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The Creation of Sustainable Development: What it Means to CFOs of New Zealand

A Thesis submitted in fulfillment of the requirements of the
Degree of Master of Management Studies
at the
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CHAPTER ONE

RESEARCH INTRODUCTION

1.1 Introduction

The world of business is increasingly being challenged by sustainability issues. Despite the benefits that accrue from business transactions such as technological and economic progress, business is facing increasing criticism for creating social and environmental problems. In the past, the full consequences of conducting business have not been fully reflected in the financial statements; moreover business has been able to measure their profit success by excluding any transactional costs from social and environmental aspects.

This introductory chapter is arranged as follows: the next section provides a brief introduction to the background of sustainability. This is followed by the purposes and the objectives of the research, after which a discussion on the research methodology is presented. An outline of the thesis is then presented. The final section of this chapter outlines the scope and limitations of this research project.

1.2 Background

Despite Government and media interest on sustainability issues, it is very tempting to oversimplify sustainability issues into debates about population, pollution and consumption (Hossay, 2006, p. 2). It is argued that despite the active role that accountants play in business, the limitations of the existing financial reporting frameworks for reporting environmental and social transactions is poorly understood, inadequately identified and not reported within a consistent framework if it is reported at all.

1.3 Research Purpose and Objectives

The purpose of this research project is to evaluate and better understand the CFO's role in sustainability reporting of New Zealand (NZ) publicly listed companies. To achieve this aim, the research has the following specific aims:

- To construct an instrument to measure the extent and degree of sustainability reporting undertaken in NZ publicly listed companies
- To examine and explore the reasons why CFO's involve (or exclude) themselves in sustainability reporting issues
- To indicate where CFOs believe the motivations for more sustainability reporting may come from.
- To examine how CFOs become informed about sustainability

1.4. Methodology and Method

This research aims to be exploratory and descriptive, in order to provide a picture of the sustainability reporting and the accountant's current role in sustainability reporting. The research methodology is mainly scientific methodology however there are elements of naturalist approach and subjectivity is also incorporated, especially during the data collection and assessment using the research instrument. Prudence was exercised during these stages, so as to ensure that maximum objectivity and research bias is reduced.

1.5. Outline of the Thesis

The thesis is presented in eight chapters as follows:

Chapter One: Introduction and Overview

Chapter Two: Sustainability – A vision of life

This chapter introduces the historical development of sustainability along a time-line. A review of seminal sustainability literature is conducted along with a focus on the international motivations for sustainability. It is from the review of the literature that the nature and the goals of sustainability are examined. This chapter concludes by determining on how stakeholders become informed about sustainability.

Chapter Three: The Creation of Sustainability: the Definitions and their Origins

This chapter presents an overview of the development and a summary of existing sustainability definitions. An examination of the foundation knowledge that informs the

definitions of sustainability is also reviewed. A review of the sustainability discourse is undertaken and threads of sustainability definitions are identified and examined.

Chapter Four: The Paradox of Sustainability and Accountancy

This chapter examines the interface between accountancy and sustainability. It presents the motivations for accountants to engage with sustainability and then reviews the responsibilities and jurisdictional issues sustainability presents to accountants. The chapter concludes with an examination of two accounting responses to sustainability; environmental accounting and sustainability reporting.

Chapter Five: Research Methodology and Method

This chapter discusses the methodological assumptions underlying this research and describes and justifies the research method used through out this research. The research aims to provide an understanding and insights of CFOs engage and learn about sustainability. A positivistic approach is undertaken for this research; the assumptions and the justifications of this research are found in this chapter.

Chapter Six: Development of the Research Instrument

This chapter describes the process of the development of the research instrument and a discussion on the relevant assumptions and criteria for the development of the research instrument. It ends with the final research instrument used in this research project.

Chapter Seven: Results and Discussion

Chapter Six presents a discussion on the results of the research. The results are presented as discussion on an item-by-item basis of the research instrument.

Chapter Eight: Summary, Conclusion and Future Research.

Chapter Seven presents as a review of this research. It also presents the limitations of this research as well as recommendations and directions for future research.

1.6 Scope and Limitations of this Thesis

1.6.1 Scope.

This research did not cover all CFOs as a whole. The scope of this study is limited to CFOs that worked in NZ publicly limited companies. The companies had to be listed on the NZ Stock Exchange. At the beginning of this thesis – there were 126 companies that were listed however of those only 88 companies were eligible; financial services were either contracted out, there was no CFO or the parent company abroad oversaw the financial operations of the NZ subsidiary.

1.6.2 Limitations of this Thesis

The limitations of this research hinged on several key items; the first was being able to get past the gatekeepers of the CFOs. Of the 88 that were eligible to participate only 66 were contactable (75%); from this number a further 3 companies de-listed and were liquidated (leaving 70% of the original list). A detailed discussion of the limitations of this thesis is discussed in the end of Chapter Eight.

Chapter Two

Sustainability: A Vision of Life

2.1 Introduction

The purpose of this section of the paper is to introduce the historical development of sustainability along a time-line. Sustainability is a remarkable term with a twentieth century construction yet historically there have been trepidation about issues such as deforestation (Oosthoek, 1998), water resources (Oosthoek, 1999), desertification (Lal, Hobbs, Uphoff & Hansen, 2004, pp. 61) and population pressures (Russell & Russell, 1999, pp. 12). The following chapter is arranged as follows:

2.2 Sustainability – the Introduction to the Beginnings

2.3 Limits to Growth

2.4 The Brundtland Report

2.5 Agenda 21

2.6 The Nature of Sustainability

2.7 Learning Sustainability

2.8 Conclusion

2.2 Sustainability - Introduction to the Beginnings

The relationship between humans and the planet had changed; everything from genes to forests has been commodified, sequestered into the marketplace so that multinational corporations, wealthy land owners and nation-states have entered into a resource grabbing frenzy (Rifkin, 1992, pp. 73-75). Translated into numbers – 12% of the world's population (USA and Northern Europe) account for more than 60% of the world's consumption (World Watch Institute, 2008). The losers of the resource grabbing frenzy are the millions of people across the globe trapped in poverty, desertification of millions of

acres of land, lost of fragile ecosystems along with fragile specie populations; the reality of the aggressive campaign for markets that focuses solely on private rewards is the public cost of the environmental disasters and humanitarian toll (Rifkin, 1992, pp. 95; Greve & Smith, 1992, pp.

The magnitude of some of the environmental disasters that have shook the planet have displaced traditional notions of security; environmental security is given serious attention as it has never been in the past (Ramphal, 1990, pp. 4; Rifkin, 1992, pp.13-15). Human-induced disasters – distinct from natural disasters – have occurred first and foremost because of human activity; whether the motivations were poor judgement, error or just plain ignorance (Gunn, 2003, pp. 5). However it is the succession of human-induced disasters that have occurred across the planet along with the growing populations of displaced and poverty-stricken humanity that has triggered many debates over environmental stress and social justice, along with aroused emotional anxieties and fears for the health of the planet (Ramphal, 1990, pp. 10). Common to the all debates were topics such as ‘quality of life’, ‘economic security’, ‘social justice’ and ‘protection of the environment’ (Blutstein, 2002).

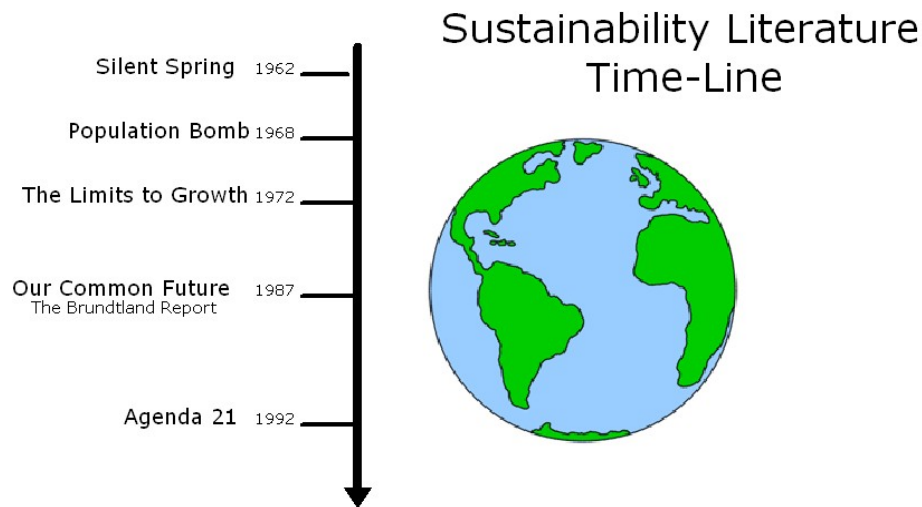
There has been a string of publications that begun in the 1960’s that attempted to understand and define the interconnections between humans, the environment and the other species (both plant and animals) on the planet. They have all been considered milestone publications and all offered up as persuasive and influential academic sources that have demanded authorities give consideration and attention to sustainability issues.

Carson’s (1962) book *Silent Spring* was one such landmark publication which spoke of the connections between man’s activity, the environment and the well-being of society (Krebs, Wilson, Bradbury & Siriwardena, 1999). This publication tempered the role of belligerent human activity, synthetic chemicals and the subsequent collateral damage. Moreover it provided pivotal insights of the contemporaneous and lagged effects of human activity on specie biodiversity, the social construction of acceptable business practises and environment.

A later publication by Ehrlich (1968) called *Population Bomb* was also a landmark publication; it took up Malthusian theme of overpopulation. Although Ehrlich's primary assumptions of population growth were fundamentally flawed – the link between population, resource degradation and environmental stress was strongly forged.

These publications effectively removed the sustainability discussion from well-educated conjecture to a serious attempt to bridge real issues; from problem recognition to international collaboration for a sustainability practical framework (Nattrass & Altomare, 2002, pp. 8; Blutstein, 2002). They were certainly the catalysts of non-governmental organisations (NGOs) that took up the gauntlet of sustainability; NGOs have become powerful high profile challengers or partners of sustainability (Stefanini, 1995).

“Sustainability” has become the template which governments, non-governmental organizations (NGO's), educational institutions and business organisations use to model their institutional programs upon (Blutstein, 2002). Much of the recent discussion and motivations for sustainability has its roots in landmark documents such as *The Limits to Growth* (Meadows, Meadows, Randers & Behrens, 1972), *Our Common Future: The Brundtland Report* (United Nations World Commission on Environment and Development, 1987) and *Agenda 21* (United Nations Earth Summit, 1992). A central theme runs through these documents; the existence of interdependence and interrelationship between human activity and the rest of the natural world. Increasing growth of human activity has fundamentally changed the earth's ecological balance; moving people's awareness beyond the nation-state mindset to establish a global perspective of the earth's systems.

Figure 1.

2.3 The Limits to Growth

Arguably *Limits to Growth* cast the sustainability die onto the world stage – giving it a global frame. Meadows, et. al. (1972) described what appeared to be disparate components of the problems afflicting humanity as the “world problematique”, for their complex computing model established that all societies are afflicted to some degree by social, economic and political elements which impact on the planet’s ecological systems (1972, pp. 10). The portrait Meadows, et. al. (1972) drew assumed that the increasing growth of human activity was essentially harmful to both humanity and the planet. However their model was not confined to the past; what followed was an extrapolation of the computer model into the future where it identified that there was limits to growth (socially, economically and politically) before the earth’s ecological systems would collapse completely.

Meadows, et. al. (1972) promulgated that there could only be two resultant scenarios; a reduction of the global population alongside a reduction in industrial action which would lead to a sustainable future or an overshoot of resources which would lead to the worsening environmental outcome and eventual decline of humanity (Ford, 2007). In 1972, Meadows, et. al. believed that the overshoot scenario would prevail (1972, pp. 183).

Limits to Growth (Meadows, et. al. 1972) was not without critics; most of whom attempted to stigmatise the researchers as Malthusians¹ (Wallich, 1972; Simmons, 2000). Despite the considerable debate about the Limits to Growth scenarios and the passing of thirty years, the first publication of the Limits to Growth (Meadows, et. al., 1972) continues to sound a powerful proclamation (Anonymous, 2000) and arguably manifests as the key antecedent to the discourse of sustainability.

The United Nations (UN) has taken up the mantle of sustainability by expanding the UN Charter to reflect the changing values of the world; it now actively incorporates the social, cultural, economic and humanitarian problems (Union Aid Abroad, 2005). When the UN organised the Rio Earth Summit (hereafter Rio) by bringing together more than 170 countries to discuss sustainability issues afflicting humanity, it created a crucial turning point in the sustainability discourse. Firstly Rio integrated economic, social and environmental issues together so as to give them all equal weighting and secondly it went beyond the discourse of the nation-state perspective to a global perspective (United Nations, 1997). This was possibly the first formal recognition that human activity had dire consequences for present and future humanity, for other species that share the planet and the ecological and environmental health of the planet. Moreover Rio acknowledged the global nature of many environmental problems and the existence economic interdependence between the nation-states. The UN provided a basis for some global unity on sustainability and set a benchmark of understanding for sustainability when it published the Brundtland Report.

2.4. The Brundtland Report

The Brundtland Report was the result of a collaborative undertaking between policy-makers, scientists, computer modelling analysts and academics; years in the making the Brundtland Report crystallised the notion of sustainable development (SD) (Sachs, 1999). The Brundtland Report defines sustainability as:

¹ Defined as a return to subsistence living when natural resources are outstripped by population growth (Laudry, 2001).

“Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

(World Commission for Environment and Development, 1987, pp. 8).

Sachs (1999) described the concept of sustainability as having a “comet-like rise” because it promises both ecological sustainability and economic justice at a global level. The concept of sustainability speaks to the voices of the North which champion environmental protection while empowering voices of the South² which call for economic justice (McCormack, 1989). The Brundtland Report was able to reach a consensus between the North and the South only by sacrificing the clarity of the concept of sustainability (Sachs, 1999, pp. 81).

The definition of sustainable development provided by the Brundtland Report renders the interpretation of sustainability subjective, for it does not specify whose needs nor how; as a result this has led to the development of wide definitions of sustainability which are inherently different (Raar, 2007). Yet clearly the Brundtland Report bases its concept of sustainability by implying that there are limits to growth; limits to environmental resources and the limits to which the planet’s ecological systems can absorb human activity (reiterating the findings of Meadow et. al. (1972)). Furthermore the Brundtland Report identifies the root cause of these limits can be found in technological inadequacies and inequitable societal practices and therefore any discussion of sustainability must include,

“a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs”

(World Commission for Environment and Development, 1987, pp. 9)

² The North implies the developed countries while the South implies the developing countries

It is from this perspective that the impact of the Brundtland Report becomes evident. What follows is an extensive treatise that explores and idealises equity; intra-national (indigenous peoples), intergenerational, national and international, founded upon sustainable environmental and social practices. It challenges political leaders and the public at large to change and addresses these changes by presenting a series of institutional reforms that addresses world poverty and environmental degradation (World Commission for Environment and Development, 1987, pp. 11-21).

The Brundtland Report presents sustainability as the pursuit of an ideal; it is not enough to simply advocate sustainability. From the viewpoint of the Brundtland Report sustainability therefore presents as a constantly evolving concept that is intimately linked to laws and customary practices; this could go partly the way to explain the diversity of contested sustainability definitions.

The UN, using the Brundtland Report as a springboard, has endorsed the precautionary principle in relation to any decision-making involving societies and the environment (O’Riordan & Cameron, 1995). When the precautionary principle is applied; it formally recognises that there are and has been unforeseen consequences from current and past human activities and emphasises that these consequences can potentially be irreversible.

2.5 Agenda 21

What followed from Rio is Agenda 21; a document that provided the members of Rio with integrated policy-relevant advice and source material³. It is a principle based document (therefore not legally binding on the members of Rio) that firstly identified the major stakeholders in sustainability and then secondly attempts to determine the roles they have in sustainability by offering solutions (United Nations, 1992).

³ This was a result of integrating science, social science, earth science, governmental statistics from IPCC, OECD material and this list is not exhaustive

Agenda 21 crystallises a defining moment in humanity's history by taking the global challenge of sustainability and linking it to action at the local district locale – the 21 in the title refers to the 21st century. The principles of Agenda 21 inform the local authorities as to how sustainability can be implemented at their level by presenting strategies. Eco-efficient management and new modes of governance use the consultation process to determine the priorities and implementation of sustainable goals (Unsworth, 2004). Rogers (1997) argues that Local Agenda 21 brings global sustainability within the understanding of the individual citizen; it presents the local authorities with a tools to administer sustainable development (Rogers, 1997, pp. 32)

Agenda 21 was not without critics; many of the arguments claimed that Agenda 21 favoured a communitarian plan that required total re-organisation of political, social and economic systems that was beyond the understanding of the ordinary individual (Raapana, 2006). However Rio brought SD to a global awareness that was unprecedented in history. Agenda 21 crystallised SD. This resulted in the growing dialogue and debate of SD, positioning SD at both the macro and micro levels of society (Vidal, 1992).

2.6. The Nature of Sustainability: identifying the Goals

To understand the nature and goals of sustainability is a deceptively complicated task. As demonstrated in the previous sections of this chapter, much of the literature is focused on the pathological manifestation of sustainability; much attention has been dedicated to the evils of (un)sustainability. There are many journals dedicated to this end (e.g. *Journal of Sustainability*; *International Journal of Sustainability in Higher Education*; *Sustainability: Science, Practice, and Policy*; *Journal of Sustainability Science and Management*). This literature strikes a chord in stakeholders across the globe if only because it taps into the fundamental challenges faced by them all; it also reflects the proximity of stakeholders to sustainability concerns. However there is insufficient literature

that emphasises the goals of sustainability; a regulatory framework that respects cultural pluralism yet based on an area of consensus.

The difference between goals, objectives and targets needs to be clarified if only because there is much in the literature that speaks of the objectives and targets of sustainability. When sustainability is coupled together with the word target – this speaks of the dynamics of performance and progress (often called a ‘moving target’) and the commentator will often try to forge a link between sustainability and some form of indicator (see Dahl, 1995 for an example of this). When sustainability is coupled together with the word objective – it speaks of a measurable condition that an operational programme will attain such as improved environmental and cost outcomes, and the promotion of greater efficiencies (see University of Stirling, 2007 for an example of this).

The setting of objectives and targets is an interesting aspect of sustainability – if only because it can be seen from both the narrow and wide view. From the narrow view Pearson (1979, pp. 13-14) asserts the participation in the setting of objectives and targets by stakeholders is not so much about giving positive direction to sustainability (whilst this is definitely advantageous) – it is more about protection of their own freedoms and trying to deter any threats to their freedoms. Sustainability demands that the corporate world of business is increasingly finding themselves in some form of dialogue with other sustainability stakeholders; these relationships are often difficult to manage if only because their approaches to sustainability are distinctly different (Baue, 2002). Setting objectives and targets is an attempt by some stakeholders (predominantly the business world) to set boundaries on these relationships as well as forming a communication bridge (Araujo, Dubois & Gadde, 2003). The stakeholder in determining an objective and target is able to define the community, determine the benefits to that community and express them in whatever currency they chose.

From a broader viewpoint setting objectives and targets is all about measurement; the normative view of the corporate world is profit and loss and therefore a qualitative management conceptual framework is seen as an effective strategy to inform the sustainability discourse (Institute for Sustainable Development, 2009). Corporations can

have relatively simple objectives and targets, such as the minimising of waste and recycling (see The Warehouse, 2009 for an example of this) or more complex, harder objectives and targets such as sourcing fair trade products (see The Body Shop, 2009 for an example of this). Comparing the Warehouse (2009) to the Body Shop (2009); the Body Shop's objective needs some further clarification; some definition of what exactly fair trade is, who is defining and for what purpose. Criticism that much of the earlier objective and target setting was rarely if ever externally evaluated has led to industry standards and global standards such as International Standardisation Organisation (ISO, 2009).

When sustainability is coupled to the word goal – the language becomes largely ambiguous; the goal is often 'sustainability' itself (Jamieson, 1998; Hilty, 2001; Robert, Basile, Broman et. al., 2004). Instead of identified goals, what is offered are broad, qualitative statements that have broad social and political appeal – few if any would advocate social injustices or supporting unsustainable practices (Parris & Kates, 2003; Walker, 2006). Sustainability from this viewpoint is sufficiently vague so as to not touch on fundamental values and principles (which are often themselves, figures of debate) (Cohen, 2002). Whether constructed intentionally or not, the vagueness of the publicised goals of sustainability from this viewpoint can be exploited and abused as organisational values and promotional gimmicks; sustainability goals are 'adopted' without making any changes to the organisation (Cohen, 2002, Walker, 2006)

Moreover academics are largely divided as to whether sustainability as a goal is appropriate (Levy, 1993; Solow, 1993, Pitcher & Pauly, 1998, pp. 312; Marcuse, 1998; Phillis & Andriantiatsaholiniaina, 2001; Chatterjee, 2005). The essence of this argument lays in the fact that the lexical utterances of sustainability are really just trains of thoughts which are directed towards a particular encyclopaedic knowledge; sustainability from this viewpoint is a tool not a goal (adapted from Zinken, 2004).

Moreover there is much literature that does not see sustainability as a goal in itself – but rather a journey or a dynamic process (Becker and Jahn, 1999, pp. 26; Alley & Leake, 2005; Walker, 2006). This focus is largely supported by big industry and business; Milne, Kearns & Walton (2003) argue that this focus creates strategic ambiguity to accomplish

unnamed goals of sustainability (pp. 8). The quality, depth and productivity of the sustainability journey can be measured in incremental improvements while business-as-usual continues.

On critical examination however the relationship between sustainability and journey is largely problematic; Cheney, Nheu & Vecellio (2004) declare that it makes sustainability more acceptable to business because it does not constrain business growth (pp.227). It could be argued that the proponents that take the *sustainability journey* are deliberately taking up a marketing strategy and positioning themselves to gain a competitive advantage (Vagasi, 2004). Literature is clear that businesses that have overtly adopted or linked themselves in some way to sustainability are viewed in a better light by their consumers and communities (Thierstein & Walser, 1996; Vagasi, 2004).

Before any stakeholder can embark on an effective sustainability programme, the goals or outcomes of the programme need to be determined; someone has to determine what sustainability has to accomplish. Rossi, Szejnwald Brown & Baas (2000) determined that the goals of sustainability are determined from the context of the stakeholder; each offering widely conflicting conceptions as to who should be leading and setting the agenda for sustainability. Furthermore Rossi, Szejnwald Brown & Baas (2000, pp. 274) determined that the stakeholder's interests and goals of sustainability were fundamentally divergent so that structural barriers discouraged collaboration between the stakeholders. What is evident is that too narrow a focus or the wrong choice of measures distorts the priorities of sustainability.

To understand the nature of sustainability, it is important to understand the conflict and resistance that is inherent in any discussion of sustainability; sustainability has become the object of public debate across the globe not only in recent times – but in a historical sense as well⁴. The debates themselves range from a more deep and meaningful fundamental life protection and preservation viewpoint to a shallower, more restricted,

⁴ This is demonstrated by Aristotle spoke of resource shortages Before Common Era; Malthus spoke of the population growth problems in the 18th Century

institutional and/or self-interest viewpoint (adapted from Evans, 2002, pp. 10-12; Sachs, 2008). Often the important aspects such as what exactly sustainability is expected to achieve is missing from these debates; there is little in the literature or the debates that focuses on advancing some form of societal goal end-point for sustainability. Instead the discourse is caught in a web of consumption rights, ecological recycling imperatives, human rights, intergenerational equity and social equity; all fundamentally different ways of seeing sustainability (Cheney, Nheu & Vecellio, 2004). The sustainability discourse is constrained to defining relationships and who has the power in these relationships (on a local, national and international level) because this is much easier course to navigate.

