimate GHG inventories.

Many of the obstacles to effective global response to climate change at the Stockholm conference in 1972 remain today. Examples of these are mistrust between countries in world politics, governments’ hold on traditional ideas of national sovereignty even though they acknowledge a coordinated global response is necessary, and the disconnect between the short-term need for economic growth and the long-term vision necessary for ecological planning (Conca & Dabelko, 2010).

## **Environmental management systems in the study countries**

A combination of environmental policies and regulations as well as soft instruments such as voluntary commitments to EMS standards, industry initiatives and eco-labels have encouraged EMS uptake in all three countries. The British and NZ governments provide easily accessible and affordable EMS guidance and incentives, such as the stepped programmes Envirostep in NZ and the Acorn and Green Dragon in the UK. Initiatives to encourage EMS uptake in the USA tend to be state and federal encouragement towards ISO 14001 and industry-specific standards.

### **5.8 Development of EMS & CR reporting in NZ**

NZ’s methods of furthering sustainable development are decentralized, participatory and inclusive (OECD, 2007). NZ’s Labour-led government, companies and consumers increasingly emphasised the

environmental credentials of their activities from the turn of the century. The Govt<sup>3</sup> programme, the Sustainable Development Programme of Action and the NZ Waste Strategy aimed to help government agencies improve sustainability with measureable success (Pedersen, n.d.), e.g. by July 2007, 48 central government agencies had joined Govt<sup>3</sup> generating considerable cost savings through environmental efficiencies (Ministry for the Environment, 2007). The programmes were wound back in 2009 with the newly elected National government (Watkins, 2009).

The then-Ministry of Economic Development's 2007 'sustainability six-pack' progressed this with initiatives to support households and businesses towards sustainability, eco-verification of goods and services, and talk of a carbon neutral public service and zero waste (Markland, 2013). Additionally to this, NZ's Environment 2010 Strategy was a statement to direct environmental policies with the aim of providing a strategic overview of the way environmental issues were dealt with. The principles encouraged EMS uptake by aiming to integrate environmental, social and economic elements in decision making at all levels and sectors (Upton, 1996).

The government has paid significant attention to improving EMS uptake by businesses. NZ's smaller population has made it easier for government outreach to access a high proportion of businesses to promote EMS. It is recognized that NZ's majority of micro-enterprises (those with 10 or fewer staff) can achieve real environmental and business benefits without having to adopt a formal EMS (e.g. under ISO 14001) if provided with a low-cost, easily understandable scheme. Government and business have launched a number of initiatives in recent years to encourage environmental management, some of which include formal certification. EMS schemes continue to emerge with varying results, for example CarbonZero, Enviro-Mark, Envirostep, The Natural Step, the Get Sustainable Challenge, and the Household Sustainability Programme (Markland, 2013). As well as this government activity, a number of business groups and associations have established in the last few years with sustainability as their primary focus, such as the NZ Business Council for Sustainable Development and the Sustainable Business Network (Ministry for the Environment, 2007). The Sustainable Business Council's Value Chain Guide (NZ Sustainable Business Council, 2014) is a voluntary membership programme that guides businesses to building a sustainable supply chain as well as encouraging CR reporting to GRI standards.

NZ's worldwide reputation is of a 'clean, green' country. The government and many businesses take full advantage of this position to promote NZ products and services. Despite this reliance on its environmental reputation, studies have shown that NZ businesses mostly do not walk the talk and

environmental sustainability is not high on the business agenda (Whitehead, 2013). Unfortunately, NZ's top companies do not compare favourably in environmental performance with international companies (Battisti and Perry, 2011). As discussed in 4.10.4, past evidence has suggested that NZ businesses are either unable or unwilling to comply with environmental regulations. Obstacles to a drive to business sustainability and EMS uptake in NZ include lack of incentives from markets and regulation. Environmental externalities often still fall on the taxpayer, so businesses have no incentive to improve wasteful practices (University of Auckland Business School, 2016). Additionally, NZ has a small population and customers with a sustainability focus are a small proportion of that population. Many cannot afford to pay extra for sustainably produced goods and services (University of Auckland Business School, 2016). The OECD (2007) recommended that economic and fiscal instruments such as taxes, charges, and deposit-refund programmes be used more to cover the costs of environmental externalities.

### **5.8.1 ISO 14001 in NZ**

NZ's uptake of ISO 14001 has been slow and variable in contrast to the increasingly strong uptake in the UK and USA when comparing absolute numbers of certifications. However, a comparison of certification intensity changes the picture to show that in 2014 NZ actually had more certifications as a function of PPP GNI than the US, despite its low absolute number of certifications. Nevertheless, NZ's 94% micro-enterprises (those with 10 or fewer staff) account for only 12% of the ISO 14001 certificates issued (Markland, 2013). Barriers in NZ to ISO 14001 commitment are the high cost, lack of resources required for implementation, and complexity. Additionally, there are few incentives for EMS uptake: regulators and procurers in NZ do not formally recognize EMS, and not many markets discriminate between suppliers based on environmental performance (Markland, 2009). Cassells *et al.* (2012) found that if NZ firms had more external pressure, for example from suppliers, consumers and stakeholders, uptake of ISO 14001 may be more difficult to ignore or give up. Such nonstate actors can be proxy regulators, encouraging EMS uptake (Neumayer and Perkins, 2003).

The environmental requirements of export markets can stimulate ISO 14001 uptake (Neumayer and Perins, 2003), and ISO 14001 is often a requirement for large exporters entering premium markets. Since 2010, ISO 14001 uptake in NZ has been boosted by these increasing supply chain pressures. Other factors stimulating recent uptake are possible cost savings through reducing greenhouse gas emissions and the advent of low-cost, easily implementable schemes that can lead to ISO 14001 certification (such as Envirostep) (Markland, 2013).



### **5.8.2 Farm environment plans & other primary production environmental performance standards**

Farm environment plans (FEPs) are a type of EMS that can provide a framework to implement industry-based best management practices and meet environmental regulations. Increasing numbers of farm, horticulture, and forest operators adopted EMS/FEPs in the early 2000s, for example Sustainable Wine Growing NZ and the Forest Stewardship Council standards (which covered nearly half of NZ's commercial forests in 2007). FEPs are an important part of NZ's EMS base.