Furthermore the sustainability debates are more advanced (and therefore more diverse) in the more industrial developed nations of the North than in lesser developed nations of the South (World Commission on Environment and Development, 1987, pp. 64). This is largely due to the economic re-orientation of government policies in the less developed nations of the South on export production to improve their markets and therefore reduce the poverty (Therien, 1999). While a reduction in poverty is within the realm of sustainability, the sustainability debates has often pitted the Northern countries against the Southern countries; the political, economic and legal weaknesses of the Southern countries effectively making them poor cousins and often leave them straight-jacketed by any international sustainability policy (McKelvey, 1959; Anand, 2004, pp. 2). Any sustainability debate gets hijacked by the person or organisation who grabs the greatest media attention and this is invariably not the lesser developed countries (Weaver, 2006; Sustainable Europe Research Institute, 2006).

It is much easier to pose problems, criticise any alternatives that are offered than it is to tender constructive and practicable solutions to what has arguably become an international focus of apprehension. The task of defining the positive essential features of the nature of sustainability has been largely ignored; if only because no one is really sure what goals are being pursued (Walker, 2006). As a result, the discourse of sustainability as a patchwork of rights and obligations does not facilitate a congruent authoritative discourse, even from the pluralistic viewpoint. This legacy poses difficulties for the development and

identification of the goals of sustainability; any proposed agreed endpoint also becomes subject to debate. There is a significant failure of interest in differentiating, scrutinising and articulating the goals of sustainability: instead what has evolved is a relentless discussion on the rationale of adapting sustainability and the feasibility of such adaptation (even though no one is really sure what sustainability is).

2.7 Learning Sustainability

Sustainability establishes if nothing else that the planet is not so much a biologically or ecologically natural concept but instead a complex web of cultural, scientific, economic, political, social and even at the extremes technological discourses (and therefore debates). A narrative abyss defining exactly what the goals of sustainability are represents an epistemic uncertainty; that a contiguous relationship evolves between the generation of knowledge and sustainability in the minds of the stakeholders.

From this viewpoint sustainability becomes both a cognitive process and linguistic expression; in trying to understand the pathological manifestation of sustainability, stakeholders focus on different realities (adapted from Jung, 1921). What cognitive thinking process people use when they think about sustainability determines how sustainability is conceptualised in their minds; it also establishes how stakeholders orientate themselves in relation to sustainability. It codes the stakeholder's relationship to their surrounds (environment) in terms of good (helpful, rewarding) or bad (harmful, threatening) at any given instance in time (adopted from Barrett, 2006).

The cognitive referents for sustainability become undoubtedly complex when viewed through the eye-glass of the stakeholder; the body of encyclopaedic knowledge accessed by the stakeholder provides meaning for sustainability (at that given time). There is scant literature that looks at how stakeholders 'learn' about sustainability or how stakeholders process and prioritise sustainability information; there is none that look at cognitive referents of sustainability. Stakeholders are being asked to process and translate complex and sometimes vague, scientific, socio-economic, environmental, political and often highly

technical information. Ultimately how stakeholders understand the concept of sustainability when confronted with voluminous, often contradictory material from multiple policy agendas and other influential stakeholders, is defined quintessentially by a mixture of *laissez-faire*, do-it-yourself learning and institutional education. The presumption is that the stakeholders are autonomous and will actively engage in sustainability learning; any speak of the interconnectedness of groups of stakeholders serves to complicate the learning of sustainability even further.

Even less if any literature looks at the probes that cue stakeholders to seek further information about sustainability. Common sense demands that the motivations to learn about sustainability have to be interest-defined and value-related. However it is questioned whether sustainability can be learned as a uni-dimensional principle; that stretching cognitive processes to include multi-dimensional principles is probably not useful for sustainability learning and that instead stakeholders cluster bite-sized, small, related topical areas of sustainability learning together (adapted from Tourangeau & Rasinski, 1988).

Sustainability learning and processing easily falls within the psychological types of perceiving and judging defined by Jung (1921)⁵. Jung (1921) determined that information processing is limited by an individual's cognitive process psychologically; of particular interest is the perception and judgement. It is important to note that while some folk will prefer one type of cognitive function over the other – these cognitive functions are not mutually exclusive – most people will switch between the perceptive and judgemental cognitive functions quite readily (adopted from Jung, 1921).

On one level stakeholders will hold a perception and an awareness of sustainability whilst on alternative level stakeholders will organise, evaluate sustainability to determine some form of conclusion. Through the perceptive eye-glass stakeholders determine

⁵ Jung (1921) determined that there in fact 16 psychological types; the main classification division is extroverted vs. introverted (directed at the way a person thinks) - these are then further divided into their own information pathways (thinking, sensing, feeling and intuitive) and information processing (perceiving and judging).

sustainability through personal experience (of what is), recall past experience (of what was once), and try to link the two experiences in an attempt to gain a symbolic understanding of what sustainability is and some foreseeability (adapted from Jung, 1921). This is typified by the Pacific island people of the Marshall Islands; the rising ocean waters is rapidly encroaching upon the Islands viable land masses; the fresh drinking water reservoirs are constantly under threat from the sea water (*of what is*). The elders of the tribes remember the ancestors who came before them some 2,500 years and where the tidal water use to be (*of what was once*). There is no other choice but for the tribal people of the Marshall Islands to inevitably leave their home lands and move to larger islands (*attempting to link the experiences to gain some form of foreseeability*) (The Star Newspaper, 2007).

On the other hand, through the judging eye-glass stakeholders attempt to apply logic, structure and order to sustainability (*organising the information so it is easily followed*); by analysis, attempts to construct some form of framework with parameters is useful so as to 'monitor' sustainability (*consideration and response to the information*) (adapted from Jung, 1921). This is best typified by the international debate over whaling; the whales exist as commercial resource to be exploited by the commercial whaling industry (killing the whales) and tourist industry (whale watching) as an endangered species (*organising the information so that it is easily followed*). The International Whaling Commission determines a quota of whales to be harvested (International Whaling Commission, 2009); the Department of Conservation restricts the number of whale watching permits issued to tourist operators (Department of Conservation, 2008) (*consideration and response to the information*).

The implications from looking at of sustainability from the cognitive processing dimension are that it takes sustainability beyond the prevailing pathological manifestations focus. The mental mapping of how people think, reason and create sustainability in everyday life reflects important cognitive referents in the sense-making process of sustainability (adopted from Berens & Nardi, 2004, pp. 103-107). It appears that the cognitive referents are determined by the stakeholders themselves; where they find go to learn about sustainability. The role of cognitive referents in the learning and understanding

of sustainability reveals that a cognitive struggle is linked to conflicting cognitive referents of sustainability; social equity and social justice do not fall within the usual gambit of economic efficiency and production. Sustainability decision-making even though focused on the positive function of sustainability becomes particularly challenging with real-life impact consequences and therefore constrains stakeholders' decision-making. While cognitive referents do much to serve the stakeholders there is much uncertainty as to what the positive function of sustainability is therefore the normative understanding of sustainability turns on what the stakeholder defines sustainability to be.

2.8 Conclusion

This chapter mapped the earlier sustainability literature and provided a foundation of understanding as to how the sustainability discourse has developed. The controversy surrounding the earlier works of Carson and Ehrlich were largely contentious publications however these showed that being economically better off does not always equate with ecological and social well-being of humans, plants, animals nor planet. The publication 'Limits to Growth' is possibly the first scientific collaboration on sustainability; a first step attempt to interpret and understand the large systems of the planet along with the impact of human populations. This work canvassed the planet as a closed system rather than from a national standpoint – the authors the protagonists of evidence-based and computer modelling analysis. The core message of this work was readily understood by both the scientific and lay people – it crossed national, cultural and language boundaries. As each following edition is released – it continues to be a foundational publication.

The Brundtland Report continues to be a durable publication – the creators of 'sustainable development'. This publication established that there had to be a commitment from everyone – that sustainability is a partnership. The definition of sustainable development is widely quoted however it is also largely criticised for be vague and ambiguous – instead it is a generalisation. Agenda 21 is supposed to be the actionable

aspect of the Brundtland Report and provide mechanisms to communities so that they can achieve sustainability.

However this chapter also establishes that stakeholders are not sure what the nature and goals of sustainability are; much of the literature is focused on (un)sustainability. There is no agreed regulatory framework that integrates cultural pluralism; instead there is collection of stakeholders applying a raft of management tools. There is no congruent authoritative discourse to draw from. The stakeholders are attempting to define the goals of sustainability for themselves – a relentless debate over rights and obligations is the result.

Finally there is a gap in the literature as to how stakeholders are ‘learning’ sustainability. In applying Jung’s (1921) theory of perceptive and judgemental decision-making, sustainable information is often complex, difficult, voluminous, vague, socio-economic, scientific, environmental, political and technical; stakeholders are determining cognitive referents for themselves. Common sense demands that sustainability learning has to be a combination of laissez-faire, do-it-yourself learning and institutional education; bite-size clusters of topical areas. Any functioning (positive or negative) of sustainability for the stakeholder, turns on what the stakeholder defines sustainability to be.

Word Count: 5111

Chapter Three

The Creation of Sustainability; the Definitions and their Origins

3.1 Introduction

The purpose of this section of the paper is to explore and analyse the various ways that the concept of sustainability is used; sustainability is a subtle yet complex concept. The myriad of sustainability definitions weave together threads of fact and theory along with concepts of justifications. Some have historical primacy while others hold intuitive moral appeal. By unravelling the threads of sustainability definitions, this chapter shows how competition and engagement among the stakeholders of sustainability determines who gains prestige, legitimacy and influence in shaping the creation of sustainability. This chapter is organised as follows.

3.2 Sustainability: the Language

3.3 Sustainability: Evolutionary Process or a State of Well-being?

3.4 Sustainability: the Foundations of Knowledge

3.5 The Stakeholders of Sustainability

3.6 What is Sustainability?

3.6.1. Scientific Thread of Sustainability

3.6.2. Political Dimension of Sustainability

3.6.3. Economic Thread of Sustainability

3.6.4. The Indigenous People Thread of Sustainability

3.8 Conclusion

3.2. Sustainability: the Language

Without doubt when the Brundtland Report released its definition of ‘sustainable development’, a modern crusade was born. This definition is often the starting point of many academic disciplines.

However there are multiple tiers of different meanings and usages that are linked to the term sustainability; significantly the utility of the term ‘sustainability’ seems illimitable. The layers of meaning and usage of sustainability have specific but often unrecognised linkages; the concept of sustainability and its evolving use is broadly useful. Its array of

“Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

(World Commission for Environment and Development, 1987, pp. 8).

definitions in all its different applications are used within the domains of science, politics, business, law, economics and in general communications with the public at large (adopted from Pickett & Cadenasso, 2002). In the case of the word *sustainability*, not only is there no agreed meaning, there also seems to be a resistance to any attempt to determine one.

It is the existence of the pluralism and interdisciplinary conditions of sustainability that makes it clear that there is not one single definition or perspective that accurately describes sustainability in all its contexts or situations in which it is used. Sustainability can have different definitions depending on which user and in what context it is being used. As a result a great number of sustainability meanings and interpretations exist, and furthermore it is not uncommon to find that scientific, political and symbolic interpretations of sustainability are being used interchangeably within some disciplines. It is from this perspective that the knowledge and the value-laden foundations of sustainability are rendered variable and often questionable.

3.3 Sustainability: Evolutionary Process or a State of Well-being?

Sustainability is a term that evokes highly charged reactions across intellectual and academic disciplines; it presents as an issue in anthropology, geography, education, science, tourism, accounting and economics to mention only a few. Furthermore a heterogeneous

collection of commentators and analysts have also seized upon the term as well (for contrast see Central European University, Budapest (2008) and Slinger (2008)).

‘Sustain’, ‘sustainability’, ‘sustainable development’, and ‘sustainable’ are all terms that are rarely defined, are problematically set up as a condition to attain, soberly measured or alternatively promoted as a celebration. These terms are equally set up as conditions that can be criticised, dismissed or rejected. Sustainability is a highly loaded term, so much so, that few if any disciplines can avoid having a view; some have committed ‘for’, others ‘against’ whilst the remainder are simply just sitting on the fence between.

Contemporary social, cultural and political actors have invoked the concept of sustainability to describe the development in a number of areas, including technology, industry, social policy, health, culture, urban planning, resource management, to name but a few. Furthermore these same actors have used and generated a proliferation of different aspects of sustainability in such a persuasive manner so that the term sustainability has surpassed terms like ‘eco-development’ and ‘liveable world” (Lele, 2000, pp. 229).

If sustainability exists as an ‘evolutionary process’ – each definition should be more complex than the last; driven by the revelation of knowledge, sustainability in response becomes more sophisticated over time. Each definition is related in some way to the others, analogous to family characteristics – even if a past definition is now defunct. Like a tree of life, the cumulative changes in knowledge that have occurred over time often show that definitions have been recombined or manipulated, branching out to take on their own significance and meaning in their own context. The more branches the ‘sustainability tree’ possesses establishes the existence of the various distinct expressions of sustainability – yet also establishes that branches also shared a common definition in its past evolutionary history. From this worldview – the definition of sustainability is constantly verified; old knowledge is reviewed and is adjusted as new knowledge becomes available.

If on the other hand, sustainability exists as state of ‘well-being’ then the different meanings of sustainability could actually be threads of sustainability. The definitions of sustainability from this viewpoint are more likely to be contentious; the ‘well-being’ focus is on good health and good conditions for physical life. Controversy about the normative

meanings of these terms and as to whom these terms apply abounds; apart from humans, these terms could be equally applied to the planet, the inhabitant species and the environment. Determining the thresholds and limits to 'well-being' alongside who determines the thresholds and limits further complicates sustainability as a state of 'well-being'.

Is "well-being" restricted to the health and conditions for man alone or is "well-being" extended to include the 'others' already mentioned? If the 'well-being' definitions of sustainability are construed to meeting the core needs of humans, then normative definitions from this viewpoint are tendered with notions of security of individual/community health together with financial security; the planet is regarded as a resource to further this end. If however 'well-being' definitions of sustainability are construed to preserving and protecting the environment as well as biodiversity of other species (both plant and animal) then the normative definitions of sustainability from this viewpoint are tendered with notions of global environmental stability, ecological considerations and security of ecosystems. Arguably the definitions from this viewpoint are criterial rather than definitional; finding an adequate definition of sustainability is problematic if only because the different stakeholders will set up rival criteria's from which they determine their ideal of sustainability.

Which ever model sustainability takes – a common complicating factor to both models is the link between sustainability and justification; each definition of sustainability is often evaluated by the appeal to the role it will play by each stakeholder. As the warranted justifications of a stakeholder's actions increase – each stakeholder has better reason to believe that their definition of sustainability is the correct version; the downside is that the demarcation between justification and definition become blurred (adapted from McGrew, 2002). It is from this viewpoint that the definitions of sustainability become divergent; reiterating the resistance to determine one reconciled definition of sustainability.

3.4 Sustainability: the foundations of knowledge

In order to construct a metaphysical definition of sustainability that embraces the wide diversified applications of its usage; a foundation of knowledge that determines the essence or nature of sustainability must be identified. In defining the ontological knowledge of sustainability – the theory of sustainability determines the fundamental principles of its

existence and its reality (Ross, 2007, pp. 6). Furthermore as the broad concepts that determine foundational knowledge of sustainability are established; validity is also established. General principles that constitute the objective reality of sustainability are laid down so that it can be recognised and attributes can be ascertained (Trochim, 2006).

However sustainability as a science founders as there is no material formal object¹ so while programs to foster sustainability have mushroomed; any foundational knowledge that identifies what factors ensure sustainability success and why, remains largely unidentified. As there is no system of knowledge that exemplifies the rules of sustainability therefore it is difficult to critically assess the rationale, methods and the goals of sustainability policies. The connection between the philosophy and the mechanics of sustainability remains elusive. As there is no material formal object, it becomes inherently difficult to set out sustainability principles in clear, generalised terms; this speaks of sustainability as a governing standard of rules. A sustainability orthodoxy that promulgates a standard of rules that holds sustainability as a good in itself; for it captures and encourages a just society on a global scale.

Sustainability orthodoxy would demand that sustainability governing standards be clear, coherent and sufficiently stable to allow people to be guided by their knowledge of the content of the rules. Moreover that any decision-makers making decrees and orders in respect of sustainability, are guided by the rules that are promulgated; reiterating clear, stable and relatively general rules that are applied consistently and in accordance with the tenor of the rules. From this viewpoint any compliance or lack there of can be critically assessed against performance (adopted from Baragwanath, 1996). However any attempts to critically assess sustainability has had a turbulent history; for although it is established as a central concept in making the connection between the planet and humans – there is no sustainability orthodoxy that sets governing rules upon which to base any decision-making. Instead sustainability exists as an abstraction; an ideology that is based on social construction rather than the observed phenomenon.

¹ An example of a formal object would be man; man is then the material object anthropology, medicine and various other sciences.

As an abstraction, the ever-changing qualities and particular individuating characteristics of sustainability are determined by each particular stakeholder. The interpretation of a sustainability event, even to the extent of how a sustainability event is determined, is all task of the each particular stakeholder. The attributes of sustainability owe their virtue of existence to the nature of the stakeholder alone. Characteristics such space and time, are determined by the individual stakeholder; moreover the experience of each stakeholder will also determine the interpretation of the different kinds of causality for every type of sustainability issue. All the different ideological frames reflect a different objective sustainability reality (adopted from Dillard, 1991).

These differences in the viewpoints lead to an even greater divergence in the reasoning and understanding of sustainability; the theological reality of sustainability definitions is that their existence is owed the causal role defined by the individual stakeholders (Dennet, 1993). This ultimately undermines any foundation of sustainability knowledge; positivist-empiricists would claim that there must be a relationship between the foundation knowledge base and the sustainability reality; it should not be confined to a social construction (Slattery, 2003, pp. 56).

Hence the rejection that a final definition of sustainability can be arrived at to explain all its applications for all time; no single definition accounts for the existence of various distinct expressions of sustainability (adapted from Ord, 2003). The relevance of each definition is mitigated by the social and decision-making context of the stakeholder or clusters of stakeholders. Moreover no single definition communicates any deep foundational knowledge base for sustainability; instead a number of referents have been developed by stakeholders. Identifying the referents and the relationship they have to each other and their relevance to sustainability are critical to the understanding of the context in which sustainability definitions are created. Each definition of sustainability is often built upon a narrow scope; each user is prepared to amplify, recast, generalise or adapt the term to best fit their needs (adapted from Whitehead, 1996, p. 149).

3.5 The Stakeholders of Sustainability

The reality of the world exists at many different levels; at the most basic there is a political reality that is defined by nation-states; an environmental reality that is defined by ecosystems; a social reality that is determined by anthropological values. Historically there has been a disassociation between political, environmental and social systems –they often develop at separate times and are under different (although related) decision-making processes. Sustainability demands an understanding of how they are linked and interact so that social equity, economic security and environmental protection can be achieved (DeSombre, 2002, pp. 17).

The sustainability stakeholder can be the individual, a societal community, an epistemic organisation, a business entity, a nation-state or a global community; in short anyone from local to global can be considered a stakeholder of sustainability. It is from this viewpoint that the interests and the nature of the stakeholders are more likely to have an impact on the extent and the type of sustainability issues championed; the political power and the social control of each type of stakeholder becomes a significant factor in the acceptance/rejection of the sustainability process. Various domestic actors compete as to who will benefit or be harmed by any policy actions and regulation. In this context sustainability presents as a compromise of economic and complex institutional arrangements and any resultant sustainability achievement is epiphenomenal (DeSombre, 2002, pp. 14; Barrios & Taylor, 1999).

Nation-states, despite their politics, must respond effectively to economic, environmental and social changes in order to prosper. Environmental constraints determine that nation-states not only face resource scarcity in a bio-physical sense but there are limits to the earth's pollutant absorption capacity in the face of rising human populations; this is often called neo-Malthusian environmentalism (Ehrlich & Ehrlich, 1990; Meffe, Ehrlich, Ehrenfeld, 1993; Fernandez-Villaverde, 2001; Tietenberg, 2007, pp. 2). It is the nature of some environmental, political and social issues that declares few if any nation-state is able to successfully address all three issues independently and alone. Nation-states often have no other choice but to enter into global negotiations.

Yet the pluralistic and interdisciplinary nature of sustainability insists that the stakeholders (whether they be domestic or international), themselves may be linked and interconnected and therefore the interests of each stakeholder may be determined not only by the severity of the sustainability issue at hand but also includes the concerns of other linked stakeholders (who are for or against the sustainability issue at hand). Therefore stakeholders, on a case by case basis, are more likely to alter their interests and therefore their preferences as to how they will respond to a sustainability issue by not only considering the risks concerning gains from sustainability adoption but more importantly, by considering the risks concerning losses from sustainability adoption (adopted from Kahneman & Tversky, 1979).

Prospect theory dictates that sustainability decision-making is consigned to gains or losses for stakeholders; sustainability gains and losses defined in terms of social equity, environmental protection or economic security (adopted from Kahneman & Tversky, 1979). Which individual stakeholder's utility is either improved or worsened by sustainability adaptation has implications for sustainability outcomes; reiterating that sustainability presents as a compromise of economic and complex institutional arrangements and any resultant sustainability achievement is epiphenomenal.

Furthermore as each sustainability issue is being championed, it is clearly apparent that there is a raft of tools that stakeholders utilise which are important to the sustainability process and therefore sustainability outcomes. These tools can be formal such as statutory regulation and international treaties; informal such as traditional cultural arrangements or an international proclamation (Young, 1999). It is from this viewpoint that the process of sustainability involves not only an analytical but a prescriptive approach; determining the principles, norms, rules and decision-making procedures around which stakeholders converge. This determines that not all stakeholders are equal.

3.6. What is Sustainability?

This section of the paper addresses the question of “what is sustainability?” The more recent sustainability initiatives taken up by communities suggest that there are particular factors that are more likely to influence the potential success and the outcomes of sustainability initiatives in more predictable ways. Within communal forums emerges threads that define clusters of stakeholders with a shared sustainability problem; a conceptual stream in the sustainability discourse emerges with each thread. Clarity in identifying these different threads and how they are related can help maintain the philosophy of the concept but it is also useful in identifying how the threads of sustainability are also corrupted and that as a result of this corruption it is unlikely that the varied definitions of *sustainability* will be reconciled (adapted from Chatterjee & Bhattacharjee, 1971).

3.6.1. Scientific Thread of Sustainability

If ‘well-being’ is the goal of sustainability then the first thread is defined by scientific enquiry which attempts to measure ‘well-being’. Science is at the heart of this definition – specifically Earth system science (Clark, Crutzen & Schellnhuber, 2004, pp.14). Crutzen (2002) coined the term ‘anthropocene’ to describe the current period of Earth’s history; where the actions of human have become a significant force in reshaping the Earth’s life support systems. Much of the scientific basis for Earth system science that is used as a benchmark today is founded on the works of firstly pre-Socratic Greek philosophers and scientists, who lived pre-380 B.C; and later Galileo, and Italian philosopher and scientist, who live in the 16th century (Grove, 1990, pp. 15-19). Early philosophers and scientists from the antiquities viewed the world as a “balance” of nature; this was the principal basis for the interaction and relationships between plants, animals, the environment and humankind (Grove, 1990, pp. 19; Manzier, 1996, pp. 82). Earth science studies the planet as a ‘whole’ and synthesises together the disciplines of geology, meteorology, oceanography, geophysics, geochemistry and palaeontology; the focus is the sciences’ understanding of each aspect from a global perspective. Earth science grounds sustainability as a global concept; if only because the work of the earth scientist is global in nature (Hamblin, 2005, pp.157; Kennedy, 2006, pp. 102).

“The emergence of "sustainability science" builds toward an understanding of the human-environment condition with the dual objectives of meeting the needs of society while sustaining the life support systems of the planet.”

(Turner, Kasperson, Matson, McCarthy, Christensen et. al., 2003)

“If you get right down to it, sustainability is really the study of the interconnectedness of all things”

(Barbara Lither, US Environmental Protection Agency)

“Sustainable development is maintaining a delicate balance between the human need to improve lifestyles and feeling of well-being on one hand, and preserving natural resources and ecosystems, on which we and future generations depend”.

(The Global Research Centre, 2008)

This thread of sustainability is remarkable for its clarity and generality; the interest from the scientific dimension is global-centrally the sustainability of the earth life support systems itself (i.e. earth science). Earth science is divided into four topical areas; the lithosphere, the hydrosphere, the atmosphere, and the biosphere – these relate to rocks, water, air and life forms ([reference here](#)). This thread of sustainability is therefore the protection and well-being of the living planet; the preservation and protection of the earth’s natural cycles, the preservation and the protection of the millions of species of plants and animals, including humankind, from the destructive forces of anthropogenic manufacturing processes, technologies and human populations is the main thrust of the scientific thread of sustainability (Sachs, 1993, pp. 192).

While Malthus’s treatise on the principles of population effectively triggered the debate over the carrying capacity of the planet; it has been the role of the earth scientists that have provided a deeper understanding of the planet’s cycles of birth, development and regeneration (Dietz, Ostrom and Stern, 2006, pp126). More importantly earth science establishes that the planet’s cycles are prolonged – these exist in a different time and

space scale compared to the lifecycle of man; introducing the interdisciplinary subject of ‘sustainability science’ as earth science deals with the human impress upon these cycles. This scientific thread of sustainability provides some certainty to sustainability with the provision of facts however this thread also introduces the notion that anthropogenic damage to the planet could be irreversible (Hak, Moldan & Dahl, 2007, pp. 32-33).

It is only in this century that science has begun to understand the unexpected and unfamiliar relationship between business practise and the planet; the world is causal and

determinate. It is from this perspective that science moderates and complicates business practises; for where business in practise appears at first sight seems evident and simple, that upon deeper scientific analysis this simplification has been a distortion and a reminder of how much is missing from the financial reports. It is world of science that alerted the world populace to sustainability issues.

The definitions of sustainability from this thread are strongly focused on the life-cycle impacts and interactions between humans and the planet. The inference from this thread of sustainability is that the well-being of the planet is closely bound to the well-being of humans (and therefore by inference all the living creatures we share the planet with). This again is very much an Aristotelian view of the world; a metaphorical expression of the dependency claim humans have upon the planet (Crisp, 2008). Definitions from this viewpoint tend to integrate the well-being of the planet together with the well-being of humans as demonstrated in the examples on the previous page illustrate.

However it is significant to note that earth science has itself being subject to and continues to be subject to a whole range of influences and conditions that have shaped what is construed as modern earth science; the least being cultural and social environments of the earth scientists themselves; the development of scientific analysis, philosophical and political national influences (Porter, 1997, pp. 8; Brown, Pielke & Annan, 2008). Whilst the fundamentals of earth science are established, the interpretation of issues such as climate change (Mooney, 2008), the weather cycles (Anonymous, 1988, pp. 80), the use of predictive/interactive computer models (Farber, 2008), hydrology cycles (Ohmura & Wild, 2008) to name but a few are at best hotly debated and contested within the community of earth science. Therefore while the scientific dimension provides some certainty – it is not absolute certainty.

As the scientific knowledge of the biosphere and its ecosystems increase; there is growing uncertainty as to the long-term outcomes of the dumping toxic externalities into the natural environment (Cutter & Renwick, 2004). For the scientific knowledge establishes that the biosphere and ecosystems exist as interrelated and interconnected systems. The physical world so pictured only sharpens the gulf between the reality of business practices

and the many developments in science – an important differentiation that is taken up by some of the discourses of sustainability (Caccia, 2001).

3.6.2. Political Dimension of Sustainability

If the earth science thread focuses on ‘well-being’ then the second thread of sustainability must be political. The complexity of sustainability is characterised by large-scale connected systems with multiple variables; where uncertainty, conflict and multiple stakeholders with multiple perspectives traditionally are often associated with time-critical irreversibility issues (Funtowicz, Ravetz & O’Connor, 1998). The political thread is characterised by nation states, in attempting to fulfill their obligations as set out by the Rio Declaration and later by Agenda 21 giving sustainability a substantive legal form by virtue of enacted statute and case law decisions. Clearly the legal theory developing around the concept of sustainability is at the frontier of development law as policy-makers and the Courts attempt to integrate scientific knowledge together with respect and preservation of the environment, social justice and equity of sustainability.

Yet it is not enough for the policy-makers and the Courts to rely on solely on scientific knowledge, for sustainability also embraces economic and social aspects and therefore in its broadest sense, sustainability could also be considered to be a social science (Goffman, 2005). It is from this perspective that nation-states have taken a reductivist approach to sustainability policies; attempting to break down the large-scale systems such as the environment to smaller, environmental management systems; waste management, water management, air quality are just a few examples. At the same time, nation-states have also taken broad purposive approach to sustainability legislation so that the Courts are able to maintain the principled foundation at the conception of each law even if the fact/knowledge has changed over time.

From the political viewpoint – sustainability exists as another area that is directed at the public good. The issues of sustainability such as identified by the earth scientists are interlaced with human livelihoods, social attitudes and questions the relationship that currently exists between humans, other species and the planet (Dryzek, 1997, pp. 5). The

political thread posits sustainability grounded in utilitarian notions of producing the best consequences for the most people; therefore the focus is clearly on the outcomes rather than intentions (Hinman, 2008). The political thread is not concerned with the metaphysical definitions of sustainability; rather the emphasis is that the philosophy of sustainability should drive and direct practical outcomes that place nation-states on the road to sustainable practices (adapted from Wood, 1974). Therefore definitions of sustainability in this thread are largely replaced within functionality discourses and positive consequences/expectations from social change.

The utilitarian vision of sustainability offers a powerful vision grounded in the moral duty for all actors to set aside their personal interests in favour of the collective; a promise that will reduce or eliminate conflict over sustainability (adopted from Hinman, 2008). However the political thread is heavily reliant on the scientific thread to provide the foundational knowledge from which to assess which action will have the best outcome (or consequences) for the collective; the inference is that all outcomes can be measured or weighed. The action that is chosen must produce the greatest overall utility.

The political thread implies that societies can 'grow' into sustainability by using short-term and long-term policies, strategies and regulation that will favour a sustainability transition – sustainability without disruption to the social and production continuity. The political thread calls for deep social changes of production and consumption; the implication

“The Ministry of Tourism has recently published eight best practice guides targeted at tourism operators, to help them make their businesses more sustainable. They contain practical ideas and actions businesses can take, in a wide range of areas of sustainable best practice.”

(The Ministry of Economic Development, 2008)

“Sustainable consumption and production

To live within our resources, we need to achieve more with less. This requires us to change the way we design, produce, use and dispose of the products and services we own and consume.

These pages have been developed to provide insight into some of the problems associated with current patterns of consumption and production in developed countries like the UK, and the action being taken to reduce that burden and move us towards 'one planet living’

(UK Govt., 2008)

is that the production-consumption relationship must change and these changes must go to the root causes of unsustainable practices (without actually identify what an 'unsustainable practice is). However, deep social change intrinsically calls for a complete shift from the present social behaviours of both business and consumers. The political thread is asking corporations to step away from their traditional roles of profit maximisation and to instead, be the impetus to lead the world toward sustainability (Manzini, 1999). Equally the political thread of sustainability is calling for consumers to abandon the expressions and symbols of their culture. This calls for change at the deepest foundations of social structures. Groups of people have evolved with differences in their style and cultural practices and these differences are celebrated (Corradi, 1990).

Sustainability in the political thread is problematic in that it divides into two different mutually exclusive models that are quite divorced from each other yet have significant impact on the development, perception and understanding of sustainability (Caccia, 2001). The first model determines sustainability exists as *integration* of the economy, social and environmental goals; directed at the producers. The political policies, strategies and regulations are aimed at moving the producers away from the traditional role of profit maximisation so that social and environmental elements become just as important. Much of this is policy-driven 'best practice' models, with limited application of other regulative legislation methods (legislative methods such as taxation and statute tend to be very unpopular in societies and therefore nation-states use them very sparingly) (Smith, 1997, pp. 23). Definitions from the political authority viewpoint reiterate the functionality and utilitarian foundations of the political dimension as demonstrated in the following example.

“What is sustainability?

New Zealanders are taking up the sustainability challenge. It's the smart thing to do. Actions like switching off the lights when leaving a room, walking to work, and installing insulation save money, improve fitness and protect our beautiful environment. 1156 Kiwis have committed to make a difference by taking 63,652 sustainability steps in their 'Next Step' Plans.

Living sustainably means living smarter. This site will help you reduce your impact on the environment and save money, without compromising your lifestyle. You'll find useful tips on how best to use energy and water, and what to do with your rubbish”

(Ministry of Environment, 2008)

The second model determines sustainability exists as a *balance* between the environment, society and the economy; the implication that an equilibrium exists. In this model sustainability demands that social and environmental elements must at times, take preference over the economic elements if sustainability is to be achieved. The policies, strategies and (much less) regulation in this model are aimed at the consumers of the society; primarily it focuses on the social and environmental elements. Definitions from this aspect of the political dimension tend to take the moral high ground, insisting that the individual set aside their own personal interests so that the collective can benefit; the following example demonstrates this position.

The political thread demonstrates the balancing act of the nation-state in sustainability;

unfortunately many nation-state policies serve to constrain, rather than promote sustainability; central to all policies is the well-being of the economy (IISD, 1994). Dasgupta (2000) claims that policy makers are better able to come up with decisive sustainability policies, strategies and regulation by integrating both resource and environmental economics together with earth science. However policy-makers, constrained by cost-benefit outcomes and public interests, often work at cross-purposes with sustainability (O’Riordan, 1997). Manzini, (1999) claims that the ultimate goal of political authorities is to re-engineer the producer-consumer relationship and do no more.

It is from this viewpoint that the definitions of sustainability from the political thread attempt to constrain, encourage or alter behaviour (of both the producer and consumer) (IISD, 1994); moreover there is an underlying assumption that sustainability has a Promethean

nature, that political authorities will overcome any sustainability issues with human ingenuity and technological innovation (Dryzek, 1997, pp. 45; Field, 2001, pp 5).

It is also important to note that the nature of politics is also pluralistic and therefore are comprised of various domestic actors competing as to who will benefit or be harmed by any policy actions, strategies and regulation. The political authorities respond to the constraints of an electoral cycle which can only be viewed as short-term from the sustainability eye-glass (as little as 3 years in some countries and as much as 5 in others). Many countries, who in the last century, have faced increasing populations, are increasingly overwhelmed trying to provide and maintain sound health, education and economic infrastructures while responding effectively environmental stress (Brown, Gardner & Halweil, 1997; DeSombre, 2002, pp. 17) but the nature of some environmental issues declares that no political authority is able to successfully address them alone and therefore have no other choice but to enter into global negotiations (Tietenberg, 2007, pp. 2). This aspect exponentially increases the complexity of the political thread of sustainability.

3.6.3. Economic Thread of Sustainability

The next thread of sustainability to be considered has to be the economic. The market economies of the developed countries have without doubt bought wealth and prosperity to both the individual and society by providing employment, increasing productive outputs, international trade and payments. Nation-states have actively valued, nurtured and protected industries and corporations within legislative frameworks so that optimal economic efficiencies and productive growth are maintained; legitimising the market economy (Kelly, 1999).

A strong link exists between the economic thread and the political threads of sustainability. The work of the economists largely shapes any public fiscal policies that are determined by the ruling political authority; economists are largely interested in the structures, functioning, trends and implications of market changes (Clegg & Hardy, 1999, pp.109; Arthur, 1999). Moreover businesses constitute the elements of a functioning

economy therefore this thread of sustainability takes two distinct expressions; one from the economist's viewpoint, the other from the business viewpoint.

It is important to note that the sustainability moves away from the earlier debate between environments versus economic development (Lele, 2000, pp. 607) however this thread introduces the notion that sustainability can be viewed through an economic eye-glass. The economic thread is founded on the key idea of 'capital' – the environment viewed from this aspect is just another form of capital to be used in the production of goods; natural capital (Dasgupta, 2000; Goff, 2003). Costanza and Daly (1992) defined 'capital' as "a stock that yields a flow of valuable goods or services into the future" – the distinction between natural and manufactured stock is largely irrelevant when it is embedded into the economic thread.

If viewing this thread from the eye-glass of the economist - Dasgupta (2000) determines that this has led to two key distinctions in the economic thread that inform and underpin the market place. The first is where resource economists are focused a particular (natural or manufactured) stock to the exclusion of all else to determine the economic variables of optimum harvest rates and the value of a stock in-situ for example (Mitchell & Brown, 1990; Escapa & Pallezo, 2003; Suksoon, SangHee & JungMoon, 2004). The resource economist posits that there is a socially optimal rate of resource capital use (Field, 2001, pp. 4.); introducing concepts such as natural resource substitution and efficiencies of resource management (Field, 2001, pp. 7). Much of this work is often called the Hartwick-Solow approach; the ability for the economy to attain a consumption constant while at the same time maintaining a non-declining capital stock (Hussen, 2004, pp. 271-272).

The second is where environmental economists focus on biotic and abiotic processes to determine the impact of economic activity on the underlying ecosystems of environment; establishing costs of things such as the purification of water in watersheds and global warming (Waughray, Lovell, Mazhangara & Mazhangara, 1998; Ruth, Coelho & Karetnikov, 2007). The environmental economists posit that there is an efficient allocation of resources that will satisfy consumption without compromising the integrity and stability of the ecological environment (Klassen & Opschoor, 1991; Common and Perrings, 1992).

It is from this viewpoint that resource economists are able to talk of stock (natural or manufactured 'capital') in terms of quantities in contrast to environmental economists who speak of the quality of stock. The work of the resource and environmental economists is readily accepted by the market place if only because any measurement of capital whether it be quantity or quality, provides a foundation to measure economic growth (or lack thereof); the inference is that economic growth is essential for a good standard of living (for humans) (Erumban, 2008).

Another less accepted thread of economics is the thread of biodiversity economics. Dasgupta (2000) declares that biodiversity economics is still relatively undeveloped and largely ignored by policy makers; any resource management policies, strategies or regulation often fail to incorporate the underlying biodiversity with an ecosystem. Pearce, Moran & ICUN (1994) argue that economic biodiversity fails to take economic importance in the market place because biodiversity is not captured nor realised in economic value terms and furthermore even if it could be captured, there is no place for these values in the market place (pp. 15-16).

Daly and Cobb (1989) insist that market economics has empowered business (and by inference industry and the corporation) by the creation of a human sub-economy, which is largely built on the exploitation of natural resources (capital) and excludes significant stakeholders such as the biosphere, and specie biodiversity. This finding was reiterated by Orr (1991). It is from this viewpoint that the definitions of sustainability taken from the economic viewpoint are therefore focused on sustaining economic growth as the following examples demonstrate.

Effectively the market economy humanises the natural environment as an anthropocentric resource and this has ultimately lead to the misplaced belief that humans exist separately from the rest of the nature. Yet this general notion about the relationship between humans and nature is not wholly unheard of or new; it has long been a deep tradition of humans through out history to exploit the environment they live within even though it is both recognised as necessary as it is inadequate (Mylyntaus, Hares & Kunas, 2002). It has only been until the twentieth century that the full impact of humans on the planet has began to be understood. The planet has been transformed; ecologists and environmentalists have shown that business practices extend beyond the immediate area of impact, with serious far-reaching yet unexpected consequences (McKibben, 1990). Toxic externalities leach across national borders; inflicting environmental dilemmas on neighbouring nation-states. Furthermore toxic externalities from industrial activities are particularly worrisome; for some are bioaccumulated and/or biomagnified.

The second expression of the economic thread of sustainability is industry and business.

Industry and large corporations (here-after business) acknowledge that any future they may have (albeit it is framed within the economic framework) depends largely on how it is viewed by its stakeholders. Business has long controlled the information flow to the customers, employees, and the community and public at large; there is widely accepted a positive link between favourable business image and superior business performance (Schmidt & Pan, 1994; Margulies, 1997). However the motivations for business to pursue sustainability have

“Sustainable development involves devising a social and economic system, which ensures that these goals are sustained, i.e. that real incomes rise, that educational standards increase, that the health of the nation improves, that the general quality of life is advanced”

(Pearce, Markandya & Barbier, 1990).

“Sustainable development is a holistic concept, a strategy that requires the integration of economic growth, social equity, and environmental management.”..... Sustainable development aims to make global society not just better off, but better altogether”

(New Zealand Business Council for Sustainable Development, (no author), 2008).

moved from concern about corporate image to the strategic and competitive advantages that sustainability reporting provides (Daniels, 2006). This is yet another thread of economic sustainability; arguably this sector of stakeholders creates a 'smog' of sustainability definitions.

Merging marketing of the corporate image and reputation together with sustainability, business seeks to define and establish their narrow definitions of sustainable development as universal norms. Little research if any, in the area of the linguistic universals of sustainability exists, however when viewing the definitions of sustainability through the eye-glass of business – it is clear that of the plethora of definitions that exist in the public domain, many have been created and broadcast by business themselves (they invariably include some reference to economic growth and the inference that there is positive relationship between business and sustainability). This reiterates the work of Whitehead (1929) – in that in creating a symbolic reference (in this instance a definition of sustainability) a perception interface arises between causal efficacy and presentational immediacy (Scott, 2003). This creates an artifice of a sustainability reality that is grounded in economic growth but it also contributes to the confusion in defining sustainability; each business sector and in many cases each business is not shy of recasting an existing definition or amplifying or generalising a definition of sustainability to suit their own needs – which is then broadcast to their stakeholders. Coupling together sustainability and societal values is an attempt by business to legitimise the corporation's quest for profits. Societal value in this instance is measured by the impact of their products and processes and produces a sub-narrative of sustainability (Goldman, Papson and Kersey, 2003). Often the links to previous definitions are obvious - yet some are not so obvious; what is clear is that these definitions often take on a discreet yet significant life of their own.

“Sustainable development, by definition, is about the future. At Anglo American we’re helping to shape that future by minimising any negative impacts of our current operations. At the same time, we’re working with local communities to ensure that they benefit from our activities – now and in the years to come”

(Anglo-American Mining Company, 2008)

“Sustainable milk growth’ is a central theme that runs through the heart of our strategy – and means quite simply that economic growth and sustainability must run hand in hand”

(Harris, Fonterra, 2008).

Arguably this thread of sustainability is the one that is most quoted, misquoted and metaphorically used in the public domain and has invariably lead to concepts such as sustainable agriculture, sustainable business, sustainable industry, sustainable forestry and the such like. Business attempts to embed their definition of sustainability by explicitly attempting to shape the public’s perceptions of sustainability while it is still in the nascent stages of development (Thompson, 2008). The following examples demonstrate how business is able to create and manipulate the definition of sustainability to suit their own needs.

The definitions of sustainability within the economic thread of sustainability by and large fail to communicate how market economics has also bought profound ecological degradation of non-renewable natural resource systems and loss of biodiversity (Shrivastava, 1995). The beneficent influence that the market economy may have for society comes with an

awareness that the relationship between business practices and the planet are not inexorably for man’s good; an element that business attempts to largely ignore. Daly and Cobb (1989) argue that market economics is but an abstraction that has masked and distorted the real world; humanising the natural environment as an anthropocentric resource rather than placing humans as a part of the greater biosphere.

What has clearly evolved from the market economy is an arguably a pathway dependency; consumerism the heraldic crusade to promote the well being of humanity. The market economy demands that a nation ever increases its consumption and/or increase its

exports with an inference of an enduring good quality of life. The alternative is recession; where an overproduction of goods fills warehouses and unemployment increases, the inference is that quality of life will deteriorate. From this viewpoint the intentions and actions of sustainability can potentially and are often derailed by the threat of economic recession (Stangis, 2008).

3.6.4. The Indigenous People Thread of Sustainability

Indigenous peoples across the globe have had notions of sustainable bioregional relationships for centuries; traditional knowledge that has been passed from one generation to the next that dictates a wide range of human activity that interfaces with the environment and between their communities. This is clearly another thread of sustainability. Major, the former Director General of UNESCO said,

“The indigenous people of the world possess an immense knowledge of their environments, based on centuries of living close to nature. Living in and from the richness and variety of ecosystems, they have an understanding of the properties of plants and animals, the functioning of ecosystems, and the techniques for using and managing them that is often particular and detailed”

(Major, 2005; cited in Fien, 2006)

However this thread of sustainability is problematic in its application and often appears as an afterthought of sustainability. Major (2005) fails to acknowledge is that there are very few societies that remain close to nature and more importantly there are even fewer places on the earth that have not been affected anthropogenically²; disrupting and disturbing the functioning of the local ecosystems (Daily, Ehrlich & Alberti, 1996). Major (2005) instead advocates an indigenous form bioregional sustainability; a holistic philosophy which advocates the organisation of societies that live closely to the inherent geographical, cultural and economic patterns of the locality they live in, for they are without doubt dependent on their surrounding natural world (Berg, 2002).

² Anthropogenically – caused by humans

The inference from this thread of sustainability is that a sustainable society will evolve of itself; for the people will be familiar with their territory; production would be sustained from local geographies by following the natural cycles of the region; consumers would buy only locally produced goods in seasonal cycles as they occur and the biodiversity and natural vegetation of the bioregion would be preserved (Holdgate, 1990, pp. 79; Bastedo, 1994; Dodge, 2005). Furthermore Dodge (2005) declares that there is a stronger cultural/phenomenological relationship between the environment, biodiversity and humanity when bioregional distinctions are made; the inference is that sustainable living automatically follows because the indigenous peoples are seen as stewards of the environment (and by inference stewards other species). When viewed from this perspective sustainability in this thread is in fact limited to a form of ecological, socio-economic sustainability (Tolba, 1984; Lele, 2000, pp. 230) and often coined indigenous sustainability science (Pandey, 2002). Definitions from this thread are strongly championed by global organisations such as the United Nations and non-governmental organisations such as Landcare Research NZ. These definitions talk not only of the spiritual links that indigenous people have to their land, but often integrate the economic and social elements. The following examples demonstrate this clearly.

“The goal of the sustainable development program of the Arctic Council is to propose and adopt steps to be taken by the Arctic States to advance sustainable development in the Arctic, including opportunities to protect and enhance the environment, and the economies, cultures and health of indigenous communities and of other inhabitants of the Arctic, as well as to improve the environmental, economic and social conditions of Arctic communities as a whole”.