Some NZ exporters have had to make significant efforts to provide environmental assurance to international clients (for example supermarket chains Waitrose, Tesco and Walmart) for whom sustainability is a key element of their market profile. Such major organisations drive environmental standards along their supply chains, and nowadays require suppliers to show formal environmental credentials (Markland, 2009). Some of the larger NZ sector groups have responded by creating platforms to demonstrate environmental performance, for example Zespri's Kiwigreen orchard management system (introduced 2009), Qualmark Green's sustainable tourism assessment, and Fonterra's Clean Stream Accord (introduced 2003). Sustainable Winegrowing NZ (SWNZ) is a formal EMS introduced in 1997, firstly for vineyards and later for winery operations. Entry into certain awards and events has been restricted to wineries with a recognized environmental sustainability programme since 2010, which has added pressure for EMS uptake. Now over 90 percent of NZ's vineyard area is produced under SWNZ certification (Gilinsky Jr *et al.*, 2016).

### **5.8.3 Corporate responsibility reporting in NZ**

NZ is the only study country that does not mandate corporate responsibility (CR) reporting. Companies included in NZ's emissions trading scheme (ETS) are obliged to keep a record of their carbon emissions, and this must be provided to government for emissions unit accounting, but they do not have to share this information publicly. OECD (2017) stated that NZ's ETS has yet to make a meaningful contribution to GHG reduction. Organizations such as the Global Reporting Initiative, and NZ's Sustainable Business Council (SBC) are working to encourage use of CR reports, for example SBC members must report their carbon footprint to the SBC within a year of joining, and must prepare a Triple Bottom Line report within three years.

Even though CR reporting is now considered mainstream business practice worldwide, this form of reporting in NZ is limited, probably because CR reporting is not legislated here. Countries with higher rates of CR reporting have made it a legal requirement (KPMG, 2015). Less than half (47%) of the top 100 NZ companies (based on revenue) produced a CR report in 2013, and only 17 of these were specific to NZ instead of global group reports. Most NZ-based companies with overseas parent companies created group reports that do not reflect local sustainability issues (KPMG, 2013b). While the standard of NZ-based reports is not far below international practice, understanding of integrated reporting in NZ is limited. Significant improvements were needed before the sustainability reports assessed in the KPMG survey would be considered well-balanced, effective and strategic (KPMG, 2013b).

Despite the low level of formal reporting, many NZ companies do actually partake in corporate responsibility activities. The difference in NZ is that many companies do not include this information in annual financial or stand-alone CR reports. Companies here tend to use other channels instead such as company websites, social media and internal communications. One reason for this could be a lack of knowledge and consensus on what CR activity should be reported (New Zealand Management, 2014).

## **5.9 Development of EMS & CR reporting in UK**

The world's first formal EMS standard, BS 7750, was published in 1992 by the British Standards Institute (BSI). This standard was the precursor to ISO 14001; many British firms adopted BS 7750 then progressed to ISO 14001. BS 7750 was a companion to the BS 5750 standard on quality management systems, which formed the template for the ISO 9000 quality management system standards. In 1993 ISO decided that an international environmental management standard was needed because there were so many different, often conflicting, standards around the world. The publication of ISO 14001 led to the withdrawal of BS 7750 and other EU national standards (Tinsley, 2014). ISO 14001 rapidly caught on in the UK because of public concern over industry's impact on the environment, British Standards Institute promotion of the new standard, and the fact that British businesses already had experience with EMS standards through EMAS and BS 7750 (Kollman and Prakash, 2002). Since the early days, the UK has shown a steady increase in ISO 4001 certifications to 16,685 certificates in 2014 (ISO, 2014).

### ***Initiatives to encourage EMS uptake and CR reporting***

Several initiatives have been created in the UK to encourage EMS uptake and environmental reporting. Prime Minister Tony Blair challenged all FTSE 350 companies to report on environmental policies and activities in 2001 (76 actually did so) (Watson & MacKay, 2003). The 1999 Sustainable Development Strategy: *A Better Quality of Life - Strategy for Sustainable Development for the United Kingdom* actively encouraged EMS uptake and ISO 14001 and EMAS certification. The SIGMA Project (Sustainability Integrated Guidelines for Management), was launched in 1999 to link industry, government and environmental groups through the use of EMS and ISO 14001. The project provided free toolkits to make it easier for businesses to incorporate sustainable business practices such as environmental and social accountability reporting, and created a network of businesses for information sharing (SIGMA Project, 2003).

The 2002 Department of Trade and Industry (DTI) white paper *Modernising Company Law* required economically significant companies to publish an Operating and Financial Review (OFR) as part of their financial reporting. The OFR is a narrative report to provide a broader-than-financial picture of the company's operations. The white paper also required companies to produce environmental reports if their directors considered such issues to be a material consideration for shareholders (Department of Trade and Industry, 2002). After lengthy consultation and preparation of a reporting standard, legislation was passed in March 2005 requiring an OFR, but was unexpectedly repealed less than a year later. The Companies Act was introduced in 2006 requiring company reporting, and a 2013 amendment to this legislation requires all except small companies to include a strategic report in a separate section of the annual report disclosing certain environmental matters, using key performance indicators. Listed companies must also publish greenhouse gas emissions in the directors' report (Rowbottom and Schroeder, 2014).

### **5.9.1 British/European EMS standards**

Several EMS standards and programmes have been developed in the UK that cater to different sized businesses and the different countries within the UK. British organizations can choose from the following programmes.

#### ***ISO 14001***

The UK has a much higher level of ISO 14001 certifications than NZ and the US. This could be due to international trade influencing adoption rates; Prakash and Potoski (2006) found that countries that

export to destinations with high levels of ISO 14001 certifications have higher certifications themselves, and Neumayer and Perkins (2003) found that countries with higher exports of goods and services to the EU and Japan had a higher ISO 14001 uptake per capita. British firms have had encouragement from within the country to certify to ISO 14001 too; many public procurement contracts in Europe require suppliers to have ISO 14001 certification. Pre-qualification questionnaires used as part of the bidding for public (and sometimes private) sector contracts frequently ask if a company has an EMS, so having ISO 14001 is likely to help a company win a contract (Environmental Data Services, 2013).

In England and Wales ISO 14001 has been increasingly integrated into environmental regulation. For example in 1999 the UK government started stressing the importance of having an EMS for firms that would come under the new EU Integrated Pollution Prevention and Control (IPPC) regulations, as a way of meeting part of the requirement to use best available techniques (Environmental Data Services, 2013). The Environment Agency now requires all IPPC permit holders to have an EMS, although this does not have to be certified to a standard such as ISO 14001. Many companies certify to ISO 14001 as a ready way of demonstrating they have an EMS. Operators certified to ISO 14001 are officially recognized in the Environment Agency's operational risk assessment (OPRA) scheme, which ties into the fees imposed on industrial sites; a higher score under OPRA means a firm pays lower fees (Environmental Data Services, 2013).

### **EMAS**

The EU Eco-Management and Audit Scheme (EMAS) is available to all types of organisations worldwide wanting to improve environmental performance. The scheme was revised in 2001 to include all economic and service sectors of public and private economic activity. EMAS requirements are significantly higher than those of ISO 14001. British businesses prefer the global branding and lower requirements of ISO 14001, so EMAS uptake amongst UK companies is lower than ISO 14001. Two years after EMAS came into operation, only 24 UK companies had registered; by 2007, the number of UK participating companies had risen to 360, but dropped to 288 in mid-2011 (Wurzel *et al.*, 2013).

### **Project Acorn**

Project Acorn was a nation-wide supply chain project from 2001 to 2003 to help SMEs develop their own EMS, tailored to the specific needs of each business. EMS initiatives were not reaching small and medium sized enterprises (SMEs), which are the majority of Europe's non-primary sector private

enterprises (ENDS, 2004). This problem was realized and initiatives were explored to improve EMS uptake within SMEs. Project Acorn produced and refined a six-stage model that could eventually help a company to ISO 14001 or EMAS certification. When the project finished, British standard BS 8555 was formed from Project Acorn. This standard adopts a staged approach to make EMS implementation easier (Chen, 2004).

### **BS 8555**

When Project Acorn was completed, the Acorn Method was withdrawn and the new British Standard BS 8555 (*Environmental Management Systems: Guide to the phased implementation of an EMS including the use of environmental performance evaluation*) was published in April 2003. This standard aimed to provide guidance to all types of companies, and SMEs in particular, to put together an externally certified EMS using a phased approach to implementation, instead of the all-or-nothing approaches offered by other standards (ENDS, 2003). Unlike EMAS and ISO 14001, an organization cannot be certified under BS 8555; instead, the standard guides an organization step-by-step to implement an EMS, and can be a good way of working towards the other standards. This stepped approach to EMS development, aimed at SMEs particularly, was mirrored in NZ with the launch of Envirostep in 2009.

Although BS 8555 is not a certifiable standard, it is possible for the steps an organization has taken towards certification to be recognized under three other schemes:

- Acorn, backed by the UK Institute of Environmental Management and Assessment;
- BS 8555 STEMS (Steps to Environmental Management Systems);
- Green Dragon Standard, designed in Wales in 2000 to promote better environmental management particularly in SMEs.

The intention was that BS 8555 would lead SMEs to gain a full EMS such as ISO 14001, but so far the standard has not gained wide awareness, which has meant SME uptake and recognition of its value by larger companies has not been as high as initially hoped. The 2015 revision of ISO 14001 may help with this by making ISO 14001 more accessible to SMEs (ENDS, 2013).

### **5.9.2 Corporate responsibility reporting in the UK**

A recent report (KPMG, 2013a) found that the best quality CR reports in the world come from large companies in the UK, Italy and Spain. In 2013, 91% of companies surveyed produced CR reports, down

from 100% in 2011. The average quality score of UK companies in the study was 76, compared to 54 in the US (no NZ data was available) (KPMG, 2013a). KPMG (2015) found that the countries with the highest rate of CR reporting (including the UK) all have legislation requiring non-financial reporting. Legislation in the UK requiring CR disclosure includes:

- London Stock Exchange listed companies must report on GHG emissions from 2013.
- The Companies Act requires large and medium sized companies to disclose CR information relevant to company performance in the annual report (KPMG, 2013a).
- An amendment to the Companies Act 2006 in 2013 means that all UK companies are now required to produce a standalone Strategic Report, which requires disclosure on GHG emissions, human rights and diversity in the company (Global Reporting Initiative, 2013).
- The Carbon Reduction Commitment (2010) requires certain companies to measure and report their energy-use related emissions (Global Reporting Initiative, 2013).

## **5.10 Development of EMS & CR reporting in USA**

EMS uptake in the US is encouraged by a combination of environmental policies and regulations, industry initiatives, and ever-widening reporting of companies' environmental performance. Most federal activities encouraging EMS use come from the Environmental Protection Agency (US EPA) (see 5.10.2). States are also important in this push by carrying out initiatives with or without federal support (see 5.10.4).

### **5.10.1 ISO 14001 in the USA**

The adoption and proliferation of ISO 14001 is the most noticeable recent development in the use of EMS in the USA. ISO 14001 was initially slow to take off for several reasons: companies initially took a 'wait and see' approach due to limited outreach efforts by the American organizations responsible for the development of ISO 14001 (American Standards Institute and the US Technical Advisory Group to Technical Committee 207). US regulatory bodies EPA and state enforcement authorities gave mixed signals about the standard. A US EPA-funded project (Diamond, 1996) on ISO 14001-based EMSs found two main reasons for uncertainty about implementation of an ISO 14001 EMS: the project questioned the ability of the ISO 14001 standard to enable firms to realise their long-term environmental goals (such as reduced costs and better access to international markets). Secondly, the project found that the ISO 14001 standard lacked clarity; firms learning to translate environmental objectives into operational

processes did not receive clear instruction from ISO 14001. These reasons led to a number of misunderstandings about the ISO 14001 series throughout the US (Edwards *et al.*, 1999). It was unclear whether ISO 14001 certification would lessen a firm's regulatory burden, a lack of ISO 14001 certification was not seen as a risk to trade at this time, and some firms thought that the documentation required by the standards could expose them to liability under the legal system (ENDS, 2013).