(Arctic Council, 2008)

“Maori Sustainable Development in Aotearoa-New Zealand is a term reflecting the aspirations of contemporary Maori. It describes holistic development and a strategic direction towards advancement, Maori autonomy, self-determination, the building of human and social capacity, to capitalise on opportunities in the 21st century. Achievement may be measured through improved Maori wellbeing and standards of health, increased human and social capacity, strength of cultural identity, sustainable management of natural resources, and culturally appropriate strategies for economic growth. Central to this holistic development are Maori values, a strong sense of cultural identity and purpose, and the retention and use of Maori knowledge”

(Harmsworth, 2002).

Unfortunately the thread of indigenous sustainability faces many challenges; the most obvious is the competing value systems between the economic thread and the indigenous thread of sustainability. Few, if any nations that would willingly move their national boundaries to match the ecological boundaries of the environment so that the natural connections between humanity and the natural world could be rediscovered (Gray, 2007). Population growth, together with urbanisation has pulled many people into lifestyles that are divorced from their traditional homes, disconnecting subsequent generations from their cultural history and their traditional lands. What has evolved is a society that is characterised by consumption rather than a sustainable bioregional relationship to the environment (Holdgate, 1990, pp. 80). Ever-mounting consumption promulgated by the market economy has re-organised traditional societies; disunited man from his natural environs has created parallel yet competing antinomies.

The antinomy between private property and public property within the market economy dictates there can only be owners of property and not stewards of property; demonstrating the difference in worldviews (adopted from Oppenheimer, 1954, pp. 104). The market economy determines through well-defined property rights, the rules and norms for the connection between humans and resources however from the indigenous viewpoint the role of landownership is inconsistent and adverse to their traditional belief systems (Holdgate, 1990, pp. 82; Hanna, Folke and Maler, 1996, pp. 2).

It is from this perspective that consumption and urbanisation has made the indigenous worldview of sustainable bioregionalism outmoded and difficult to maintain; industrialisation and market globalisation supplants sustainable bioregionalism if only because the environment is viewed as 'capital' (Holdgate, 1990, pp. 83). Moore & Lewis (2000) argue that as the urbanisation (and therefore urban populations) increased – so too did the capitalist economy and international trade; for the survival of the urban population, there was no other choice (Moore & Lewis, 2000, pp. 57). What has resulted overtime was competition between urban populations and indigenous populations; the urban populations seek to exploit the land and its resources while indigenous populations seek to protect and preserve the land and its resources (Zerbe, 2005).

It is from this viewpoint that certain nations were able to exploit the trade economy more efficiently than others; particularly nations of the Northern hemisphere. The increasing trade economy resulted in these nations amassing a greater concentration of the globe's economic and political power and established the North/South divide (Gilchrist, 2007). This has adversely impacted on indigenous groups across the globe; divorced from their home lands, undermining their value systems and often reducing them to an underclass within their own countries (Krebs, 2007).

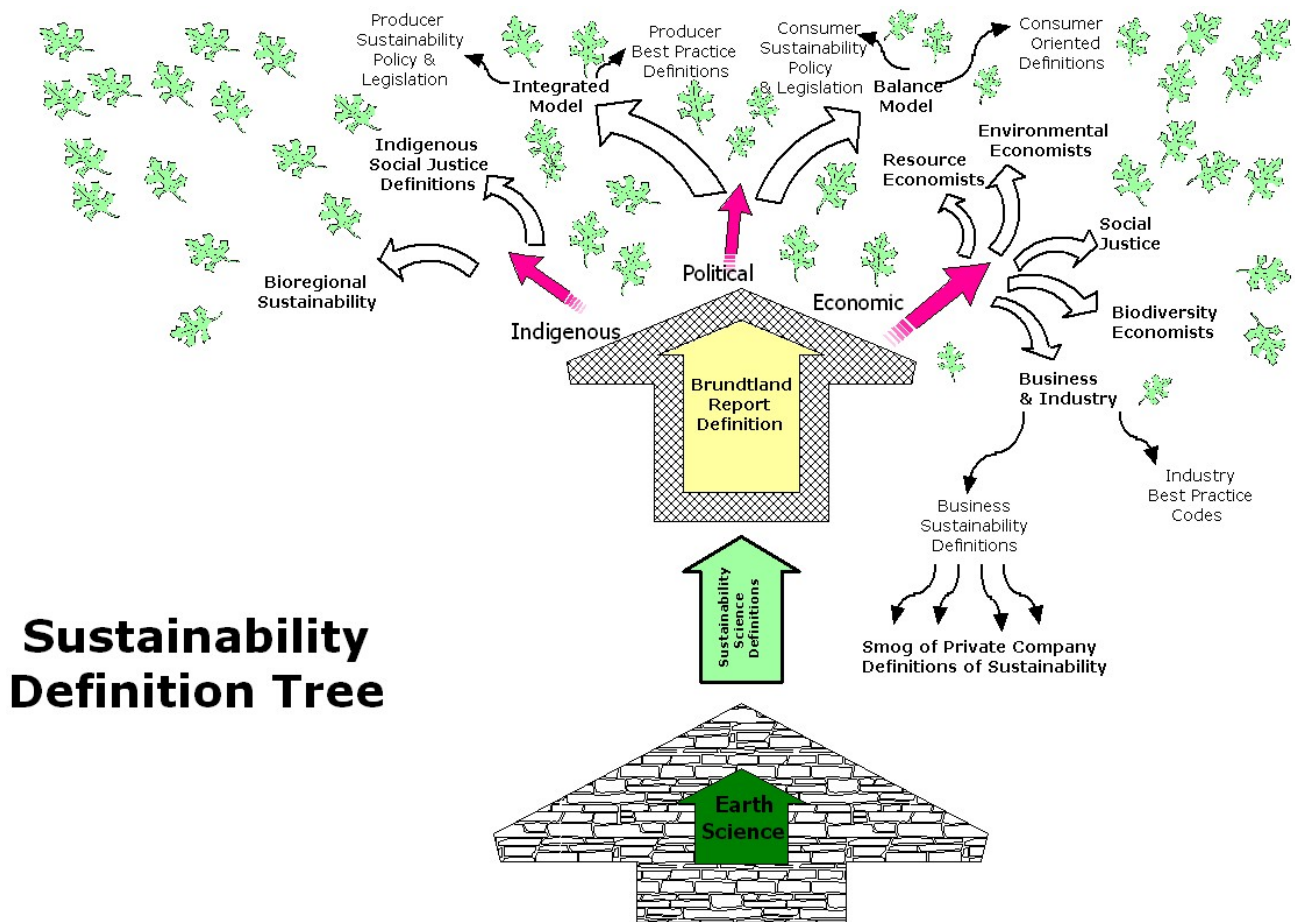
Schmookler (1993) determined that market economy has evolved to serve the individual (as a consumer) and not society (as a social community) (Schmookler, 1993, p. 63) further undermining the value systems of indigenous groups. Moreover Schmookler (1993) declares that the market economy is skewed in favour of the individual at the cost of the social community (Schmookler, 1993, p. 66) so that any attempt to preserve indigenous communities and therefore their traditional ties to the land and resources is often viewed as a necessary burden that has to be suffered by the rest of the population.

Moreover indigenous bioregionalism in the face of increasing population growth has historically led to cyclical famine (unstable food supplies) and poor population health (Evanoff, 1999). The reality of a world population that exceeds more than six billion is an increasing agricultural and production output demand that largely sidelines this thread of indigenous sustainability (Cortese, 1999).

3.7. Conclusion

This chapter identified that the definitions of sustainability can be traced to different threads and that the threads can overlap and influence each other depending on the expert knowledge required. The positional power of each thread is based on information access, the right to resources and legitimacy of their decision-making however it is clear that knowledge power trumps positional power.

Figure 1:



Sustainability Definition Tree

The paradox of sustainability lies in the issues of sustainability and not stakeholders who advocate them. However sound each stakeholder's response to sustainability seems to them, however deeply compelling their convictions about sustainability; there are other stakeholders who hold their own concerns, with equally well-defended convictions. What results is the constant questioning and continual investigation of historical practices, customary habits and moral guides of that which has been largely presumed to be the fundamental foundations and unchallengeable aspects of human society.

This chapter has identified that it is unlikely that a definitive definition of sustainability will exist. The lack of a foundational knowledge undermines the theory of sustainability; leaving it largely abstract. As result the sustainability is largely determined by the power of the stakeholders. Arguably these traits can reduce sustainability to an oratorical concept and therefore the discourse is largely rhetorical and fragmented. Whilst the language

used in sustainability is beyond the scope of this study, it is enough to note that it is often complex and unwieldy; deconstruction of the different definitions of sustainability reveals no clarity in the language and instead metaphors of sustainability are identified (adopted from Caputo, 1994, pp. 13). Clearly the value of the sustainability lies in its ability to bring together different groups in society to discuss sustainability issues.

Table 1:

Sustainability Thread	Characteristics	
Scientific Thread	<ul style="list-style-type: none"> • Earth Science (Sustainability Science) 	<ul style="list-style-type: none"> • life-cycle impacts • interaction between humans and the planet <p>Definitions will contain terms such as ‘well-being of the planet’ and ‘well-being of humans’</p>
Political Thread	<ul style="list-style-type: none"> • Integration of economic, environmental and social aspects 	<ul style="list-style-type: none"> • Producer driven model <p>Definitions will be underpinned by ‘best practice models’ and limited application of regulation. The definitions will focus is more on efficient use of resources, reduction of waste and pollutants</p>
	<ul style="list-style-type: none"> • Balance of economic, environmental and social aspects 	<ul style="list-style-type: none"> • Consumer driven model <p>Definitions will contain take the moral high ground – with social and environmental take precedence over economic aspects.</p>
Economic Thread	<ul style="list-style-type: none"> • Resource economic aspect 	<ul style="list-style-type: none"> • focus on stock (from a capital perspective) <p>Definitions will contain ‘optimum harvest yields’ and ‘resource substantiality’ and efficiencies of resource management (usually transcends to dollar values)</p>
	<ul style="list-style-type: none"> • Environmental economic aspect 	<ul style="list-style-type: none"> • this looks at the efficient allocation of resource management that will satisfy consumption without depleting underlying stocks (or capital) <p>Definitions will contain ‘quality of the resource’ and ‘integrity of the resource’ (usually transcends to dollar values)</p>
	<ul style="list-style-type: none"> • Biodiversity economic aspect 	<ul style="list-style-type: none"> • looks at the biodiversity impact from economic development <p>Definitions will speak of impact on the underlying ecosystem , populations of species (not in dollar values)</p>

<p>Economic Thread (Cont'ed)</p>	<ul style="list-style-type: none"> • Industry and business aspects 	<ul style="list-style-type: none"> • Merges together corporate importance, marketing tools, societal values and the corporates' definition of sustainability <p>Definitions will link economic growth, societal values and a sub-narrative of sustainability that the corporation has constructed (generally by merging a plethora of other definitions)</p>
<p>Indigenous Thread</p>	<ul style="list-style-type: none"> • Bioregional sustainability 	<ul style="list-style-type: none"> • talks of the natural cycles of each regional location and couples it with consumer traits and biodiversity of the regional location <p>Definitions will contain terms such as 'buying locally' and 'sustaining the region'</p>
	<ul style="list-style-type: none"> • Indigenous groups 	<ul style="list-style-type: none"> • this identifies the cultural/phenomenological relationship between humans, the environment and biodiversity. The Indigenous groups are identified as 'stewards' of the planet and therefore existence and well-being is intrinsically linked to the 'well-being' of the planet. <p>Definitions will contain terms such as ecological preservation, well-being of the planet and species and socio-economic well-being of the indigenous groups themselves. Terms such as 'holistic development', 'protect the environment', 'spiritual attachment to the land' will be integrated with economic and social terms.</p>

Chapter Four

The Paradox of Sustainability and Accountancy

“The correctness of the theory is judged by the degree of agreement between the conclusions of the theory and human experience...”

4.1 Introduction

The purpose of this section of the paper is to explore and analyse the relationship between accountants and sustainability. An examination of the institutional development of the accountancy profession provides a perspective for understanding the emergence of the accountant as a business intermediary. By advancing the accountant as a business intermediary – this chapter examines the concerns of role conflict between the accountancy profession and sustainability. This chapter is organised as follows:

- 4.2 Accountancy – the Profession
- 4.3 Agenda 21 and the Accountant
- 4.4 Sustainability and the Accountant’s Responsibilities
- 4.5 The Conceptual Issues and Sustainability
- 4.6 Environmental Accounting
- 4.7 Sustainability Reporting
- 4.8 Conclusion

4.2 Accountancy – the Profession

Accountants have long proclaimed themselves to be a professional group because of the special nature of the services they provide to the public. Accountants command a specialised body of knowledge and effectively apply it in the commercial business world to real and often complex problems (Klein, 1998, pp. 88). The single thing that distinguishes a profession is autonomy; self-regulation and collegial control as a gate-

keeper for entry to the profession together with training and monitoring of members' conduct (Freidson, 1984).

Earlier literature seeks to define the accountant in the public role (as auditor) by acting as a gate-keeper of the financial information disseminated to the public and in the private role (in providing services to his client) by advising clients on business practices (Duncan, 1908; Webster, 1944; Rampy, 1952). The scope and work of the accountant has grown – this could be explained by the ever-expanding roles and responsibilities of accountants in relation to public and private obligations. As the business environment has expanded and developed – so too has the work of the accountant. Apart from auditing which has to be provided by a qualified accountant, a large number of the services provided by the accountant can be supplied by other business professionals¹; fierce competition exists in the accounting marketplace (Treasury, Australia, 2008).

The accounting firms as multi-disciplinary practices – hire a range of other professionals such as lawyers, economists and financiers; offering varying degrees of legal and non-legal expertise (Anonymous, 1947; Emery, Hooks & Stewart, 2002). This has increasingly provided the clients with tactical one-stop shopping; it is not uncommon for an accounting firm to offer a basic service of business advisory, assurance and taxation. In the medium to large firms, the basic services are expanded to include categories such as finance, business recoveries, investigations, actuarial services, human resources, forensic accounting, and legal compliance; services that were once offered in the smaller specialised firms (but not necessarily accounting firms) (McVea, 2002; Emery, Hooks & Stewart, 2002). The accounting firms in extending their spheres into multi-disciplinary practices have responded to a definitive business need; the function of business intermediaries. This reiterates the seminal work of Abbott (1988) – professions only grow in their scope and jurisdiction if there is an area of growth that they can claim; a niche that the profession can grow into. Certainly this growth has enabled the multi-disciplinary accountancy practices to offer boutique and specialist services; creating a professional specialism that is hard to displace by other professionals (Picciotto, 1995, pp.26-27).

¹ such as business consultants, management consultants, tax return consultants to name but a few

The multi-disciplinary accountancy practices are typified as a classical example of how a professional body develops and moves their jurisdictional boundaries (Halpern, 1992); the key to this jurisdictional change has been the demands of the clients (Freeman, 1997, pp. 13). Whilst academic literature focuses jurisdictional vacancies and professional turf battles between professional bodies (Abbott, 1988; Larson, 1979; Freidson, 2001) little if any literature looks at the impact of consumer behaviour on the development of a profession.

Furthermore there is little if no literature in the area of accountancy that looks at the distributed role of shared decision-making² in multi-disciplinary accountancy practices. Clearly a client who has tax, investment and legal affairs all within one firm would bridge more than one professional; the presumption is that the multi-practice accountancy firm would be advancing the interests of their client to formulate an informed and balanced decision (Jaakkola, 2007). An inter-professional decision-making would involve a collaboration that reflected the complexity of the issue at hand; in this context risk and uncertainty is inherent. Much more attention in the literature has been given to the nexus between accountants, conflicts of interest, ethics and independence if only because the role of the auditor versus business intermediary is contentious (Davis & Stark, 2001, pp. 5).

It is advanced here that the clients have largely motivated the change of the accountancy practices; the accountant is in a unique position of engaging the client in the decision-making by offering (the best) available advice (inferring risks and benefits) of any particular business problem³ and therefore influencing, if not dominating their client's ultimate decision (Jaakkola, 2007). Whilst the relationship between the client and the multi-disciplinary accountancy firms is beyond the scope of this study, it is important to note that social ascription (both formal and informal) and client expectations define that these institutions have power. Moreover the complexity of the business arrangements and affairs has created a power imbalance between the client and these firms and that the multi-disciplinary accountancy practices are largely responsible for managing this differential. Arguably this has created a new jurisdiction for these multi-disciplinary accountancy practices (Abbott, 1988).

² Fischhoff & Johnson (1990, pp. 25) determined that client's information was being distributed over several individuals and groups within an organisation; that any decision-making was shared.

³ Note that the advice has moved beyond accounting problems

The power of these multi-disciplinary practices has given them access to extensive national and international professional and business networks and greater resources. This has made it possible for these firms to actively engage and influence the development of the accountancy profession, international accounting standards and lobby government reforms in accordance with their own interests (Priest, 2009). Moreover these multi-disciplinary practises are best able to navigate the regulation, for they often provide advice to the regulators (Bucher & Stelling, 1969).

However there is also concerns that the desires of the multi-disciplinary firms to extend their spheres of services beyond the core competencies of accountancy moves these firms beyond the collegiality model of profession into the realms of profitability and competition; a process of commercialisation (nationally and internationally) expressed as soliciting clients (rather than advertising), business development, market share and operational capacities (Dezalay, 1991; Backof & Martin, 1991). Accountants' acting more like the businesses they serve rather than a profession, seek greater revenue streams and play important roles in national and international markets (Zeff, 2003a). Accounting firms have rationalised their operations by centralising profit centres, use billable hour charge systems and marketing strategies. The larger accounting firms have organisational structures that mirror the large corporations they are serving; multi-national firms along with accountants practising in more than one jurisdiction is now commonplace (Dezalay, 1991; McVea, 2002).

Arguably the drivers of these changes in accountancy firms are determined by three significant progenitors; technology, the global market economy and the relationship between business and its investors (Albrecht & Sack, 2000, pp. 5; Schaltegger & Burrit, 2000, pp. 31-33). The significant increased economic activity, industry innovation and the complexity of the transactional problems presented by the clients drove the medium to large accounting firms to restructure so that other professionals could be incorporated into their firms to meet the needs of clients; the alternative was to forgo potential profits by referring to other business professionals. Within these multi-disciplinary practices the services may not be constrained to accounting services, the advice may move beyond financial matters and more importantly the professional delivering the advice may not be a chartered accountant (Chartered Accountants Association of Canada, 2000).

Zeff (2003b) declared that none of the multi-disciplinary practices declared themselves as an accountancy organisation on their letterheads or in any of their media publications. Little if any literature discusses the hybrid nature of the professional services being provided and the alignment of the professional actions together with the client's expectation (adopted from Jones, Hesterly, Fladmoe-Linquist & Borgatti, 1998). The underlying business strategy of the multi-disciplinary practices has to be founded on the constellation of services provided.

The perceived benefits of the multi-disciplinary firms are the greater efficiencies over a broader scope of services whilst advancing the client's interests; cross-selling of different services to the client is facilitated by the pooled on-site services. McVea (2002, pp. 814) argues that this provided the accountancy firms the opportunity to navigate away from the low profit margins of audit into the more prestigious and lucrative markets of consultancy (both national and international markets). The Canadian Chartered Accountant Association also declared that whilst the accounting code of ethics and accounting standards are relatively straight forward in application for the medium-sized and smaller accounting firms – the larger multi-disciplinary institutional practices challenge these boundaries with the presumption that professionals in the same firm will share knowledge despite any attempts of institutional mechanisms to prevent this from happening (pp. 13). This reiterates the earlier discussion of inter-professional shared decision-making.

Dezalay (1991, pp.793) went further to determined that the emergence of the multi-disciplinary firms was an attempt by accountants to conquer markets that have been until recent times, held by the other professionals such as the lawyers, economists, bankers and financiers. Backed by a strong knowledge of the capital markets and extensive business and professional networks, these multi-disciplinary practices have been able to take up functionally important pole positions within the professional world; giving rise to stratification within the accounting profession itself (adapted from Davis and Moore, 1944).

The literature is largely silent on the apparent yet obvious stratification of the accounting profession; the multi-disciplinary accounting firms' dominant the market place; taking rank over the medium sized accounting firms and individual private practices, of lone accountants and small accounting practices. The individual private practices, lone

accountants and small accounting practices are constrained to the basic core competencies; taxation, assurance and business advisory, relative to the size of the client they service. Greenwood, Suddaby & Hinings (2002, pp. 6) identify the accounting profession not as one homogenous group, but rather a professional body that exists as sub-communities.

The importance of the stratification of the accounting profession has bearing on the role-creation of accountants; this is largely being driven by the larger multi-disciplinary firms who have significant influence on policy decision making and regulation, lobby for the interests of the profession, seat a number of their executives within the accounting professional bodies and other influential bodies (Wilmot, 1986; Greenwood et. al., 2002; Zeff, 2003b). These multi-disciplinary practices have emerged as prominent public figures (Zeff, 2003b). They have gained a concrete position of power whereby they have attempted to build, create and shape the role of the accountant to include that of business intermediary; this professional positioning has been largely adopted by professional accounting bodies as a legitimate expansion to the work of the accountant if only because the boards have at least one member from a multi-disciplinary practice driving to that end (Greenwood et. al. 2002; Zeff, 2003a & b).

Articles, research (within their own organisations, professional bodies and within universities), professional workshops and conferences are regularly sponsored by the multi-disciplinary practices; this reaches a wide audience (Zeff, 2003b). Chartered accountants are no longer just accountants – they are business advisors, a professional jurisdictional gain (Abbott, 1988; Butler & Durkin, 1998).

Arguably the nature of the multi-disciplinary practices has shifted the structural boundaries of the accounting profession, creating new fields of expertise for the accountant but also challenging the jurisdiction and relationships of accountants to other professions (Suddaby, Cooper & Greenwood, 2007). Whether the extension of these professional boundaries are justified or not are beyond the scope of this paper – however it is noted that to constructively challenge the relevance of traditional role of the accountant during a time of rapid change in the business environment seems a necessary and responsible professional position to take.

4.3 Agenda 21 and the Accountant

Despite the significant gaps that have been identified in Agenda 21⁴, it became the antecedent for change; it identified parties that could contribute positively to a sustainability transition and brought global attention to these parties. Driven to taking up sustainability in some shape or form was the only course open to some of these parties if only so they could attempt to legitimise their activities. Certainly since Agenda 21 there has been a significant increase in the number of parties' participation in sustainability dialogue and producing sustainability reports.

One of the key cornerstones of Agenda 21 is the full costing of economic development; this is the development of an accounting system that includes the full value of natural resources and full costs of environmental degradation (International Institute for Sustainable Development, 2009b). More importantly the directives of Agenda 21 is aimed largely at business and industry; the major clients of accountants. Agenda 21 forged the sustainability link between business, social and environmental impact; accountants, as identified by Agenda 21, were considered a significant link between business and sustainability⁵.