ISO 14001 certifications began to increase rapidly in 1998, particularly among large companies such as Ford, IBM and Lockheed Martin (Cascio and Hale, 1998). Actual uptake of ISO 14001 was and still is much lower than the UK (6,586 in the US compared to 16,685 in the UK in 2014); nevertheless business-driven mandates and government encouragement for ISO 14001 saw a 49 percent increase in uptake between 2010 and 2014 (ISO, 2015).

#### **5.10.2 Federal EMS initiatives from the EPA**

As discussed in 3.3, the adoption of new environmental legislation came to a virtual standstill for decades after the flush of new environmental law in the 1970s. With the lack of meaningful statutory change, for the last twenty years federal environmental policy innovation has come about through administrative action by the Environmental Protection Agency (EPA); with slim hope of statutory and regulatory solutions to environmental concerns, voluntary approaches are one of the few ways in which government can respond (see also 4.12.2). The EPA's *Environmental Management Systems: An Implementation Guide for Small and Medium-Sized Organizations* (initially published 1996 and reviewed in 2001) was published to help SMEs implement an EMS, but does not provide any recognition of steps taken toward ISO 14001 certification. Some of the EPA's voluntary EMS programs are outlined below (Coglianese and Nash, 2014).

The EPA created an Environmental Leadership Program (ELP) to recognize and reward the companies with the best environmental efforts in the early 1990s. EPA solicited proposals for ELP pilot projects and in 1995 accepted twelve facilities into the ELP program: ten from the private sector and two from federal government. Each facility experimented with innovative environmental projects, including implementing an EMS. In return, the facilities received public recognition of their efforts and a degree of leniency for environmental regulatory violations that were corrected. The facilities went ahead with their pilot projects, but after two years ELP was wound down as EPA shifted priorities to a series of new higher-profile projects, such as the Common Sense Initiative (a four year programme focused on key

industry sectors) and Project XL (an excellence in leadership in environmental protection program). (Coglianese and Nash, 2014).

The EPA has also had an important role in helping local government apply EMSs. The agency funded a series of pilot projects from 1997 to 2004 to test the applicability of EMS on environmental performance in local government, with positive results. The *EMS Troubleshooters' Guide for Local Governments* (EPA, 2002) was published in 2002 as a result of these projects (Global Environment and Technology Foundation, 2000).

#### ***National Biosolids Partnership***

The EPA partnered with the National Association of Clean Water Agencies (NACWA) and the Water Environment Federation (WEF) in 1997 to form the National Biosolids Partnership (NBP) to progress environmentally sound biosolids management practices. Central to this partnership was development of an EMS for biosolids for the wastewater industry. Many wastewater agencies now use the NBP EMS program (National Biosolids Partnership, n.d.).

#### ***National Performance Track Program***

The US EPA National Performance Track Program was established in 2000 to encourage the use of EMS. The program recognized and rewarded organizations that implemented an EMS, consistently surpassed regulatory compliance requirements, showed environmental stewardship, and worked with their local communities (Bardelline, 2011). Performance track changed the relationship between the government administration and industry by encouraging a collaborative relationship between the EPA and companies enrolled in the programme. The programme was suspended in 2009 after nearly a decade, but has since been emulated by a number of federal and state regulatory authorities (Coglianese and Nash, 2014).

#### **5.10.3 Federal EMS initiatives outside the EPA**

Application of EMS in federal agencies has been propelled by a series of Executive Orders (EO) issued by the Office of the President of the United States. Key to these are EO 13148 (2000) and EO 13423 (2007):

- Executive Order 13148 *Greening the Government through Environmental Leadership* mandated every federal agency to implement an EMS no later than December 2005 (Executive Order 13148, 2000).



- The White House Council on Environmental Quality (CEQ) sent a memorandum to the heads of all federal agencies in 2002 emphasizing the importance of significantly increasing the number of federal facilities using EMSs (White House Council on Environmental Quality, 2002).
- Executive Order 13423 *Strengthening Federal Environmental, Energy and Transportation Management* required the use of EMSs as the main tool to address environmental aspects, establish objectives and targets, and collect, analyze and report information to measure performance toward the environmental energy goals laid out in this EO (Executive Order 13423, 2007).

#### **5.10.4 State EMS initiatives**

A number of EMS initiatives are being carried out in several US states. Some focus on EMS use in public agencies, and others try to encourage EMS uptake by industry. The EPA launched its Sector Strategies Program in 2003, whereby it partners with states and certain trade associations to formulate EMS-based solutions to sector-specific issues. The program produced a number of case studies and sector-specific EMS guides for such industries as shipbuilding, agribusiness and metal casting. Each state has different programs and incentives. A summary of the state programs (under the EPA's *Action Plan for Promoting the use of Environmental Management Systems*) found that as of 2010, 27 states had programs in place to incentivize the use of EMS. The remaining 25 states and territories had either implemented a similar program in the past that was no longer active, or had yet to implement this type of program (US Army Environmental Command, 2010).

#### **5.10.5 Benefit Corporations**

Environmental and social improvements within a company can easily be discarded when sold or inherited, whether the company is private or public. Thirty states and District of Columbia have created a new legal class, the benefit corporation (or B-corp), that allows a company to write an environmental and/or social mission into its charter. A B-corp can legally set high environmental and social standards that can benefit the company in the long term but may reduce short-term earnings. In most regions minority stockholders can sue a company for investing in environmental and social performance at the short-term expense of the share price (Chouinard and Stanley, 2012). The Benefit Corporation model is spreading around the world, including to the UK and NZ.

#### **5.10.6 Corporate responsibility reporting in the USA**

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

In 2013 86% of companies surveyed (of 100 biggest companies by revenue) (KPMG, 2013a) produced CR reports, up from 83% in 2011. KPMG (2013a) considered the US to have a lower quality of CR reporting than the UK; the average quality score of US companies in the study was 54, compared to 76 in the UK (KPMG, 2013a). KPMG (2015) found that the countries with the highest rate of CR reporting (this excluded the USA) all have legislation requiring corporate responsibility reporting. Legislation in the US requiring non-financial disclosure does not directly require CR reporting in publicly traded companies, but includes climate change risk and CR performance within federal agencies:

- The US Securities & Exchange Commission (SEC) has climate change risk disclosure requirements (although this rule is widely flouted and not well enforced) (Gelles, 2016)
- Presidential Executive Order 13514 requires federal agencies to report on CR performance (KPMG, 2013a).
- The National Association of Insurance Commissioners now requires insurance companies disclose to regulators the financial risks they face from climate change, as well as actions the companies are taking to respond to those risks (Global Reporting Initiative, 2013).

One of the biggest recent developments in the USA helping to shift sustainability reporting into the US mainstream was Bloomberg (a computer system used to monitor and analyze real-time financial market data) in 2009 providing access to companies' sustainability data as part of its regular subscription. Each firm covered has more than 100 sustainability data points available. Firms are responding by providing more information; in the second half of 2010, analysts and investors viewed 29% more indicators (more than 50,000,000) than in the previous six months (Ernst and Young, 2013). Enabling investors to compare companies' environmental, social and governance performance will boost sustainable business practices and responsible investing.

US-based non-profits such as the Sustainability Accounting Standards Board and the Investor Network on Climate Risk, an affiliate of CERES, have been working with regulators to adopt mandatory standards by which publicly traded companies would have to disclose their environmental, social and governance (ESG) issues. ESG information about a company is now considered essential for investors to make a decision, and a uniform standard for ESG disclosure is needed. With Bloomberg now publishing corporate ESG data for over 5000 companies, this information is now becoming widely available, which will further change people's expectations of radical transparency (Kastiel, 2013).

## Chapter 6: Conclusion

The research has explored the development of environmental management systems (EMS) and corporate responsibility (CR) reporting in three countries: NZ, the UK and USA. Four research questions were addressed relating to why EMS were initially developed and how they then developed and diffused over time, how the current system of EMS and CR reporting compares in each study country, and how a sustainable business looks. This was done to meet the research aim stated in chapter 1.5:

*Explore the uptake of formal environmental management system (EMS) frameworks, the diffusion of ISO 14001 and the incidence of corporate responsibility reporting in NZ, the UK and the USA.*

Global attention has increasingly focused on environmental sustainability matters over the past 50 years; people's understanding has evolved into a better appreciation of the environment's highly complex interconnections and finite capacity for exploitation. As a result, business activities the world over are being closely scrutinized. Ignoring sustainability issues these days is potentially ruinous for a company: hiding transgressions, no matter how deep into the supply chain, is no longer an option because advances in technology enable fast access to and spread of information. This challenges traditional forms of authority and makes transparency in firms an essential management tool (United Nations Global Compact, 2013). Economic growth and true environmental sustainability are often seen as being at cross purposes, so EMS and CR reporting are important tools to support organizations in their efforts to become more environmentally and socially responsible. As more is learnt about the development and diffusion of EMS and CR reporting between and within countries, and how a sustainable business should look, the potential to improve these systems increases.

The main empirical findings are chapter specific. This section will synthesize the findings to answer the study's two research questions:

1. Why were EMS developed initially and how did they then develop over time, particularly in the three study countries NZ, UK and USA?
2. How does the current system of EMS, particularly ISO 14001 diffusion, compare in each study country?

3. How did CR reporting develop and what is its current status in each study country?

## **6.1 Findings**

While it is impossible to precisely compare EMS development and CR reporting in three such economically, geographically and politically different countries, observations and recommendations for NZ have been made in Table 1 below.

### **Q1: Why and how were EMS & CR reporting initiated and developed in NZ, UK and USA?**

#### ***Initiation of EMS***

A combination of events, including environmental accidents, increasing company liability, groundbreaking publications, the first international conferences on the environment and a growing awareness of increasing pollution lead to heightened public concern and awareness of environmental issues in the post-WWII to 1970s era. People increasingly called for environmental issues to be addressed, which ultimately lead to a tightening of environmental regulation and the first attempts by business to address these problems. Environmental management systems were initially developed by industry through voluntary codes of conduct, such as the Responsible Care program in the US chemical industry. The development of environmental auditing around the world was largely due to the influence of USA subsidiary companies operating abroad. As companies both in the US and Europe began to formalize their approaches to pollution prevention and take up voluntary environmental auditing practices, the need to standardize these procedures was recognized, which ultimately led to the creation of formal EMS standards.

#### ***Development and diffusion of EMS and CR reporting over time***

Chapter 3 discussed the growing awareness of environmental issues, from no perception at all to the first international environmental conference in 1972 and early tools to manage the world's growing environmental problems, such as the Polluter Pays Principle, which provided one of the first incentives for companies to strategically manage their environmental impacts. Chapter 4 addressed the evolution of new tools and theories developed to manage environmental problems, for instance concepts such as

industrial ecology and industrial metabolism were formulated to address issues of waste dilution and diversion, and environmental management models were developed to further understand and advance EMS. The Porter Hypothesis questioned the entrenched belief that environmental regulations reduced company profits. International environmental conferences, held more frequently and including increasing numbers of countries, further explored concepts of sustainable development, the threats from unchecked greenhouse gas emissions and promoted use of EMS. The research did not reveal a clear and consistent pattern of EMS development in each study country, but each country has been a leader and innovator at different stages, as follows.