The initial impact is not felt so much upon the small to medium size accountancy firms, even much less the lone accountant; for their work is limited to the core competencies of accountancy. At first glance the most affected by Agenda 21 is the multi-disciplinary practice. The multi-disciplinary practices has spent a significant time and effort building and sustaining their image as competitive professional service firms, therefore the client's expectation that these firms can adopt distinctive accounting strategies to address the issues of sustainability reporting is not unreasonable. Moreover the clients of these firms are business sophisticates; therefore their ability to assess the providers of professional services is based on the premise that they are able to get the right firm for the job (Brown & Swartz, 1998). This has two implications for the multi-disciplinary practices initially – but as later

⁴ The roles of the military, nuclear waste trade, consumption patterns across the globe and role of corporations were just some of the issues that were explicitly left of the agenda (Vidal, 1992)

⁵ Agenda 21; Chapter 30: The role of business and Industry

discussed this also has implications for the small to medium accountancy firms and ultimately the lone accountant.

The first implication is the clients' expectation that the multi-disciplinary practices can provide the services they need. In recognising a growth opportunity provided by providing inter-professional services, these firms have been able to transition their business models to provide an effective service delivery function to meet their clients' needs; as Zeff (2003a & b) noted few of these firms hold themselves out as accountancy firms but rather position themselves in the marketplace as business intermediaries (expanding the traditional role of the accountant). It is also important to note that prior to the 1990's the accountancy professional bodies (as well as corporate entities) were vehemently opposed to social and environmental reporting (Gray & Milne, 2002). Agenda 21 has placed pressure upon producers (the significant clients of these firms) to meet sustainability initiatives; these producers will seek other professional service providers to meet their needs if the multi-disciplinary practices can not provide these services.

This has serious implications for the professional jurisdictional ground that these multi-disciplinary firms have been able to establish for accountancy. Abbott (1998) contends that professional groups vie over areas of work; that struggles over jurisdiction can effectively shut out weaker professional bodies (reducing their power and legitimacy in the professional arena) and empowering other professional bodies in their place. This would effectively remove the hegemony over professional business services that these multi-disciplinary practices have had. As already discussed – many of these services can be provided by other professional bodies.

The second implication is the role-creation of the accountant and the relationship accountants have to sustainability. The specialised knowledge and expertise of the professional is only meaningful if it can be applied in the context of the services the professional provides to their clients. The success of any profession to retain any jurisdiction lays in the fact that they are able to claim a monopolistic spatial position over the core knowledge of that jurisdiction (Abbott, 1988). The abstraction of their core knowledge ensures that the profession is able to lock out any other professionals (Daley, 2001).

Agenda 21 specifically talks of full cost accounting of natural resources and the degradation of environment by business and industry; analysing use, measuring depletion and productivity in the context of the society and environment. All these are effectively accounting treatments and at first glance identifies with the core professional competencies of the accounting profession (United Nations, 1997). Moreover these increased measures of monitoring and accountability align themselves well with the accounting professions' desire for professional dominance in the area of business reporting; the victor gaining a very elite as well as lucrative advisory authority (Gray & Milne, 2002).

However as previously discussed in prior chapters – sustainability is proving to be an ambiguous term, largely defined from the perspective of the stakeholder. The stakeholder individual and/or groups are as widely diverse as the populace of the planet; the issues of sustainability involve global, national and local concepts of natural resource preservation, allocation, equitable distribution and intergenerational justice (and as noted in previous chapters it also requires an understanding of a colossal range of highly technical and specialised material (beyond the realm of the accountant). It is from this perspective that to conceptualise sustainability as an accounting function goes beyond reporting material transactional events (in currency terms) of a single entity for a fixed accounting period (a private accounting function) so as to include the aspects of social and environmental impacts of a business (a public accounting function) into a report.

This has not stopped the multi-disciplinary practices, along with the accounting profession from attempting to lay claim to the sustainability reporting jurisdiction (Gray & Milne, 2002). As Agenda 21 called for institutional change in producer-consumer relationship, it also called for the development of appropriate instruments to analyse, monitor and account for sustainability (Cheney, Nheu & Vecellio, 2004). This has led to more than thirty years of accountancy research so that reliable methods to incorporate the social and environmental aspects of business into their annual reports could be established; this has not yet been achieved (Gray, 2002). There is neither fundamental theory nor reporting competency that the accounting profession can rely on so that they can maintain a professional hegemony over sustainability reporting (Gray, 2002; Gray & Milne, 2002). This has serious implications for the accountancy profession's jurisdictional control in business

reporting, the public perceptions of the accountant's work and could ultimately result in the profession being regulated (Abbott, 1988).

The failure to construct a reliable framework to monitor and account for sustainability issues has arguably created an uncomfortable disjuncture between what the accountant profession can provide and what the clients want. Many clients have taken to creating the sustainability reports for themselves. Furthermore many of these clients began to define and construct sustainability in their sustainability reports according to criteria they themselves determined (Fox, 1999; Boot & Thakor, 2001; AAA, 2002). Much criticism was levelled at these reports, for they lacked key cornerstones of public reporting (and accounting) – relevance, reliability, understandability and comparability (AAA, 2002).

4.4 Sustainability: The Accountant's Responsibilities

Accountants are charged with the protection of the financial markets; measurement, valuation and reporting are the hallmarks of accountancy (AAA, 1949; Goldberg, 1971; Montagne, 1986). Furthermore, the quantitative characteristics of accountancy have been well suited to communicate the business transactions of the market economy (Crouzet & Vern, 2002).

However whilst the accounting profession ties itself easily to tax, management and financial accounting, the public are demanding more information about the social and environmental impacts of business activities; something that the accounting function does not do well (Adams & Hamilton, 2008). The overriding concern appears to be that while the growth of the global market economy alongside international accounting has been prodigious for more than several decades, accountants have not been able to convince business that they can meet the persistent and steady call for social and environmental accounts. This has become a major concern for accountants as sustainability reporting has gained significant exposure, forcing accountants to accept no less than a revolution in the accountant's thinking of external reporting (Gray, 2002).

With the increasing attention paid to sustainability reports, alongside the accounting profession's demand for greater revenues, accountants have the incentives to take a greater role and responsibility in the development of sustainability reports. From the societal viewpoint broadening the responsibility of the accountant protects not only the client, but also the accounting profession and the public; it keeps the accounting profession accountable (Davis, 2006). However from the accountant's viewpoint sustainability expands the accountant's responsibilities; yet it is largely unclear what role the accountant is expected to have to sustainability (Dyer, 2003). In contrast to the accountant of old – the modern accountant is legally obliged to have more in mind than just the interests of the client (Parker, 2005). This mindset has been largely weakened by the legislature⁶ and professional disciplinary constraints placed upon accountants; an accountant's liability is no longer limited to actions bought by clients for incompetence (DiPiazza, 2002; Pacini, Hillison, Alagiah & Gunz, 2002).

The accountant is still required to maintain the traditional responsibility of accounting competency and representation for the client; the accountant has a public duty to ensure that the client complies with the accounting standards (Clarke, Dean & Oliver, 2003, pp. 4-6). The production functions of the market economy together with the legislative frameworks also legitimise the service function of producing financial reports and therefore the accountancy profession⁷. For there is an inferred public good that arises from producing financial reports and establishes the nexus between the market economy and business (Smith & Smith, 1971; Owen & Lehman, 2000; Mack & Ryan, 2006).

The role of accountancy takes on greater importance in the expansion of the market economy if only for the fact that financial reports fill the information lacunae between a business and its stakeholders. The function of accounting is then clearly measuring, recording and reporting (Goldberg, 1965, pp. 70).

Moving beyond the global scandals that have bought the accounting profession into public scrutiny, there are a number of other factors that have broadened the accountant's responsibilities. Most notably is the growth of the accounting profession and

⁶ Legislation such as the Financial Reporting Act 1993

⁷ Financial Reporting Act 1993

the established multi-disciplinary practices (Emery, Hooks & Stewart, 2002); the emergence of large organisations, the increasing separation between owners and managers, the increasing complexity of tax legislation and statute compliance along with the increasing complexity of financial markets (and the attendant financial instruments) have all contributed to the tremendous growth of the accounting profession during the twentieth century (Sririam & Vollmers, 1997; Shafer, 1998). Raising the public awareness of accountants has had intrinsic value to the growth of the profession, to the point where the profession in many countries has adopted proper composite branding techniques to differentiate accountants from others that work in the same domain of practise (Richard & Brian Jones, 1997; Bloom & Myring, 2008). Certainly the accounting profession underscores their jurisdictional rights over business reporting.

It is the rise of sustainability that has noticeably accelerated the development of new responsibilities for accountants and the accounting profession. The most significant pressure for reform has been the nature and the composition of annual reports; the *apparent* connection between accountants and the production of annual reports maybe one of the factors that accounts for the emergence of these new accounting responsibilities. There exists an underlying assumption that *all* corporate reporting is implicitly the work of the accountant; that any corporate reporting problem can be addressed by an accounting standard.

The financial reports from this viewpoint become a reliable source of information to stakeholders as to a firm's performance and position (Cruzet & Vern, 2002). The normative role of the accountant as the best profession to communicate business information to stakeholders and the performance of a company and its management remains largely uncontested (Peel, 2000; Prickett, 2005).

The current understandings of financial reports have their origins in the collaborations of scores of accounting researchers, theorists and accounting standard-setters from many countries (Stamp, 1966; Hendriksen & Van Breda, 1992, pp. 107). The ontological foundations of accounting knowledge has been a largely deductive process that attempts to reaffirm that the substantive knowledge of accounting can be defined in scientific terms (Moonitz, 1960; Scott, 1979a;).

Yet it is important to note that accountancy reflects and underpins the predominant societal values of private property and unquestioningly also reinforces these same values as autonomous rights (Pallot, 1991; Rose 1996). Accountancy has evolved to reflect the ideals of western social and political liberalism; establishing the individual property rights and the freedom for exchange are constitutionally ordered so that the economic marketplace is protected and encouraged (Rose, 1996). Private property rights are also argued to prevent the tragedy of the commons by creating alienable rights (Anderson, 2007, pp. 34-35)

It is therefore from this viewpoint that accountancy is not far removed from the classic legal property philosophies' of John Locke and Jeremy Bentham. For although accountancy possesses an enormous theoretical knowledge, and although there are strong academic and professional accounting bodies dedicated to maintaining and developing accountancy knowledge; it is nonetheless in modern times established as an authority, while at the same the practical ends of accountancy are organised and elected as the best centre of reference in an official way to oversee deliberately the transfer and legitimisation of private property (adapted from Levi-Strauss, 1987, pp 61).

The Lockean narrative declares that the motivation to labour is private property rights; that property rights are indeed the wealth yard-stick to measure all else against, including the success of a political regime. Rose (1999) declares that property rights in many legal jurisdictions are amongst the most protected of political rights that support democratic governance. Locke declared personal property arises from the labour that a man has mixed with a natural resource so that it becomes a man's own personal property⁸. This theory was later furthered by Bentham who declared that property rights are an economic ends in itself; that a government that secures and protects property rights fosters a wealthy society. This has arguably led to the establishment of the capitalist property rights which protect private property and by inference commercial rights.

Yet despite the progress of private property rights in the post-modern era, the monistic nature of private property rights that has fostered by the market economy for centuries has been rendered within one generation of humanity as inadequate by the acuity

⁸ the right to own, to sell, transfer or give away, the right to alienate or the right to destroy Gerbic and Lawrence

of changing values and science. Judge (2002) states that by declaring an environmental outcome as an externality establishes that there were no prior property rights and therefore neither the polluter nor the humanity affected by the pollution can make any presumptive claims to an unclaimed resource in the commons; and therein lays the problem.

Overwhelming couched in the language of economics; private property rights also reveal the causal relationship to accountancy. The relationship between private property rights and accountancy is a logical necessity; a relationship that is not absolute but of a character that the unity of the market economics is wholly based upon.

It is not enough that private property rights and accountancy not only determine what is shown to be real and important to the modern society – but that the relationship also shows that there is a kind of relevance albeit a relevance that appears differently to different aspects of humanity. It is this relevance that the general notions about humanity's relationship with each other and with the planet are not in the nature of things unfamiliar, wholly unheard of, or even new. Even in the time of Aristotle, humanity has languished over the increasingly scarcity of natural resources; often attempting to seek answers without ever having to relinquish any of the privileges.

Whilst accounting principles have evolved with deep-rooted connections to economic theories (Moonitz, 1961; Gaffikin, 2005b); there has been a lack of continuity with environmental and social theories. Sustainability is particularly difficult for the accounting profession, yet clearly sustainability demands more of the accountant; revealing a dichotomy between what the accountants are providing and what the stakeholders want in business reports. This has led to the evolution of accountancy in a very narrowly defined model based on the individual client with rights to property (Common, 1995, pp. 189).; any notions of including social and environmental aspects are largely excluded. It would demand that accounting at its most fundamental level would need to move towards a communitarian perspective and away from the capitalist economic paradigm (Williams, 1987; Pallot, 1991).

4.5 The Conceptual Issues and Sustainability

The attention of the stakeholders has expanded to include the impact of business activities on the environment and society; even though sustainability has defied for several decades attempts to provide a conceptual framework. Sustainability is at odds with the accountancy and at first glance seems incompatible; there has to be a relationship between the theory and the pragmatic reality of accountancy and secondly accountancy must attempt to determine what the qualities of the environment and social aspects of business have value (and therefore determine which is material). The inference from sustainability is that accountancy will be able to construct a complete impact of the nature of business; what is evident is that accountancy in its present form cannot be a complete picture of a business's actions. Moreover that sustainability has to be invoked to provide a more complete picture of a business's actions.

“..if accounting presentations are to furnish useful information, accounting inquiry must be directed towards understanding human purposes, the information relevant to human purposes and the communication of purposeful information among people”

(Gerboth, 1973).

Gerboth's quote idealises the role of the accountant – the taking of raw data and converting it into useful information for decision-making. Yet as already stated while accounting ties itself well to the microcosm of financial, management and tax accounting – sustainability clearly moves beyond this. The common notions and assumptions of accountants are challenged by sustainability; in order to grow out of the existing accounting microcosm there are no simple solutions.

How accountancy constructs the nature of a business's reality is found in accounting research theory; it also explains why sustainability presents a conundrum for accountancy. Accounting research takes two distinct forms; a macro and micro level. The macro level is very successful at describing how accountancy works at the level of the firm within the business environment; describing the actions of business. The focus from this viewpoint is the technical aspect of accounting – the production of financial reports. It

reflects the importance and the nature of accountancy's pragmatic relevance at the level of the organisation; accountants guided by accounting standards are able to construct the financial health of a firm by the use of economic values (Waldavsky, Chai & Swedlow, 1998, pp.86-89).

The macro level of accountancy implicitly employs a prescriptive approach to accounting; accounting standards identify the objectives of financial reporting but also establishes accounting as an economic arbiter and a financial expression of an organisation's strategies and relationships (Grady, 1947; Snavely, 1987; Amernic & Craig, 2005). It is from this viewpoint the technical aspect of accounting is embodied in the principal of reciprocity, for it captures the real meaning of accountancy; the financial reports sets out the obligations and duties of the client and any rightful claims that maybe upheld against that client. An implicit social contract exists between the business community, when they comply with accounting standards and the public, who trust the accounting profession's integrity (adapted from Malinowski, 1959, pp. 55).

However when the social contract exists as a permeable relationship swelling the group of stakeholders who could be potentially parties to the social contract, what results is largely uncertainty. The accountant's role in producing financial reports is seated within a legislative framework; although the profession is self-regulated, it maintains the integrity of the financial reports by working together with accounting standard setters. The method by which the accountants perform their duties is supported by this framework however the capitalist market of business function is privately owned. This juxtaposes the social contract of sustainability to business; there is no legislative framework determined either by the accountants or the State that demands the disclosure of social and environmental impacts (Tilt & Lubansky, 1999). Although there is much literature that speaks of the morality of the social contract between business and the communities they work within (Gray, 1992; Lehman, 1995; Lehman & Tinker 1997; Deegan, 1998); the essential terms of any social contract are largely absent and therefore it is a mote point that the social contract can be revoked if the terms are not upheld as determined by Deegan (1998, pp. 17).

The micro level of accountancy is far more subtle yet as every bit as important as the first form; the second focuses on the conceptual development and underpinnings of

accounting. Accounting theory lays the foundational knowledge of accountancy and the attention is focused on the conceptual definitions that define key elements which are used to construct the financial reports.

Using a deductive process, accounting theorists have built the ontological foundations of accounting knowledge (Gaffikin, 2005); reaffirming that the substantive knowledge of accounting knowledge can be defined in scientific terms (Moonitz, 1961). Accounting standard-setters are heavily reliant on the work of the accounting theorists to identify, develop and clarify the conceptual aspects of accounting; the micro level of accountancy defines the practical constructs used at the macro level for building the financial reports (Hendriksen & Van Breda, 1992, pp. 107). This translates into reducing the costs to produce annual reports; accountants are provided with a financial reporting template to follow.

Yet sustainability is particularly difficult to incorporate into conceptual aspects of accounting. Monitoring from the sustainability perspective is more liken to environmental and social surveillance rather than a measurement of performance; it requires a multivariate conceptual framework that incorporates societal values along with ecological integrities. To be meaningful the monitoring would involve some evaluation of a cause and effect relationship and therefore retrospective as well as prospective information would have to be incorporated (Noon, 2002, pp. 34).

Traditionally the macro level of accountancy would focus on the production of financial reports and the micro level would focus on defining the key elements used to make up the financial reports. Using definitional, recognition, measurement, qualitative and quantitative objectives as key cornerstones for the financial statements, accountants have been able to construct a business's financial reality with some financial accuracy.

Accounting standards have developed in a positivistic manner, despite the increasing importance of interpretive and critical accounting research (Chua, 1986); therefore only that which can be quantified and valued in monetary terms are entered into the financial accounts. Accounting realism demands that which can not be measured or quantified should be annexed to the financial reports as notes (Watts and Zimmerman, 1978; Christenson, 1983). The accounting profession have long used accounting standards

as pragmatic guidance for accountants. Central to the core issues of sustainability accounting is the lack of sound accounting standards that provide accountants with guidance; this relates back to the lack of foundational knowledge already discussed in the previous chapter. It has been implicit in the past that all reporting problems can be sufficiently solved so that they can be incorporated into an accounting standard (Hendriksen & Van Breda, 1992, pp. 111).

Sustainability challenges generally accepted accounting practices at both the macro and micro level, which, rather than improve the foundational knowledge and understanding of sustainability, serve to distort the traditional understanding of value and value creation instead (Gray, 2006). While business calls out for reform of accounting standards, accounting standard-setters and accountants struggle with dynamic business environment annexed to social and environmental links, not least because business's relationship to the wider social and environmental community is far from clear.

Yet clearly sustainability demands more of the accountant; revealing a dichotomy between what the accountants are providing and what the stakeholders want in business reports (Lehman, 1995). Accounting has long been accepted as a financial language that communicates the economic value and performance of a firm; (Stone, 1967) yet the changing values of society are shifting the business focus from the financial reports (Kapnick, 1976). What has evolved is a tension between the traditional objectives of financial reporting that communicates only the financial health of a business and those of the marginal but publicly popular holistic approach to business which moves beyond the traditional financial focus to include the environmental and social aspects.

Clearly the sustainability report is another form of business reporting however the complexity and uncertainty of sustainability defies the traditional notions of measurement and valuation; the cornerstones of accountancy (Accounting Sustainability Group, 2006). Stakeholders are interested in the impacts on the environment and society of business actions; sustainability is at odds with the accountancy and at first glance seems incompatible. There has to be a relationship between the theory and the pragmatic reality of accountancy that meets the needs of sustainability; accounting as a financial language demands that financial values must be placed upon all entries.

Accountancy standard setters must attempt to determine what the qualities of the environment and social aspects of business have value (and therefore are more *material* than other aspects). The inference from sustainability is that accountancy will be able to construct a complete impact of the nature of business; what is evident is that accountancy in its present form can not be a complete picture of a business's actions. The new evolved accountancy practices may bear little resemblance to current accountancy however until then sustainability has to be invoked to provide a more complete picture of a business's actions.

4.6 Environmental Reporting

One of the efforts to restore the credibility to the accounting process is environmental accounting; this has been endorsed by the large multi-disciplinary practices (Gilkison and KPMG, 1999), accounting academics (Bebbington and Gray, 1992; Adamson and Shailer, 1998) and the accounting professions (see IFAC, 1998 for an example of this). Environmental accounting (EA) has evolved distinct from financial accounting in that it attempts to provide an alternative to the current existing accounting practices; congruent with emerging social norms where there is meaningful public participation in business decision-making (Bebbington, 1997; Kaingu, 2002). Arguably some academics see EA as an add-on to the existing financial accounts (Lehman, 1995; Deegan, 1998) a subset of existing financial account (Schaltegger, Muller & Hindrichson, 1996; Tilt & Lubansky, 1999) or a supra set of accountings where financial accounting exists only as a subset of sustainability (Gray, 1992).

It is important to note that EA exists on many levels; globally which seeks to present a notion that the relationship between humans and the planet should be monitored to the extent that the well-being of humanity is connected physically to the well-being of the planet (adapted from Mayhew, 1996). National environmental accounts seek to do an annual reconciliation of natural resources and the impact of national policies on natural resources (Hecht, 2007).

National environmental accounts reflect the environmental and economic flows within a nation and therefore are not just presented as monetary values; physical assets are also counted. Finally environmental accounts can exist at corporate level where the focus is on the environmental performance and costs of doing business (Lehman, 1995; Jones, 2001). It is beyond the scope of this research to include global or national environmental accounting; corporate environmental accounting will instead be the focus.

The traditional relationship that business has with the community is characterised by the annual report model, in which the annual report acts as the traditional gatekeeper of the financial markets; business the major decision-maker guided by accounting standards. Furthermore, historically business has relied on the commercial law and regulation to underpin and legitimise the activities of business while maintaining their positions of power in the economy.

Environmental accounting speaks of rebalancing the power in the relationship between business and the environment; it stems from the principle that people, communities and countries have a right to know what impacts, whether they are positive or negative, that practicing business elicits (Tilt, 1997). Moreover EA speaks more of stewardship rather than ownership of the environment; a much broader concept (Jones, 2001).

It is important to distinguish EA from environmental strategies (ES); for there is much academic literature that while on its face appears to be about EA – it is in fact about ES (Miller, 1988; Yeo & Ang, 2002; Lloyd, Baginsky & Puchwein, 2006). The focus of these articles is the reduction or the elimination of the business's environmental costs incurred by operating; this is focused on identifying and attempting to cost waste streams from the production process and therefore speaks of efficiencies (Horney, Hendricksen, Lave & Matthews, 1998).

EA is a contentious subject among the academics who attempt to define it for themselves even though it has been an established area of research for more than thirty years (Gray, 2002). Most research is focused on the empirical observation and descriptive notions of environmental accounting; there is a significant failure to come up with some form of appropriate accounting standard or guidelines (Chiang & Lightbody, 2004; Lehman,

2008). More importantly accounting academics see EA as a discrete and quite separate form of accounting from social accounting (Mathews & Reynolds, 2001). Clearly the nature of environmental accounting is fundamentally different from the nature of financial accounting; therefore the accounting standard framework is largely inadequate however this does not prevent accounting researchers attempting to formulate environmental precepts (Gollhofer & Haslam, 1997; Lehman, 2008).