**Q2:** What is the current status of EMS, ISO 14001 and corporate responsibility reporting in NZ, UK and USA?  
**Q3:** What strategies could NZ businesses use to improve their environmental performance taking guidance from the other two study countries?

| <b>Findings</b>  |  |   |  |
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| <b>Uptake of formal EMS frameworks</b>   |  |   |  |
| <b>NZ</b>  | <b>UK</b>  | <b>USA</b>  | <b>Recommendations for NZ</b>  |
| Education and voluntary initiatives have been emphasised over regulation and economic incentives to encourage private sector EMS uptake in NZ. EMS was encouraged in government departments through programmes such as Govt <sup>3</sup> and the NZ Waste Strategy in the early 2000s, although most programmes of this ilk were cut after the change of government in the late 2000s. The | A combination of early exposure to EMS standards (in the form of BS 7750), regulation, export market pressure and access to a range of EMS programmes catering to different types of businesses have encouraged EMS uptake in the UK. <i>Regulation/economic instruments</i><br>The Environmental Protection Act 1990 provides economic incentive for clean business | Voluntary approaches to encourage firms to manage environmental impacts are now prevalent in the US after a trend of deregulation. Corporate-federal government (e.g. USEPA) collaborations and best-practice guides are used. Such guides do not provide any form of certification or recognition of steps taken toward ISO 14001 certification. Examples of industry initiatives, in partnership with the | NZ has one of the lowest use of economic instruments to address environmental problems in the OECD; revenue from environmental-related taxes account for only 1.3% of GDP (OECD, 2017). Where EMS has been required and overseen, e.g. in government by the PCE or in private industry when required by a multinational company, EMS practices are adopted. Where there is no external pressure to |

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| <p>Parliamentary Commissioner for the Environment (PCE) reviews the EMS of the entire public sector and reports it to parliament, so the impetus for EMS use in the public sector is high.</p>   | <p>practices by making companies and individual directors deemed negligent financially responsible for environmental damage. This encourages EMS uptake to ensure compliance with integrated pollution control. Additionally, under the EU Integrated Pollution Prevention and Control directive, the UK Environment Agency charges lower fees for industrial sites of ISO 14001 certified firms.</p> | <p>EPA, are the National Biosolids Partnership and Responsible Care, which have broadened EMS use. Where environmental regulations have required businesses to pay for their own impacts, businesses have responded accordingly; where businesses do not pay for environmental impacts, the response to reduce is slower.</p> | <p>work under an EMS, as is the case with most SMEs, EMS practices are less prevalent.</p>   |
| <p><i>No regulation/economic instruments</i></p> <p>There is no regulation or economic incentive for EMS uptake in NZ. Instead, the government has paid significant attention to encouraging private sector EMS uptake through programmes such as CarbonZero and EnviroMark. NZ's smaller population has made it easier for government outreach to access a high proportion of businesses to</p> | <p><i>Range of EMS programmes available</i></p> <p>UK businesses have a number of EMS standard options catered to businesses of different sizes, including EMAS, ISO 14001, BS 8555 and the Green Dragon</p>  | <p><i>Regulation/economic instruments</i></p> <p>Both the Superfund Act (CERCLA) and the Toxics Release Inventory (TRI) are examples of economic instruments where the polluter pays, thereby increasing incentives to reduce environmental impacts. TRI incentivises firms to identify and</p>                               | <p>OECD (2007) recommended that economic instruments such as taxes, charges, and deposit-refund programmes be used more to cover the costs of environmental externalities, and OECD (2017) noted that economic growth in NZ is lower when accounting for pollution. In NZ GDP growth is based on natural resource use: it is still profitable to destroy the environment and costs to protect it here.</p> |
| <p>high proportion of businesses to</p>  | <p>8555 and the Green Dragon</p>  | <p>environmental impacts. TRI incentivises firms to identify and</p>  | <p>As shown by examples from the other study countries, economic</p>   |

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez

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| <p>promote EMS. Regardless, environmental sustainability is not high on the business agenda here. NZ's small population means there is less consumer pressure for sustainably produced goods and services; coupled with a lack of regulation and economic incentive (environmental externalities are paid for by the tax payer), there is low motivation for clean business practices.</p> <p>NZ exporters are becoming more aware that multinational corporations increasingly drive environmental standards along their supply chains and require suppliers to show formal environmental credentials.</p> | <p>Standard. Having more options makes EMS certification more accessible, have wider reach and become better known to businesses and their suppliers.</p> | <p>reduce their toxic discharges. Superfund specifies corporate financial responsibility for activities adversely affecting soil or groundwater. The economic risk to companies better manages the problem of hazardous waste-disposal sites; once the EPA began publishing clean-up costs for Superfund sites, many companies began including environmental disclosures in annual reports and developed EMS frameworks.</p> | <p>instruments can be an effective way to incentivise clean business practices; environmentally damaging activities are deterred because of the cost, while activities that mitigate environmental impacts are subsidised.</p> <p>As an export nation with a thriving tourism industry, NZ relies heavily on its 'clean green' image, but this image is at risk as we reach and exceed our environmental limits. As multinational companies increasingly carry out life cycle analysis, the environmental credentials of their suppliers will be more closely scrutinized, which may impact NZ's SMEs. NZ</p> |
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The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez



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|  |   |   |  | should separate its love of platitudes (“100% Pure”) from real and meaningful environmental outcomes. |
| <b>ISO 14001</b>   |   |   |  |   |
| <b>NZ</b>  | <b>UK</b>   | <b>USA</b>  | <b>Recommendations for NZ</b>  |   |
| There is considerable variation in NZ with ISO 14001 uptake but an upward trend is evident. NZ lags significantly behind the other two study countries in absolute ISO 14001 numbers, but upon comparing certification intensity, while lagging significantly behind the UK, NZ is higher than the USA. While NZ's ISO 14001 uptake has been slow and variable, the environmental requirements of export markets have stimulated a | ISO 14001 caught on rapidly in the UK due to extensive promotion by the British Standards Institute and because British businesses already had experience with EMS standards through BS 7750. Certifications have steadily increased and the UK now has a much higher intensity of certifications than both of the other study countries. Other reasons for the UK's higher | The US had a slow start to ISO 14001 mostly because of a lack of outreach and promotion when it was first released, leading to a number of misunderstandings about the standard throughout the country. Firms questioned the ability of the ISO 14001 standard to enable them to realise their long-term environmental goals (such as reduced costs and better access to international markets). Firms considered the ISO 14001 | Companies are more likely to adopt an EMS such as ISO 14001 when they are incentivized. Factors that boost ISO 14001 uptake within an individual organization include strong sustainability leadership, external pressure, company size, and the need to manage organizational risk and provide performance assurances for exports. Barriers to ISO 14001 uptake |   |