An example of this is Banerjee (2006) who determined that EA is

“to identify the role of accounting in measuring economically environmental activities, taking decisions on environment related issues based on cost benefit analysis, managing environmental costs, taking capital budgeting decisions based on, among others, green justification of processes and products, preparing financial statements in compliance with generally accepted accounting principles, getting the financial statements audited by an independent auditor and disclosure in financial statements to promote decision making of the stakeholders”

(Banerjee, 2006, pp. 1432).

Banerjee (2006) offers a comprehensive definition of EA that inter-weaves financial accounting terms with environmental terms – and the obvious role that the accountant would play. However determining the technical and scientific environmental activities so as to place an economic cost (within an undisclosed and yet not constructed) accounting standard so that it can be audited is dubious. Banerjee (2006) identifies the extended view of accounting takes of environmental accounting but fails to address the limitations of current accounting practices. Yakhou & Dorweiler, (2004) determined that environmental accounting has to be measured against three different forms,

- “Media: air, water, underground pollution.

- Targets: drinking water, land and habitat for endangered and threatened species.

- Global sites: oceans, atmosphere, land mass”

(Yakhou & Dorweiler, 2004, pp.66).

These media are clearly beyond the conceptual accounting framework as prescribed by current accounting standards. Moreover Yakhou & Dorweiler, (2004) go further by declaring that full environmental accounting has to be an inter-disciplinary collaboration of professionals that include

- (i) environmental science,
- (ii) environmental law and regulation,
- (iii) finance and risk management and
- (iv) management policies and control systems.

(Yakhou & Dorweiler, 2004, pp.66).

This finding was reiterated by Grinnell & Hunt (2000) who determined that an only an integrated approach would be sufficient for effective environmental accounting; that it must be an inter-professional collaboration. It is enough to note Gollhofer & Haslam (1997) look extensively at literature that determined that environmental accounting should be voluntary and determined by the pull of market forces; arguably this could be determined from the viewpoint that business would have to internalise a broad range of the environmental costs that presently are off the balance sheets (Lohman, 2008) and arguably Agenda 21 and its resultant actions have place pressure on business to consider their environmental responsibilities (Angell & Klassen, 1999).

Any mandated environmental compliance goes largely unreported (Doane, 2002), especially if there are any adverse findings. Furthermore there is the implication that any form of regulation would diminish the credibility of accountants as a professional body (Gray, 1992).

What is important is that accounting academics, the accounting profession and large multi-disciplinary practices determine that accountants have a role to play in environmental

accounting (Matthews, 1997; Lehman, 1999 Jones, 2001; Gray 2002; Gray, Walters, Bebbington & Thompson, 2004). None articulate whether this role is part of a business team. This positioning of accountants has been motivated by declarations of Agenda 21 along with the International Standardisation Organisation. ISO 14001 and ISO 19011 both speak of the audit cycle, the purpose of audit and the principles of environmental audit; audit is largely understood to be the domain of accountants.

Accountants enjoy the monopoly over the audit; actively participate in the development of business legislation. The Institute of Chartered Accountants of New Zealand Act 1996 identifies who is subject to the Institute's authority and the scope and powers of the Institute. However the debate is whether environmental audit is the domain of financial accountants.

The accountants in the expanded role as business intermediary rather than environmental accountant are not largely discussed by the accounting researchers even though it is discussed by other contesting professions (See Yakhou & Dorweiler, 2004 for an example of this). To date much of the accounting research has focused on the motivations and justifications for voluntary environmental disclosures (Deegan, 2002); however it is noted that from the accountant's perspective EA is still not mainstream (Angell & Klassen, 1999; Doane, 2002; Adams 2004). Everett & Neu (2002) declare that despite the increased academic literature legitimising and convincing the profession that progress is being made in EA, it is largely just an academic discourse.

The metrics used within voluntary EA reports are often criticised and poorly understood because for the most part, the firms are creating the metrics themselves (Doane, 2002; Marshall & Brown, 2003). This has led to a hotchpotch of metrics that lack comparability, reliability, understandability and relevance; the keystones of financial reporting. These legislative (both mandatory and voluntary) frameworks do not equate to a reporting standard (as determined by the accounting professional bodies); moreover Doane, (2002, pp. 5) criticised the audit of these reports by accountants as "loose statements that do little to provide assurance that the report is adequate".

There are many important aspects of EA that business must be mindful of; it requires business to track, organise, evaluate, and disclose environmental impacts (Bailey & Soyka,

1996). This is largely a scientific approach tempered with few legislative sanctions (often called mandated environmental accounting). At the heart of EA is the ability to construct and determine environmental risks, benefits and values (Power, 1991; Bailey & Soyka 1996). Engaging a financial accountant is superfluous; they are not seen as a critical source of environmental information nor are accountants posited as environmental analysts (Harrison & Lamberton, 2007).

The issue of scientific methodology applications in accountancy has left accountants heavily reliant on measurement and valuation; arguably accountancy is in a state of inertia (Kapnick, 1976; Parker, 2005). Scientific methodology has enabled accountancy in its infancy to make significant strides in determining the financial health of an organisation. Yet by the virtue of its success, the traditional accounting notions of measurement and valuation are borne with great difficulty; for they exclude from all serious consideration all matters that are intangible, including of course, environmental matters (and social matters as well). Clearly this establishes that the current accounting frameworks (both macro and micro) cannot support EA.

However as previously discussed, the position of the accountant as a business intermediary has achieved some significant power if only because of the accountants' location to business. The orientation of the accounting profession (along with the multi-disciplinary practices) has played an important role in creating the accountant as a business intermediary and advisor (Gooderham, Tobiassen, Doving & Nordhaug, 2004). There is little if any literature that looks at the dynamics of access between the accountant and business and the correlation of that link to sustainability learning. Sustainability is a new area of focus, business is looking for a professional to lead them through the sustainability quagmire and therefore it is not unreasonable that for accountants to take that role. It is advanced here that this is the critical nexus between accountants and sustainability; accountants are best placed to identify and serve the needs of their clients even if it is acting as a business intermediary.

4.7 Sustainability Reporting

The growth of a global communication structure (the media, publishing houses and libraries) together with the greater mobility of the world's population and increased literacy has led to greater discussion of all matters relevant to the public sphere. Anyone who has access to journals, newspapers, books, internet and such-like are able to enter into any reasoned discussion; learn and understand complex matters; more importantly the media can detrimentally influence stakeholder's perception on any given discussion or debate because the media is generally held to be the primary source of information (Robbennolt & Studebaker, 2003).

The sustainability information presented in the media plays a particularly critical role; the media are able to control and filter the information between the primary source and the stakeholders, moreover the media is able to influence any meaning of the sustainability information. This is especially true of the television and newspaper coverage; this affects the public's rating of the importance of significant sustainability issues; defines the parameters of social and environmental problems; affect the publics' view on States' (non) regulation. The media also influences the publics' fear about significant sustainability issues, the satisfaction the public has with the State regulators along with public trust. This in turn affects a range of public and personal actions with implications for communities, environmental impacts and regulatory control (adapted from Sorenson, Manz & Berk, 1998).

It is important to identify a dichotomy that exists in sustainability communication; on one hand the sustainability debate is heavily reliant on the media to provide good information flows into the public arena (Barker, 2007), framing sustainability in terms of social and environmental justice terms (Islam, 2002, pp. 2). Yet on the other hand the media is heavily reliant on information feed sources; these could be government agencies, an investigative journalist or someone such as a member of the public; this is particularly important as it determines how the media will frame a sustainability issue, the credibility of the issue and on what factors the media will justify the salience of that particular issue (Papadakis & Grant, 2001).

Papadakis & Grant (2001) identified that there was a significant 'timing' parallels between the media's coverage of sustainable (and environmental) issues and the introduction of new labour programs (at pp. 14). This raises questions about the media's independence however what is key to the media and sustainability is that mainstream media channels have taken key ideas of sustainability and placed their own gloss on the sustainability discourse. There is a significant gap in the literature that explores the relationship between the media coverage and sustainability; how the media garners support or opposition for particular sustainability issues; how the media industry can improve and increase business's (and government's) accountability by monitoring and reputational penalties (Islam, 2002, pp. 1-3). The power of the media is not academic; instead it provides a practical function.

Clearly the influence of the media on the publics' values and beliefs of sustainability is here to stay; moreover corporations ignore the media at their own peril⁹. What has evolved in more recent times is an attempt by the corporations to manage the complexity of sustainability (as it impacts upon their economic activity) and the ensuing relationships between stakeholders and the company by producing and maintaining communication channels directed at the stakeholders (Scholes & Clutterbuck, 1998). Sustainability reports is one type of communication channel that has in more recent times being taken up by an increasing number of corporations (Spangenberg & Bonnoit, 1998). Furthermore it is not an amateur written expression; rather it can be a complex document constructed as a key management function (Dolphin & Fan, 2000) which advances the corporation reputation, investor demands and the corporation's ethics (Dando & Swift, 2003, pp. 195).

Sustainability reports are becoming common currency along with the annual reports for the medium to large firm; it is considered vital for the global company (Papadakis & Grant, 2001). However the focus of the sustainability report expands beyond the notions of accountability; instead it introduces notions of competitive advantages (Porter, 1998); furthermore it attempts to create a symbiotic link between social and environmental justice to economic viability (Freeman, Pierce and Dodd 2000, pp. 89).

⁹ The incidents that concerned the Brent Spar oil rig and the Nigerian oil fields had a significant adverse impact on Shell Corporation (Post, Preston & Sauter-Sachs, 2002,, pp 51).

Corporations are determined to take the front-line view of attempting to disseminate the positive function of sustainability information directly to their stakeholders (from their viewpoint of course). Sustainability reports could be viewed as another form of corporate disclosure and if viewed from this perspective, there is a growing mountain of literature that is dedicated to the disclosure and strategic release (see Wagenhofer, 1990 for an example of this); disclosure linked to earnings (see Kasnik, 1996 for an example of this); disclosure and corporate governance (see Eng & Mak, 2003) and this list is not exhaustive.

Sustainability reporting is for the most part voluntary, distinct from mandatory reporting where State regulators demand reporting on specific issues (compliance issues such as annual financial reports). Corporations, taking on board the directives provided by government policies and information channels (as discussed in prior chapters) construct sustainability statements that to some extent show the corporation's sustainability performance. Corporations (from the producer definitional viewpoint) produce their sustainability reports from an integrated viewpoint of economic, environmental and social performance – Elkington (1998) coined this 'triple bottom line' reporting.

The nature and the extent of the sustainability reports is totally dependant upon the corporation (and therefore the management) who produces it; which raises issues of assurance and credibility (Dando & Swift, 2003). Any discussions of public trust and the confidence in corporations turns on the public's perception and evaluation of corporate actions; adverse information is invariably provided by other media channels and not the sustainability report (Leiss, 2006). Moreover the construction of the sustainability reports is dominated by sustainability indicators; frameworks that assess the sustainability performance of a firm (along all three dimensions of economic, social and environmental aspects) (Kranjnc & Glavic, 2004).

There is little or no literature that explores the relationship between the multi-disciplinary practices and the production of sustainability reports however what is clear is that all the main multi-disciplinary practices are providing sustainability advisory services (see KPMG, 20009; PWC, 2009 for examples of this). Moreover the lone accountant and the medium to small accountants do not provide sustainability advisory services. What is clear that even if specialist professions undertake some of the tasks related to a sustainability

audit (such as an environmental scientist) – for the purposes of business it must at some point be translated into the corporation's (non) financial and strategic planning.

That there is a jurisdictional struggle over which profession will dominate sustainability reporting is evident; there are other professional bodies that are also vying for the same jurisdictional territory. Sustainability reporting has motivated a role change for the multi-disciplinary practices by expanding the jurisdiction yet again of these practices; the fact that the accounting profession has not yet been able to construct an accounting standard is largely irrelevant, instead the multi-disciplinary practices are able to offer their clients a portfolio of sustainability advisory services. However if an accounting standard for sustainability reporting was created – this would legitimise and strengthen the accountant's jurisdictional claim to sustainability reporting over other professional bodies.

The result is that the multi-disciplinary practices have been able to take the normative functions of the accountant, couple them together with a raft of sustainability indicators (for the most part provided by International bodies, State regulators and industry practices) to create a 'reporting process'. There is a distinctive change from the technical and cognitive components of financial reporting to sustainability reporting however what results is a quasi-change of voluntary disclosure that the multi-disciplinary practices are able to then provide assurance for (by virtue of these practices having 'chinese walls'¹⁰).

Assurance is an interesting concept when applied to sustainability reports – assurance is the accountant's strategic heartland monopoly of a core jurisdiction (DeMaggio, 1989). The standards for sustainability are largely guided by international standards (all voluntary) such as AA1000, Global Reporting Initiative or ISAE3000; the multi-disciplinary practices are providing an extensive range of assurance services to an equally extensive range of industries. That the multi-disciplinary practices pursue and maintain this expansion of the accountant's role is underpinned and supported by the accounting professional bodies.

The accounting professional bodies give out best-practice awards which could arguably curtail encroachment from other professional bodies while promoting the

¹⁰ a notional boundary that separates divisions within a practice – so that information is ring-fenced and not shared

accounting firms (even though for the most part the multi-practice firms are not accounting firms) (see ACCA, 2008 for an example of this). Furthermore there are many academics in accounting research that are dedicated to linking the role of the accountant to sustainability reporting; Prof. Gray, Rob Matthews, Prof. Milne, Dr. Owen to name but a few. This further advances the jurisdictional expansion and role creation of the accountant into sustainability reporting.

4.8 Conclusion

This chapter noted that the accountancy profession has extended and expanded their jurisdictional scope by moving in new areas that have traditionally being held by other professions. This has been largely motivated by the large multi-disciplinary practices that are essentially inter-professional organisations that offer a constellation of different services to their clients. This has enabled the multi-disciplinary practices to move into more lucrative services. The multi-disciplinary practices has led to the development of formalised shared inter-professional decision-making however the size and reach of these firms now matches the clients that they are serving.

This has led to sub-communities within the accountancy profession; the medium to small accountancy firms and the lone accountant can not match the expansion of the large multi-disciplinary practices. Moreover the gains of extending and the expanding the jurisdiction of the accountancy profession motivated by the large multi-disciplinary practices have been strongly supported by the accountancy profession bodies; cementing the accountant as a business intermediary.

Agenda 21 identified that accountants should play an important role in the development of sustainability reporting however whilst accounting lends itself well to the core competencies of management, tax and financial accounting, the conceptual basis of sustainability is problematic for the accountancy firms. The issues lie in the nature of accountancy, which at its core is a private function that monitors measurable transactions between parties. Sustainability is by nature a public function, the parties are often not

defined and the transactions are not measureable from the accounting function point of view.

This has not prevented the accountancy academics from pursuing areas of sustainable accounting. In this chapter environmental accounting and sustainable reporting were two areas looked at. Despite the voluminous amount of environmental accounting publications this has not advanced the accountant's role in producing environmental accounts. This holds the same for sustainability reporting; there are no accounting standards that meet the needs of accountants in these areas. What has evolved instead is the multi-disciplinary practices offering a portfolio of sustainability advisory services; they are clearly using the inter-professional teams and scientific international standards (environmental and social) – coupled with the reporting process to produce a credible sustainability report. Clearly this is beyond the scope of the medium to small accountancy firms and the lone accountant.

The jurisdiction of sustainability reporting is not settled; for the most part the accountancy profession can not provide assurance for many of the sustainability matters. Moreover there are other professionals that can offer the same services and therefore the jurisdiction of sustainability reporting is unresolved.

Chapter Five

Research Methodology and Method

5.1 Introduction

As awareness grows of sustainability, there is also a shift in attitudes around sustainability and how it will impact the lives of people. The aim of this chapter is to describe the research methodology and methods adopted for this research. Strauss and Corbin (1998, pp. 3) describe methodology as “a way of thinking about and studying social reality” while methods are “a set of procedures and techniques for gathering and analysing data’. The following chapter is organised as follows:

5.2 Research Methodology

5.3 Research Method

5.4 Summary and Conclusion

5.2 Research Methodology

Adams & Larrinaga-Gonzalez (2007) note that sustainability accounting researchers seldom engage with the organisations that have to implement and manage sustainability issues. Furthermore they note that the sustainability research has an important role in improving the sustainability theory, practice and performance of organisations. Parker (2005) noted that although there have been a significant growth in the number of sustainability research publications; the numbers of active researchers working in this area are quite small.

Sustainability research methodology is anchored on the three axes of society, economics and environment, however much of the sustainability research has been concentrated within the subsets of environmental and social accounting. The question of the theoretical expansion of sustainability reporting from the individual to the public sphere and the ensuing relationship between the two is fraught with epistemological barriers. The philosophical underpinnings of sustainability are determined by the stakeholders; this determines that the meanings are fundamentally different for each stakeholder.

Accounting sustainability research is guided by insights that are gained at the individual level (case studies) and also at the organisational level; the overarching goal is to develop an accounting conceptual framework for sustainability (Gray and Milne, 2002). It is determined that sustainability and sustainability reporting requires that organisations have an understanding of environmental (scientific), social (from the individual to the public sphere) and link this to their economic performance. Gray and Milne (2002, pp. 6) note that the complexity of this form of reporting is beyond the corporation, sustainability reporting is not being taken up by firms; moreover company executives are not keen to take up sustainability reporting.

Bebbington and Gray (1999, pp. 50) determined that the primary goal of any sustainability research should be the public interest; that there must be some notional link between the research and public interest. Moreover Bebbington & Gray, (1999, pp. 51) identified survey work as crucial to move the accounting research forward. Mathews (1997) identified that sustainability reporting in the last twenty five years could be categorised as follows in Table 5.1.

Table 5.1 A Summary of the focus of Sustainability Research

Type of Research	Area that was Assessed	Focus of the Research
Empirical Studies	<ul style="list-style-type: none"> • Environmental Accounting • Social Accounting 	<ul style="list-style-type: none"> • measuring the incidence of information • Content analysis of annual reports <p><i>Disclosure was the focus of this research – predictive in its nature</i></p>
Normative Statements	<ul style="list-style-type: none"> • Environmental models • Social models • Socio-economic operating statements 	<ul style="list-style-type: none"> • attempts at quantification • attempts to equate cash flows with social and environmental impacts • identify concepts and objectives <p><i>Attempting the integration of social, environmental and financial information – what ought to be</i></p>
Philosophical Studies	<ul style="list-style-type: none"> • Environmental • Social • Financial 	<ul style="list-style-type: none"> • Justifications for research in these areas • Theoretical legitimisation of research <p><i>Attempting to integrate philosophical underpinnings from other social science areas</i></p>
Radical/Critical Research	<ul style="list-style-type: none"> • Environmental • Social 	<ul style="list-style-type: none"> • Non-traditional disclosures • Social related disclosure <p><i>Attempted to provide insights into why firms produced these types of disclosure</i></p>

(Mathews, 1997)

The methodological underpinnings of the research are determined by the fundamental philosophical and guiding strategies of research. Sustainability research falls into two broad categories, that of the scientific approach (positivism-objective) and that of naturalistic approach (nature of the information - subjective). As to which approach the researcher takes, is determined by the phenomena that is being researched. There is no general agreement among accounting researchers as to which method is better (Chua, 1986).

Watts and Zimmerman (1978) determined that positivism accounting research played an important role in determining causal relationships between business and decision-making; this was pivotal as it clearly linked accounting research to accounting practice. Chua (1986) determined that although positivism accounting research was the most favoured (it was more likely to be published) that accounting researchers became 'slaves' to positivism, limiting the type of accounting research (pp. 602). What is clear from the methodological literature is that the ontological assumptions of the research (the reality of the phenomenon) will affect the epistemological assumptions (the way knowledge is derived from that phenomenon) and this affects the way in which the research is conducted (Chua, 1986). Ontology intrinsically informs epistemology.

This research adopts a positivist approach (the scientific approach). It is considered to ontologically straight forward and settled; ontologically positivism integrates realism together with epistemology of empiricism and naturalism (Chua, 1986). The underlying assumption in this form of research is that the researcher and the respondent are divorced from each other – and therefore the research is considered objective; moreover the motivations for human nature are considered to be external to the human and therefore reality is constructed from the outside looking in (Blaikie, 2007, pp. 180). The inference from the positivist approach in accounting is that the accounting researcher is able to capture data from professional accountants in a straight forward and unproblematic way.

Positivistic research generally begins from a hypothetical statement, which attempts to express some causal relationship (which can be objectively known) and then later attempts to contextualise the reality of this relationship (the way in which the knowledge is gained from the phenomenon). Therefore positivistic research tends to seek and capture objective descriptions of the phenomenon being studied, the methods of data collection are precise and structured; the aim is to test the strength of the relationship by statistical associations (Davis, 2008). The hypothetical statement is then confirmed or rejected (or alternatively modified). The underlying assumption of positivistic research is that the research is value-free (as well as objective) and the results from such research can be easily verifiable, as well replicable (Coy, 1995). Moreover the positivism infers that a captured sample of a population can be taken to represent larger portions of the population.

The aims of this research are defined as follows:

- To construct an instrument to measure the extent and degree of sustainability reporting undertaken in NZ publicly listed companies
- To examine and explore the reasons why CFO's involve (or exclude) themselves in sustainability reporting issues
- To indicate where CFOs believe the motivations for more sustainability reporting may come from.
- To examine how CFOs become informed about sustainability

Previous sustainability studies have also sought to provide insights and understanding about the motivations for sustainability reporting (Coombes & Davey, 1994, PWC, 2002). The frameworks for these studies have been grounded in legitimacy theory, agency theory; few have used the professional jurisdictional theory to explain the incentives for the (non) adoption of sustainability reporting by organisations.

McCall, (2003) determined that the research process should include

1. identification of the problem and justify its selection
2. Literature review of the identified research area
3. Explicitly specify the hypothesis to be tested; the theoretical constructs and relationships are identified and developed at this stage
4. Explicitly specify the data which will be necessary to test the hypothesis
5. Describe the methods of data collection
6. Describe the methods of data analysis – this should determine the whether the hypothesis is confirmed or rejected

This research design as set out by McCall (2003) was for the most part followed to achieve the research objectives. It is important to note that the framework of this study was based on the earlier study by Coombes & Davey (1994) and therefore the research objectives are to study the extent and degree of involvement CFOs are involved in sustainability and sustainability reporting. Positivist research is based on the premise that it tries to explain or predict a causal relationship in relationship to the hypothesis. In this research there is no attempt to integrate a hypothesis into this research framework.

It is noted that in determining the construction of the research instrument, the areas that were included were drawn initially drawn from the work of Coombes & Davey 1994, PWC, 2002 and KMPG, 2008; the areas were then refined (with assistance of Dr. M. Fitzpatrick and Prof. Davey). This particularly area of the research design is largely subjective and therefore does not comply with the objective criteria of the positivist research framework.