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez

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| <p>recent uptick in certifications.</p> <p>NZ's 94% micro-enterprises account for only 12% of the ISO 14001 certificates issued.</p> <p>Barriers to commitment are the high cost, lack of resources, complexity. NZ has few incentives for ISO 14001 uptake: regulators and procurers do not formally recognize EMS, and not many markets discriminate between suppliers based on environmental performance.</p> | <p>ISO 14001 adoption rate are export market pressure and economic incentive. British firms face pressure from export markets to certify: countries that export to destinations with high levels of ISO 14001 certifications have higher certifications themselves. Being ISO 14001 certified in Europe is likely to help a company win a public procurement contract. ISO 14001 has increasingly been integrated into the environmental regulatory landscape in England and Wales, for example under the EU Integrated Pollution Prevention and Control directive, firms certified to the ISO 14001 standard are charged lower fees for their industrial sites</p> | <p>standard lacked clarity. As a result, companies took a 'wait and see' approach when the standard was first released.</p> <p>Actual uptake intensity of ISO 14001 is lower in the US than the other study countries, particularly the UK, even though the adoption and proliferation of ISO 14001 is the most noticeable recent development in the use of EMS in the USA. Despite this, business-driven mandates and government encouragement have spurred a 49 percent increase in uptake between 2010 and 2014.</p> <p>This example of early misunderstanding and lack of promotion from environmental</p> | <p>within a company include lack of external pressure and lack of sustainability leadership from within. Barriers to uptake within SMEs are that they are less publicly visible than larger firms, they have fewer resources to devote to activities outside daily operations and marketing, and environmental management tools are often designed for larger firms so do not fit the issues facing smaller firms. Additionally, coordination on environmental improvements within an industry is more of a challenge for sectors dominated by SMEs compared to sectors made up of a small number of large firms.</p> <p>Factors that boost ISO 14001</p> |
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The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez

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|  | <p>The British example shows that supply chain pressures, economic incentives, and programmes to make ISO 14001 adoption more accessible (e.g. through a stepped programme such as BS 8555) have been successful in establishing a strong system of EMS here.</p> | <p>bodies shows how education and information could promote the standard in NZ. In the UK, the British Standards Institute's early promotion of ISO 14001 was one of the reasons for its quick uptake in that country.</p> | <p>uptake at the country level include domestic circulation of information and promotion of EMS, and export levels to the EU and Japan.</p> <p>Extra guidance, assistance schemes and subsidies provided by ISO have not resulted in increased uptake in micro-enterprises; this has brought into question the appropriateness or relevance of formal ISO 14001 certification for this sized business. If NZ's SMEs begin to feel pressure from export markets, ISO 14001 adoption rates may increase. If these businesses are not pressured as part of a supply chain, it is possible that ISO 14001 is not</p> |
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|   |  |   | relevant to these businesses and the focus and support should be for uptake of local programmes such as EnviroStep. However, all of NZ's export businesses should be aware that ISO 14001 is a necessary universal tool to remain relevant in today's global economy, which may incentivise higher uptake. |
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| <b>CR reporting</b>   |  |   |  |
| <b>NZ</b>   | <b>UK</b>  | <b>USA</b>  | <b>Recommendations for NZ</b>  |
| NZ is the only study country that does not mandate CR reporting; CR reporting is much lower here at 47% of NZ's top 100 companies based on revenue (KPMG, 2013b). The only regulation related to CR reporting here is | CR reporting rates in the UK are highest out of the three study countries at 91% of the UK's top 100 companies by revenue (KPMG, 2013a). The Companies Act (2006) requires large and medium sized companies to | Most US companies now carry out CR reporting, although the reporting is of a lower quality than the UK: 86% of US top 100 companies based on revenue in 2013 (KPMG, 2013a). | Each study country has different factors driving CR reporting practices. Countries with the highest rate of CR reporting have made it a legal requirement. NZ is falling behind the rest of the world because the government is  |

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez

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| <p>that companies included in NZ's emissions trading scheme must record carbon emissions and provide to government for emissions unit accounting, but this information does not have to be made publicly available.</p>  | <p>disclose CR information relevant to company performance in the annual report. Also requires all UK companies to produce a strategic report disclosing GHG emissions, human rights and diversity in the company.</p>  | <p>Legislation in the US requiring non-financial disclosure does not directly entail CR reporting in publicly traded companies, but includes climate change risk and CR performance within federal agencies.</p>  | <p>slow to embrace the global changes in this field.</p>   |
| <p>Despite the low level of formal reporting, many NZ companies do actually partake in corporate responsibility activities but do not include this information in annual financial or stand-alone CR reports, preferring to use other channels to publicise this information such as company websites and social media. One reason for this could be a lack of knowledge and consensus on what CR activity should be</p> | <p>The London Stock Exchange listed companies must report on GHG emissions, and the Carbon Reduction Commitment (2010) requires certain companies to measure and report their energy-use related emissions.</p> <p>The UK provides an example of the effectiveness of legally requiring CR reporting. The legal requirement ensures that companies actually report, and</p> | <p>One of the biggest recent developments helping to shift CR reporting into the US mainstream has been the financial software tool Bloomberg, which provides access to companies' sustainability data. The amount of sustainability information provided by companies is now snowballing: in the second half of 2010, analysts and investors viewed over 50,000,000 more indicators than in the previous six</p> | <p>While it has been found that voluntary disclosure produces better quality CR reports than those produced under legislative reactivity (see Section 5.5.2), initiatives such as the GRI and IIRC are increasingly guiding CR reporting around the world to produce uniform, high quality, integrated reports. In addition more companies are using a third party to independently audit their sustainability reports, which should lead to improved quality of reporting.</p> <p>Increasing global trade means that firms' activities are critically</p> |

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA

Lucy Martinez

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| <p>reported. This is where the need for guidance from NZ's SBC, the GRI and the IIRC comes into play.</p> | <p>report to a high standard.</p> | <p>months (Ernst and Young, 2013).</p> | <p>watched easier than ever before. The NZ government needs to form a legislative requirement for CR reporting. NZ firms should look to organizations such as the GRI, IIRC and NZ's Sustainable Business Council (SBC) for encouragement and guidance on CR reporting; SBC members must report their carbon footprint to the SBC within a year of joining, and must prepare a Triple Bottom Line report within three years.</p> |
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## 6.2 Implications

The study highlighted the worldwide increase in CR reporting. If this trend continues, it is likely that the rate and quality of CR reporting will continue to improve in all three study countries, particularly now that this is considered mainstream business practice worldwide. New Zealand, in particular, has room for improvement. Businesses are expected to be radically transparent nowadays: with increasing global trade, firms' activities are critically watched more easily than ever before. As a result, CR reporting is becoming a higher priority, particularly for multinationals.