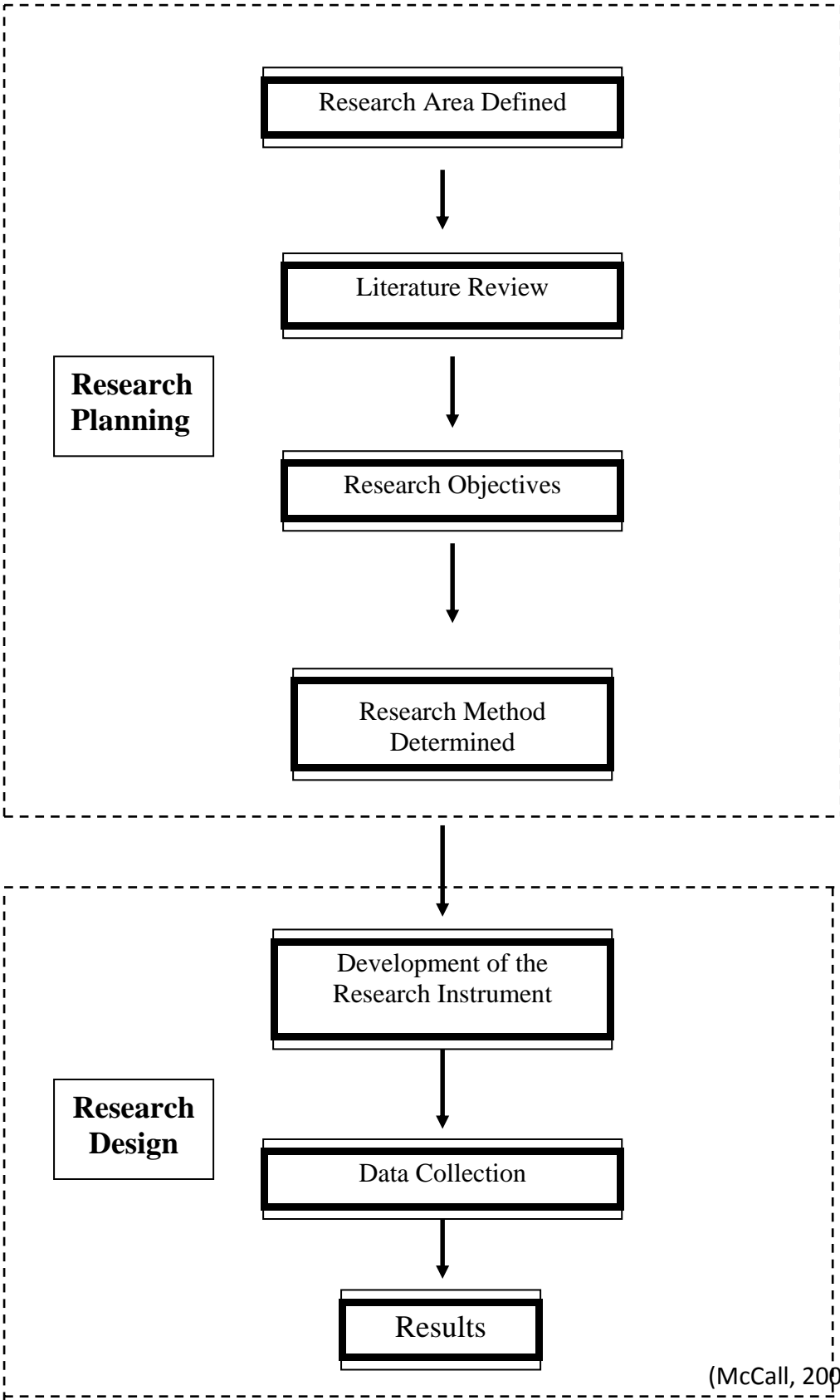
It is also noted that while there is significant sustainability literature, there is not much sustainability accounting research in the researcher's area (within the NZ setting) therefore by incorporating the subjective (and therefore naturalistic dimensions) into the research design helped to increased the validity and the

reliability of the research instrument. The subjectivity was confined to determining the areas of inclusion; in all other areas the researcher made efforts to reduce any further subjectivity all other areas of the research. The next section of this chapter describes the research method used for the thesis.

5.3 Research Method

The research method describes the process and the techniques used in for the research project. This is presented in two sections; the first giving the reader an overview of the research preparation and the second section looks at the research design. These stages are set out in Table 5.2

Table 5.2



(McCall, 2003)

The research planning took place in four stages – each of these stages are discussed further in the following sections. The research design is discussed in a further two sections.

1. Research Area Defined:

Sustainability is an interesting area; however as noted there are few research investigations that look at this area through the eye-glass of accounting. In particular there are few studies that investigate and advance the learning of CFOs engagement of sustainability; other studies have focused on more on the conceptual aspects of accounting for sustainability.

It is from this perspective that the researcher's interest lies; sustainability reporting is a relatively new area of disclosure and it is still not considered mainstream reporting. There are no accounting standards for sustainability reporting and yet businesses are creating sustainability reports. This motivated the reason for this thesis.

2. Literature Review:

It was decided from the outset because of the complexity of sustainability that the literature review be divided in three chapters. The first literature review undertook an extensive review of the contemporary sustainability literature that has been influential in creating the awareness of sustainability. A timeline was created from this literature.

The second literature review was constructed to provide an understanding to explain the increasing number of sustainability definitions that can be found. It was decided from the outset that the definition of sustainability would be left open-ended in the research instrument; the inference that any provided definition could present an influential prejudicial bias in light of the fact that there are so many other definitions in the public domain. At the end of this chapter a table was constructed that contained of sustainability characteristics.

The third literature review was focused on the accountancy profession and its interface with sustainability. It particularly focused on the jurisdictional challenge of sustainability; the accounting challenges of sustainability and the accountancy profession's response to these challenges.

These literature reviews informed the construction of the research objectives and ultimately the research instrument.

3. Research Objectives:

CFOs have a combination of professional qualifications, business experience and competencies to undertake the financial management functions required (Treasury Board of Canada Secretariat, 2009). However CFOs are considered to business professionals with a significant amount of accounting and financial education if only for the fact that the CFOs answer to the Board of Trustees instead of a professional body (Sunder, 2007). Their qualifications may embrace accounting, finance and risk management along with other management skills.

CFO positions in large corporations are in short supply across the globe with few accounting and financial professionals ever attaining the position (Rennick & MacDonald, 2009). One the desired traits of CFOs apart from being a professional and honest – is being commercially up-to-date and aware of any trends and changes in the business environment (The Institute of Chartered Accountants in Australia & KPMG, 2007). The modern CFO is required to be more sophisticated and required to wear the multiple hats.

CFOs are required to meet earnings targets and come up with budgets; aggressively pursue the interests of the firm by finding innovative ways to raise capital (stewardship role); find innovative ways to measure and record the firm's performance on value-based-management – (value-adding functions)(The Institute of Chartered Accountants in Australia & KPMG, 2007). The modern CFO is supported by high-performance teams; underpinned by strong leadership, sound communication and people management skills. This has resulted in the CFO

becoming increasingly involved with non-financial and non-accounting matters (The Institute of Chartered Accountants in Australia & KPMG, 2007).

There have been very few recent studies that have investigated CFOs' attitudes and awareness of sustainability in publicly-listed company setting; instead there has been more focus on the sustainability practices of NZ business (Colins, Lawrence & Roper, 2007). A 1994 study undertaken by Coombes and Davey demonstrated that CFOs were not committed to environmental accounting and sustainability issues; instead the focus was on the efficiency and effectiveness of the business transaction. They were no more supportive of environmental and sustainability accounting than business in general. From this context it is interesting to see how CFOs' own reported objectives have changed in the intervening time period.

Studies like the one presented here, that explore CFOs' attitudes and awareness of sustainability are necessary given the lack of research in this area and in New Zealand particularly. Other studies have identified the challenges faced by CFOs have changed over time as the dynamic of the business environment has changed. The Institute of Chartered Accountants (Australia) and KPMG (2007) determined that there has been a real shift from the CFOs' need to be more like business partners in the late 1990's to more emphasis of CFOs improving stakeholder communication in 2004 (pp. 9).

Large corporations are easily the first to respond to changes in the business environment. It is from this viewpoint that CFOs, at the helm of NZs' largest corporations are more likely to be exposed to sustainability and therefore a desired cohort to survey. The main objectives as previously identified were as follows:

- To construct an instrument to measure the extent and degree of sustainability reporting undertaken in NZ publicly listed companies
- To examine and explore the reasons why CFO's involve (or exclude) themselves in sustainability reporting issues

- To indicate where CFOs believe the motivations for more sustainability reporting may come from.
- To examine how CFOs become informed about sustainability

It is noted that there is difficulty in gaining access to CFOs of publicly listed company however there are greater difficulties in obtaining data from private firms. This is discussed further in the latter part of this chapter.

4. Research Method Determined:

A preference survey was opted for because preference surveys are easily developed and used where the respondent is asked to express an attitude and personal preferences; these influence their decision-making around a particular subject (Newstead, Huff & Munro, 1998). The researcher can determine any values and relationship between any constructs used in the survey. Respondents in attitudinal surveys are often asked to rank or prioritise and identify preferences and resultant generalisations can then be concluded.

It was more desirable to assess the attitudes of the CFOs in a empirical way so representational statements were constructed; ranking the CFOs preference ordering with a 5 point Likert scale. A Likert scale is one of the most common methods of measuring attitudes.

There is the concern that the preference statements will produce acquiescence and that the respondents will agree with the statements presented to them (Shuman and Presser 1981, pp. 203). There has been much in the literature that supports this finding; however this tendency has been largely identified in poorly educated people who tend to be uncritical of preference statements and therefore also tend to be suggestible (Shuman and Presser 1981, pp. 204). This is not considered to be of concern in this research.

The values of "strongly disagree," "Moderately disagree," "Neither agree or disagree", "Moderately agree," and "Strongly agree" of the Likert scale are ordinal values that are able to provide a respondent's strength of preference over and above a simple binary response (Yes/No). Moreover the respondents are able to provide varying degrees of support or opposition to a framed statement (assuming that the statements do not exhibit bias preference symmetry) (Yamagishi & Miyamoto, 1996).

Despite keeping the preference statements as simple as possible – there is the concern that response asymmetries imply that the respondents have used different weighting factors to determine their preference (Shafir, 1993). The wording of preference statements has been the centre of much literature attention (Reuband, 2003; Glendall & Hoek, 2002). The issue lies in that some respondents may have poorly crystallised attitudes towards sustainability and therefore are most influenced by wording of the statement and therefore tend to incline toward some intermediate position (Noelle-Neumann and Köcher 1993, pp.558). The solution offered by the literature is to make the preference statements explicit (to the point) rather than implicit; the danger of response bias is considerably reduced and the respondent is less likely to be acquiescent (Sudman and Bradburn 1982. pp 139).

The previous chapters have demonstrated that there has been a vast amount of research in the area of sustainability. More recent survey research from other countries has particularly sought to identify CFOs' attitudes to sustainability (CFO Research Services, 2008; PWC (Australia), 2008). This research instrument is developed to view the CFOs' attitudes within the organisation and from a national perspective.

Several important criteria were established to guide the development of the research instrument. It was determined that the research instrument;

- It must be no longer than 20 questions in total to prevent survey fatigue

- It must compromise a set of specifically selected areas in sustainability on the basis on what is perceived to be relevant to CFOs of NZs' largest firms derived from the literature review
- It must possess a meaningful, attention-getting, user-friendly format.
- It was determined that personal follow-up interviews would provide some measure of robustness to the research and so this was added at the end of the research instrument.

The development of the research instrument is discussed in Chapter Six and a copy of the research instrument can be found in Appendix One. The research instrument was tested on 10 different respondents (some being academia staff of the University of Waikato and others outside the University) over a period of three days and some minor changes to the wording and format were made. The final draft was sent before the University of Waikato Management School Ethics Committee where approval was granted.

5. Data Collection:

The difficulty of getting access to CFOs of privately owned firms is noted therefore it was decided to limit this research to publicly listed firms. The CFOs list was constructed from the NZX Stock Exchange list (NZX, 2008). There were 126 firms that were listed, of which 88 were eligible for the study (the others were eliminated as they contracted out their financial services, had no CFO or they were shell companies of foreign companies).

All the resultant firms were telephoned privately to personally ask the respondents (or their delegates) for their approval to participate in the research study. Of this number a further 3 were eliminated because the firms de-listed from the NZX and a further 19 declined to participate. This resulted in 66 companies.

An on-line format for the survey was initially selected for the ease of delivery and the ability for the CFOs to click their way through the survey. However difficulties arose from this method of delivery when the respondents attempted to access the research instrument; the least being that NZs' largest corporations have high-tech firewalls that prevented the research instrument from functioning correctly. A number of reminder emails were sent to the respondents however the technical difficulties endured.

Any attempt by the IT Department to ameliorate this dysfunction was largely superfluous and over a period of 6 weeks and after trying a range different formats of on-line survey delivery - only 18 useable or partly usable surveys had been retrieved. The ability to perform personal interviews was lost in the technical difficulties and so this aspect of the research instrument was abandoned.

It was then determined that as the technical difficulties were terminal that a postal survey should be conducted instead. The researcher then endeavoured to call the CFOs again personally to ask their approval to participate; unfortunately during this time a number of the CFOs became unavailable due to business pressures. Finally 34 useable or partly useable responses were achieved.

6. Results:

The results are presented in Chapter Seven. The aims of these results are as follows:

- to report a statistical analysis of the respondents answers on a section by section basis (therefore question by question basis)
 - to make a statistical analysis between the question matrices to determine the extent that sustainability reporting is (not) undertaken in NZ
 - to discuss the results in terms of causal relationships
 - to determined if what informs the CFOs about sustainability
 - to determined if any correlation exists between the CFOs engagement with sustainability and the production of a sustainability report

5.4 Summary and Conclusion

This chapter explored the methodological issues that underpinned this research project and the methods that were used to undertake this research. This research takes the positivist approach and for the most part is grounded in the mainstream accounting research area of scientific approach. However it was noted that some subjectivity was also employed in the research to add to the robustness of the research instrument.

The structure of the research design follows the frameworks of initially Coombes and Davey (1994) and later by PWC (2002). The subsequent process of the research planning and design is followed throughout this chapter. While for the most part the research process was followed carefully and the prudence applied; the collection of the data for this research was largely problematic. It is from this viewpoint it is concluded that the research could not be declared to be completely objective nor completely value-free. None-the-less careful research process and validity were applied diligently through the research planning and research design phases (which included the data collection stage) to ensure the reliability of the results.

Chapter Six

The Development of the Research Instrument

6.1 Introduction

This chapter aims to describe the process by which the research instrument was developed. The objective of the instrument was to identify CFO's attitudes to sustainability; to identify what they believe to be the drivers and barriers of sustainability; how they learn and understand what sustainability to be and who, if any, produces the sustainability reports; what challenges embeds and advances sustainability reporting.

Sustainability reporting is now a corporate buzzword even though it is difficult to define. The motivations for the production of sustainability reports are diverse however there are more companies than ever producing sustainability reports (Liebs, 2007). This chapter is arranged as follows:

6.1 Introduction

6.2 The development of the research instrument

6.3 Summary and Conclusion

6.2 The development of the research instrument

The development of the research instrument involved looking specifically at four major aspects of sustainability. The first part of the survey explores the CFOs attitudes to sustainability adoption; what the CFO perceives to be the barriers and drivers of sustainability (both personal and national). Therefore a significant part of the developing this section of the research instrument involved identifying what the CFOs perceived to be as drivers and barriers to sustainability and to what extent this impacted upon their organisation's adopting and embedding of sustainability. Holmberg & Samuelsson (2005) determined that how sustainability is defined would determine what drives and prevents sustainability adoption. The success of corporations aligning with sustainability practices

are many fold and significant (West Virginia Department for Environmental Protection, 2005).

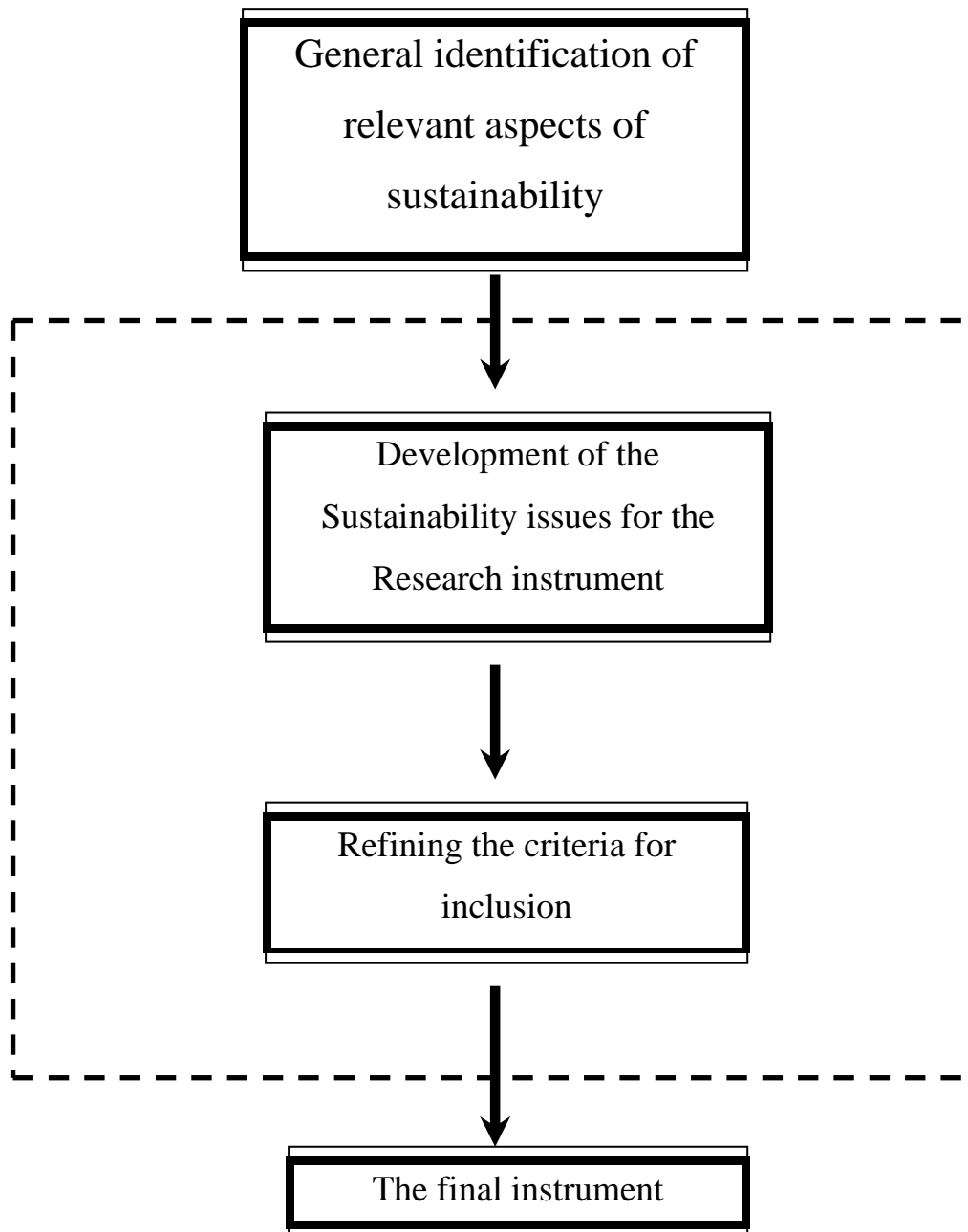
The second part of the survey explores sustainability reporting; who produces a sustainability report for their firm. Collins, Lawrence & Roper, (2007) declare that although there is increased media and government attention given to sustainability issues, few NZ corporations actually produce sustainability reports (pp. 2). Moreover few NZ companies felt pressure to undertake sustainability reporting (Collins, Lawrence & Roper, 2007, pp. 3).

The third part of the survey explores where CFOs source information about sustainability. While several studies identify informational gaps in sustainability (Collins, Lawrence & Roper, 2007; PWC, 2007), none seeks to define where firms are currently sourcing their information. There is a distinctive lack of research in this particular area.

Finally the last section of the survey explores what the CFOs consider to be the challenges of embedding and advancing sustainability as a normal part of business functions. This section of the research instrument looks particularly why and why not corporations are implementing practical solutions for sustainability.

The rest of this section is organised as follows:

- 6.2.1 General identification of relevant aspects of sustainability
- 6.2.2 Further development of the sustainability issues for the research instrument
- 6.2.3 The final instrument

Figure 6.1: The Stages in the development of the Research Instrument

6.2.1 General identification of relevant aspects of sustainability

The framework for this research work is derived from the literature review which identified that as an awareness of sustainability issues have developed, recognition plays an important part of the sustainability process; the outcomes of sustainability are

inherently influenced by understanding (linked to their source information) and the beliefs the respondents form).

Chapter Two presents the growing awareness of sustainability – linking the issues of sustainability to the activities of man from various seminal literature documents. Chapter Three presents the difficulties in trying to settle on one main definition and identifies the threads that weave together the carpet of sustainability. The threads were scientific, political, economic and indigenous; key to this research is to explore from where CFOs learn about sustainability and from which source. From this a substantive list was created. Table 5.1 presents the substantive issues that are explored in the survey.

Selection of individual issues to be included in the research instrument was derived from the literature and also by reviewing other previous studies (Coombes & Davey, 1994; PWC, 2007; Colins, Lawrence & Roper, 2007). This process lead to the identification of a substantive attitudinal list of sustainability issues; the research instrument presents a multidimensional view of CFOs attitudes in their professional roles.

Table 6.1 Issued Explored in the Survey

Issues Explored in the Survey		
<i>Issue No.</i>	<i>Description</i>	
1	Sustainability adoption	Identifies the national and organisational drivers and barriers to sustainability
2	Sustainability reporting	Identifies if a sustainability report is being produced and by whom within the organisation
3	Sources of information for sustainable development	Identifies which sources are important for learning of sustainability and the satisfaction with the sources used
4	Challenges of embedding and advancing sustainable development practices	Provides preference statements to determine what aspects of sustainability are enhance or deter sustainability

6.2.2 Further Development of the Sustainability Issues for the Research Instrument.

In the first instance the aim of the research was to identify what CFOs considered to be drivers and barriers for sustainability (*Issue 1*); an extensive list was constructed that covered the four areas identified in the literature of scientific, political, economic and indigenous. It was determined that the indigenous aspect of sustainability was beyond the scope of this research (even though it was included for completeness into the literature review) so it was excluded in the survey.

Table 6.2 Preliminary List of Sustainability Adoption - Drivers

Scientific (Environmental)	Economic	Political (Social)
Efficiencies gained	Shareholder satisfaction	Law and regulation
Technological driven	Business opportunities	Employee recruitment
	Prosperity of business organisation	Organisational culture
	Industry driven	International pressure
	Efficiencies gained –cost cutting and profit gains	Corporate governance
	Organisational governance driven	Best practice code drivers
	Access to capital	

Table 6.3 Preliminary List of Sustainability Adoption - Barriers

Scientific (Environmental)	Economic	Political (Social)
Difficulty in determining the environmental impact – timeline issues	Business bears the cost	Lack of expertise knowledge
	Unrealistic expectations	Lack of institutional support
	Illimitable definition of stakeholder	No guidance or standards for sustainability reporting
	Numbers adopting Sustainability Reporting are low	Not a top priority for NZ
	Free-riders undermine sustainability practices	
	Consumers have little understanding of the difficulty of sustainability adoption	

There was clearly an overlap between some of the threads; some that clearly had similar meanings and these were either combined together or the irrelevant items deleted.

It was determined that because the lists were clearly relevant to the national and organisational viewpoints – it was decided to construct two matrices; one that addressed the drivers and the other addressing the barriers of sustainability. Along with 5 point Likert scale – a two-stage process was applied to the preference statements.

In the first stage the respondents were asked what they considered to be the national drivers/barriers of sustainability and then in the second stage the respondents were asked to rank the same preference statements to the extent that they were important for their organisation.