The study also showed that global initiatives will increasingly guide and develop CR reporting around the world. For example the reporting guidelines of the Global Reporting Initiative (GRI) will make it more likely that companies in all three study countries will produce increasingly uniform reports. Initiatives such as the International Integrated Reporting Council (IIRC) will make it more likely that companies will carry out integrated reporting, since the IIRC is now collaborating with organizations such as the International Federation of Accountants and the International Accounting Standards Board.

The Patagonia Inc. example shows how companies could be increasingly expected to embed sustainability and EMS into core strategy, as customers and stakeholders become more discerning and demand more accountability from the companies they purchase from and work for.

## 6.3 Final note

It is clear that global voluntary initiatives, NGOs and some exceptional companies are contributing the most to sustainability leadership. Absolute leadership from companies and governments within the three countries is not yet strong enough to combat mounting environmental problems. Any organization can create an EMS, and although an important start, it does not necessarily tell us anything about the organization's actual sustainability. As long as politicians wait for companies to show the way, and companies wait for legislation from government, not enough will be done in good time. Governments can play an important part in encouraging sustainability practices in business, through financial incentive or legislation, and business has the potential to become a force for economic, environmental and social good.

## Appendix 1: Patagonia Inc.'s environmental initiatives

Patagonia Inc. has collaborated with a number of organizations over the years to develop initiatives to reduce the environmental impact of doing business. Initiatives include the following.

**Sustainable Apparel Coalition:** an innovation created by Patagonia Inc. and America's biggest retailer, Walmart, in 2009. Their mission was to gather together textile, apparel and footwear peers and competitors to develop a universal way to measure sustainability performance. The Coalition's vision is that no unnecessary environmental harm is produced by the textile, apparel and footwear industry, and that the industry positively impacts the people and communities associated with its activities (Sustainable Apparel Coalition, 2015).

**Responsible economy campaign:** this 2013 campaign stepped up Patagonia Inc.'s advocacy by aiming to shape policy and influence businesses as well as reaching consumers. The campaign examined how a future sustainable economy will look, including acknowledging growth with finite limits (Matthews, 2013).

**1% for the Planet:** an alliance of businesses committed to donating a portion of their proceeds to environmental organizations. The goal of the alliance is to empower everyone to drive major initiatives, including wildlife, food, water, climate, environmental education, environmental human health, and land stewardship (Matthews, 2013).

**Common Threads Initiative:** a partnership with Patagonia Inc. and its customers to buy and use clothes more sustainably, embracing the Reduce, Repair, Reuse, Recycle, Reimagine concept. Patagonia Inc. increased the quality of their products in the 1990s to make them last longer. The company ran a "Buy Less" campaign in 2011, urging its customers to ask themselves if they really needed to buy its products (which actually increased sales almost a third) (Stock, 2013). The company encourages its customers to sign a responsible product stewardship pledge. Patagonia provides a free or fair price repair service and advice to consumers on how to fix problems with their clothes to avoid them being thrown away, and customers are encouraged to sell unwanted Patagonia clothes through the Common Threads website or eBay. Worn out products can be returned to Patagonia to be recycled (Suazo *et al.*, 2012).

The development of environmental management systems and corporate responsibility reporting in NZ, UK and USA



**Conservation Alliance:** co-founded by Patagonia in 1989, encourages businesses in the outdoor industry to contribute financially to environmental organizations (Suazo *et al.*, 2012).

**Conservacion Patagonica:** promotes the creation of new national parks; an effort by Patagonia employees to create a national park in South America. Includes travel to the site for trail construction and restoration of grasslands (Suazo *et al.*, 2012).

**Patagonia Provisions:** Patagonia partners with First Nation fisher people in British Columbia to provide sustainable salmon products (Suazo *et al.*, 2012).

**\$20 million and Change:** \$20 million venture fund, established 2013. Patagonia looks for enterprises that invent and inspire environmental solutions, for example Bureo, a company that formed to find a solution to ocean plastic pollution by turning fishing nets into sunglasses and skateboards. Patagonia aims for 2 to 20 percent ownership, instead of taking board seats (Noblitt, 2015).

**Benefit Corporation status:** Traditional for-profit companies must serve the interests of shareholders above all other considerations. Benefit corporations allow companies to adopt policies that “create a material positive impact on society and the environment”. Chouinard wanted Patagonia’s commitment to the environment to continue, no matter how well or badly the business does in the future. In 2012 Chouinard was the first head of a company in California to file Benefit Corporation papers. B-Corp status protects a company from shareholder lawsuits that say environmental efforts decrease the company’s stock value (Martin, 2012).

### **Other initiatives**

Patagonia is involved in a number of other initiatives, from responsible water use to supply chain tracking. The company’s goal is to get other stakeholders involved in the environmental protection mission. These initiatives include:

- Patagonia Music Collective: a platform that enables artists to easily support environmental causes.
- The Footprint Chronicles: interactive website providing information on the environmental impact of some Patagonia products, through the supply chain from design to delivery.

- Voice Your Choice: consumers vote which environmental organizations Patagonia donates money to.
- Our Common Waters: environmental campaign 2011-2013, focusing on pollution, water scarcity, broken rivers and Patagonia's water use as a business.

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