The statements were purposely kept brief (less than a dozen words for the most part) and they were randomly placed into the matrices so that there was no obvious order (of economic, political or scientific). The wording of the statements were kept as largely

neutral, an attempt to reduce any acquiescence bias. The wording and order of the statements were reviewed by Dr. M. Fitzpatrick¹ to check for completeness.

The second aim of the research instrument was to establish if the CFOs' organisation produced a sustainability report (*Issue 2*) – this was produced initially as a simple binary (Yes/No) question. However it was determined that media influence could determine whether the report is released publicly; this was identified in Coombes & Davey (1994). There a differentiation between internal use and external use was made in this question. The other two questions in this section sought to determine why (by whom) and why not sustainability report was produced.

Again the these questions were informed by the literature review which determined that while more firms were producing sustainability reports generally, Collins, Lawrence & Roper (2007), determined that few NZ corporations were producing sustainability reports. The criteria as to why corporations were not producing sustainability focused on three areas as set out in 6.4

Table 6.4

Issue	Description
Demand	Stakeholder demand
Guidance	Lack of conceptual guidance
Expertise	Lack of senior management commitment

Furthermore the literature review established that sustainability is considered to be an inter-professional discipline; that the jurisdiction of sustainability reporting has not yet being settled. Therefore the final question sought to identify who in the organisation championed sustainability; therefore the criteria for this question focused on three areas.

¹ Senior Lecturer , Department of Marketing, Waikato Management School, University of Waikato.

Table 6.5

Issue	Description
Sustainability Championed in the Firm	Individual
	Team
	Management
	Compliance
	Not sure

These questions seek to further the support current literature or determine if there has been a change in this area.

The third aim of the research instrument sought to establish where the CFOs gained information about sustainability (*Issue 3*); how they learned about sustainability for their organisations; as already stated there is a significant lack of research in this area. The implication from this question is that more informed CFOs with more pro-sustainability attitudes would be more likely to produce sustainability reports.

The issues for this question were identified by viewing a series of on-line library surveys (Birmingham City University, 2008; Monash University, 2007; American University of Beirut, 2008). The focus of these institutions is the provision and source of data information. The initial list was based on the services provided by the libraries; then deleting items that were irrelevant; adding a business industry focus and then including government sources, refined this list.

Table 6.6 Sources of Information

Library Items	Business Industry	Government Information Providers
Reference sources	Industry advisor	Government Organisation
Database	Sustainability Advisor	Ministerial Office
Internet	Conference	
Books	Workshops	
Journals	Non-government Organisations	

Measuring the respondent's satisfaction with the sources concluded this section; there is a school of thought that it can be easily determined by a single binary (Yes/No) question (Roth, 1998). However the focus of most satisfaction survey questions is client repeat business and marketing rather than management implications (Oliver & Swan, 1989). It was considered that a 5-point Likert scale was more appropriate because the answer can be evaluated exploring the mean differences in the respondents' answers (Dolinar & Grun, 2007).

The fourth aim of the research instrument was to explore what CFOs considered to be the challenges of embedding and advancing sustainability (*Issue 4*). The material used to construct the statements was directly derived from the Chapter Four literature review that looked specifically at the motivations for producing sustainability reports and the reporting issues. The issues identified in this section fell within distinct areas.

Table 6.7 Challenges for Embedding and Advancing Sustainability

Issue	Description
Disclosure Aspects	Stakeholder Value
	Reputation value
Financial Aspects	Improved Performance
	Improved Capital Investment
Conceptual Aspects	Conceptual Reporting metrics
	Complexity of the Sustainability

A number of different approaches exist for the selection of multi-attribute preference statements – the underlying notion is that preferences support any decision-making activity (Dimopoulos, Moraitis & Tsoukias, 2006). The language used to construct the statements and the order of the statements can influence the respondent's perception of the statements; beyond the context of the statement. Therefore the statements were constructed to examine the extent to which variations in the statement language would differentially affect the respondents' decision-making.

These statements were complete, full sentences that reflected the three issue areas identified in the criteria. Two statements were developed from each area; each statement of each couplet reflected opposite views of the same issue.

6.2.3. Final Instrument.

The final instrument consisted of 20 questions, which were divided into the five main sections; this included the demographic section as well (Section A). The final instrument was clearly divided into the five sections – with each section clearly labelled to provide the respondent with a road map through the research instrument.

Section B: Sustainability Adoption

The drivers to sustainability adoption were captured in 15 short statements. The statements were constructed into 2 sets of matrices. The respondent was first asked to evaluate their level of agreement or disagreement with each statement from the national level. The respondent was then asked to evaluate their level of agreement or disagreement with each statement from their organisational level. The statements are shown below in Table 6.6

Table 6.8

Law and Regulation enforce 'Sustainable Development'
Adopting 'Sustainable Development' is vital for employee recruitment.
The concept of 'Sustainable Development' has become the agent for change within organisations
Following 'Sustainable Development' principles provides sound business opportunities
Stakeholders are demanding 'Sustainable Development' practices
'Sustainable Development' drives good corporate social responsibility
Adopting 'Sustainable Development' principles will lead to a prosperous and sustainable economy now and in the future
Adopting 'Sustainable Development' principles encourages cost-effective and clean technologies
There is a 'Sustainable Development' trend within industry
Sustainability Reports showcase best practice
International bodies compel NZ business to consider 'Sustainable Development' practices
Adopting 'Sustainable Development' principles makes good business sense as costs are cut and profits are improved
Adopting 'Sustainable Development' principles enhances the organisation's reputation
The CEO/Board of Directors are driving the adoption of 'Sustainable Development' principles
Producing a Sustainability Report makes a difference when accessing financing capital

The barriers to sustainability were captured in 13 short statements. These second sets of matrices were fashioned identically to the first set of matrices. The respondent was asked again to evaluate their level of agreement or disagreement with each statement from the national level. The respondent was then again asked to evaluate their level of agreement or disagreement with each statement from their organisational level. The statements are shown below in Table 6.9

Table 6.9

Business bears greater cost to adopt 'Sustainable Development' practices
There is a need for unbiased respected referees in the 'Sustainable Development' arena
The concept of 'Sustainable Development' creates unrealistic expectations of business
There is little institutional support for 'Sustainable Development' in New Zealand
There is neither clear guidance nor standards on how 'Sustainable Development' should be adopted.
There is an ever growing wider circle of stakeholder responsibility that is hard to define
'Sustainable Development' timelines are difficult to determine
The 'Sustainable Development' adoption here in NZ seems just a drop in the ocean
'Sustainable Development' is not perceived as a top priority
Sustainable alternatives are often more costly and less convenient
There is a lack of reliable information and feedback to encourage 'Sustainable Development' practices in New Zealand
Free-riders ultimately undermine the 'Sustainable Development' process
Consumers are unaware of the difficulties of implementing 'Sustainable Development' practices

Section C: Sustainability Reporting

This section consisted of three questions – the first question road-mapped whether the all three questions were answered or just the first and last question. The first question was framed to determined if the firm produced a sustainability report

Table 6.9.1

Yes – published for external use to the public
Yes – Published for internal use only within the organisation
No

If the respondent answered ‘Yes’ in either parts of this first question of section – they were directed to the third question of this section – leaving out the second question. The second question dealt specifically with the CFOs who corporation did not produce a sustainability report. The respondent was directed to a series of statements in an attempt to identify why their company did not produce a sustainability report.

Table 6.9.2

Currently there is no stakeholder demand for a Sustainability Report
There is no clear guidance on how to produce a Sustainability Report
There is no clear business case for a Sustainability Report
There is no senior management commitment to produce a Sustainability Report

Finally in this section the third question focused on who was the progenitor of the sustainability report.

Table 6.9.4

A specific team dedicated to Sustainable Development
A specific person dedicated to Sustainable Development
No particular team or person – our firm just does it
Not sure

Section D: Sources of Information for Sustainable Development

This section of the research instrument was informed by library user surveys and from this viewpoint it was important to rank the sources of information. Rather than get the respondent to prioritise the sources of information; the respondent was asked how important or not important each source of information was.

Table 6.9.5

Ask a Sustainability Advisor
Use a Government Organisation (e.g., a ministerial department such as Ministry of Economic Development or MAF)
Use the Internet (e.g., Google or MSN)
Use a database
Ask an industry advisor
Use a Non-Governmental Organisation
Journals (printed or electronic)
Reference sources (e.g., encyclopaedias, handbooks etc.)
Books (printed or electronic)
Workshop
Conference

Colins, Lawrence & Roper, (2007) identified that corporations wanted to seek more information about sustainability. From this viewpoint the last question in this section sought to determine the satisfaction level of the respondents.

Section E: The Challenges of Embedding and Advancing Sustainable Development Practices

This section comprised of 6 full statements that looked specifically at the motivations for sustainability reporting – the three identified criteria were disclosure, financial aspects and conceptual aspects. From these three criteria – two couplet statements were captured to reflect each criteria (total of 6 statements). The respondent was asked to evaluate their level of agreement or disagreement with each statement. The statements were as follows:

Table 6.9.6.

Disclosure:

a. Without objective disclosure of corporate, social and environmental performance, investors, consumers and prospective employees are left guessing when it comes to factoring these matters into their decisions.

b. To meet stakeholders' information needs, a company needs to go beyond internal management and put its Sustainable Development performance record out for public scrutiny.

Financial Aspects:

c. The benefits to companies who include Sustainability Reports together with their financial performance outweigh the costs

d. People who have access to better information through Sustainability Reports will make better investment, purchasing, advocacy, and employment decisions

Conceptual Aspects:

e. Sustainability Reports are too generalised and too complex to provide useful information.

f. Sustainable Development policies need to provide simple and practical reporting strategies and methods.

6.3 Summary and Conclusion

The purpose of this chapter was to present the process used to construct the research instrument. The research instrument was then reviewed by both accounting and marketing academics from the University of Waikato to increase the validity of the questions present in the research instrument.

The research instrument comprised of five main categories:

- Section A: Background Information
- Section B: Sustainability Adoption
- Section C: Sustainability Reporting
- Section D: Sources of Information for Sustainable Development
- Section E: The challenges of embedding and advancing sustainable development practices.

Criteria for the inclusion of the questions were determined from the literature review and from prior studies in similar areas. As there was a lack of research, which identified important sources of information for the respondents, knowledge was drawn from library user research. The full research instrument is found in Appendix One. The results and the discussion on the assessment of the research instrument are discussed in the following chapter.

Chapter Seven

Results and Discussion

7.1 Introduction

This chapter presents the results and the ensuing discussion obtained by the research instrument. The prior chapter discussed the development of the research instrument and in particular identified the four issue topics that were then developed into four separate sections of the research instrument (the initial section covered the demographic information of the respondents). The rest of this chapter is organised as follows.

7.2 Initial Results of the Background Information

7.3 Analysis of Sustainability Adoption

7.4 Analysis of the Sustainability Reporting

7.5 Analysis of the Sources of Sustainability Development

7.6 Analysis of the Challenges of Embedding & Advancing Sustainable Development Practices

7.7 Summary and Conclusion

7.2 Initial Results of the Background Information

A survey of the NZs' top publicly listed companies (2008) was undertaken, initially as an on-line survey, and later as a postal questionnaire. The survey was based for the most part on the work of Coombes and Davey (1994) and then later PWC (2002). The finished survey was tested by academia within the University of Waikato and by respondents outside of the University; it was then refined and the resultant survey was used in the research (see

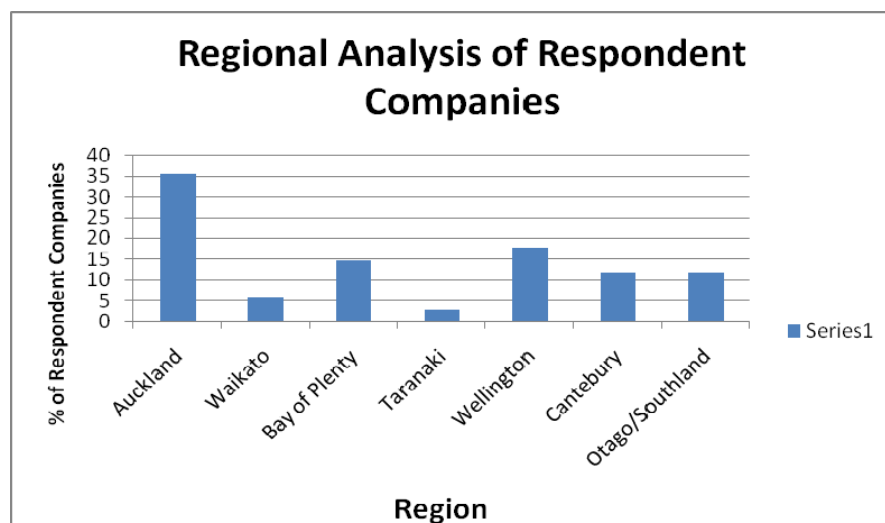
Appendix One for the finished document). The initial results from the survey were entered into an excel spreadsheet database and the first set of results concentrated on the first section of the survey (the background information).

From the 126 organisations that were listed on the NZX Stock Exchange, only 70% (88) were eligible for inclusion in the research study. From those approached – 75% (66 of the 88) agreed to participate. Of this number 52% (34) useable or partly usable replies were obtained. This represented a total of \$12,853 billion in annual revenues; the top company earning more than \$7 billion - (74% (25) of the CFOs responded to the annual income question). 15% (7) of the companies earned more than \$100 million dollars and 13% (6) of the companies earned more than \$50 million and less than \$100 million. The firms that earned the most were also all the firms who had been operating for more than 20 years (59% - 20). The regional spread of the companies is listed in Table One. The majority of the companies were based in the Auckland region followed by Wellington region.

Table 7.1 Regional Areas of the Respondent Companies

Region	Count	%
Auckland	12	35%
Waikato	2	6%
Bay of Plenty	5	15%
Taranaki	1	3%
Wellington	6	18%
Cantebury	4	12%
Otago/Southland	4	12%
	34	100.

Chart 7.1 Regional Analyses of the Respondent Companies



The analysis of the industry categories revealed that the majority of the firms were outside the list provided – 33% (11). These were all health firms except for 1 and significantly outnumbered the next closest groups which were Retail and Wholesalers 15% (5) and Banking and Finance 12% (4). The results of this question are in Table 2.

Table 7.2: Industry Analysis.

Industry of Company	Count	%
Agricultural Products	3	9
Banking and Finance	4	12
Food (Processed), Beverages	1	3
Investments	2	6
Manufacturing	3	9
Oil, Gas, Electricity	2	6
Retailers and Wholesalers	5	15
Transport	2	6
Other	11	33
(1 failed to answer)	33	100.00

More than 59% (19) of the CFOs that responded worked in organisations that employed more than a 100 staff; of the remaining groups 16% employed more than 50 and less than a 100 staff. The results are in Table 3.

Table 7.3: Employee Analysis

Number of Employees	Count	%
10-19	4	13%
20-29	2	6%
30-39	0	0%
40-49	2	6%
50-100	5	16%
More than 100	19	59%
(one failed to answer)		
	32	100.00

Of the companies in this research project, 50% (17) have both international and national markets, 47% (16) solely national markets and 3% (1) that operates in an international market only.

There were 18% (6) of the CFOs who were female, of these 2 were in the 25-35 year old range (the youngest of all the CFOs); the other 4 were in the 36-45 year range. In contrast male CFO's consisted of 82% (28) of the group – of which 71% (24) were in the age 36 – 56 age group. 12% (4) of the CFOs were older than 56 years of age.

7.3 Sustainability Adoption.

Drivers for Sustainable Adoption

CFOs were asked to give their views on what they perceived to be the drivers to sustainability, initially in a national context and then secondly within their own organisations. The two following tables are presented below.

Table 7.4: National Drivers for Sustainability

Statement	Disagree	Agree	Mean	Mode	STDEV
Law and Regulation enforce 'Sustainable Development'	29%	47%	3.15	4	1.02
Adopting 'Sustainable Development' is vital for employee recruitment.	45%	24%	2.64	3	1.03
The concept of 'Sustainable Development' has become the agent for change within organisations	24%	48%	3.18	4	0.95
Following 'Sustainable Development' principles provides sound business opportunities	9%	55%	3.45	4	0.90
Stakeholders are demanding 'Sustainable Development' practices	27%	45%	3.18	4	1.04
'Sustainable Development' drives good corporate social responsibility	6%	76%	3.94	4	0.83
Adopting 'Sustainable Development' principles will lead to a prosperous and sustainable economy now and in the future	15%	64%	3.61	4	0.90
Adopting 'Sustainable Development' principles encourages cost-effective and clean technologies	27%	48%	3.24	4	1.00
There is a 'Sustainable Development' trend within industry	0%	63%	4.39	4	3.25
Sustainability Reports showcase best practice	16%	28%	3.09	3	0.86
International bodies compel NZ business to consider 'Sustainable Development' practices	36%	30%	2.94	3	1.03
Adopting 'Sustainable Development' principles makes good business sense as costs are cut and profits are improved	45%	24%	2.73	2	1.01
Adopting 'Sustainable Development' principles enhances the organisation's reputation	9%	79%	3.85	4	0.91
The CEO/Board of Directors are driving the adoption of 'Sustainable Development' principles	33%	30%	2.97	3	0.92
Producing a Sustainability Report makes a difference when accessing financing capital	59%	6%	2.19	3	0.93

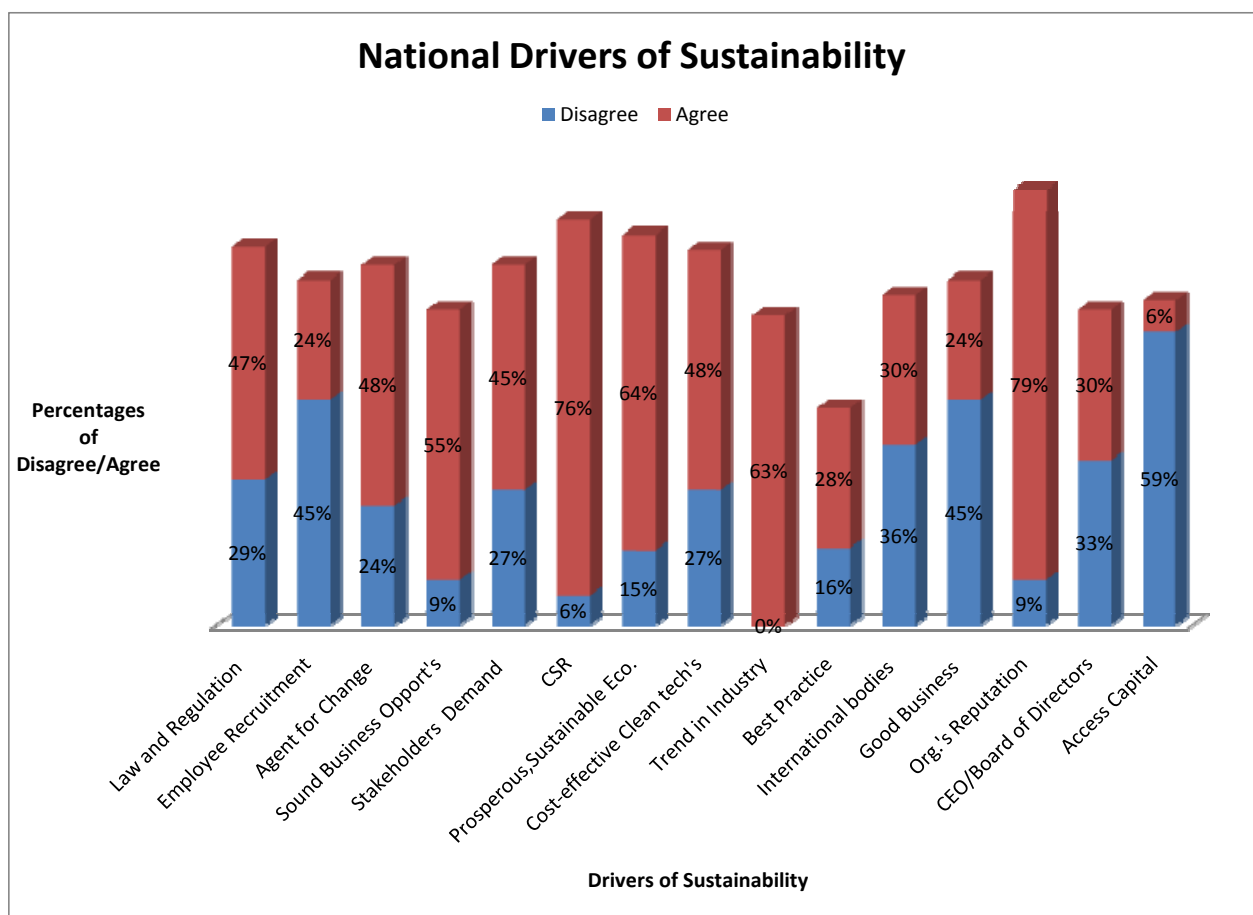
Table 7.5: Organisational Drivers for Sustainability

Statement	Disagree	Agree	Mean	Mode	STDEV
Law and Regulation enforce 'Sustainable Development'	29%	38%	3.12	3	1.07
Adopting 'Sustainable Development' is vital for employee recruitment.	58%	21%	2.45	2	1.12
The concept of 'Sustainable Development' has become the agent for change within organisations	45%	21%	2.64	3	1.06
Following 'Sustainable Development' principles provides sound business opportunities	24%	42%	3.15	4	1.06
Stakeholders are demanding 'Sustainable Development' practices	36%	30%	2.76	3	1.09
'Sustainable Development' drives good corporate social responsibility	21%	58%	3.45	4	1.20
Adopting 'Sustainable Development' principles will lead to a prosperous and sustainable economy now and in the future	25%	31%	3.09	3	1.12
Adopting 'Sustainable Development' principles encourages cost-effective and clean technologies	24%	33%	3.09	3	0.98
There is a 'Sustainable Development' trend within industry	33%	45%	3.06	4	1.17
Sustainability Reports showcase best practice	42%	24%	2.58	3	1.12
International bodies compel NZ business to consider 'Sustainable Development' practices	52%	27%	2.52	4	1.15
Adopting 'Sustainable Development' principles makes good business sense as costs are cut and profits are improved	33%	21%	2.76	3	0.94
Adopting 'Sustainable Development' principles enhances the organisation's reputation	24%	58%	3.42	4	1.23
The CEO/Board of Directors are driving the adoption of 'Sustainable Development' principles	36%	33%	2.91	3	1.13
Producing a Sustainability Report makes a difference when accessing financing capital	56%	6%	2.09	1	1.03

Comparatively, the CFOs believed that the national drivers for sustainability were stronger than the organisational drivers; with the highest national driver being that the organisational reputation can be enhanced (79%) as well as driving good corporate governance (76%). This was closely followed by sound business opportunities (55%), the concept of sustainability is driving change within organisations (48%) and that it is driving

cost-effective and clean technologies (48%). Most CFOs did not believe that sustainability reporting could improve access to finance (59%) nor would it assist with employee recruitment (45%) or cut costs and improve profits (45%). About one third of the CFOs believed that there was international pressure on NZ to adopt sustainable practices (30%); a slightly higher number believed there was not (36%). However there was a clear signal that regulation was also a strong national driver of sustainability (47%) and that sustainability was nationally motivating change within organisations (48%). Stakeholders are also seen as a national driver of sustainability (45%) was trends within the industries (63%).

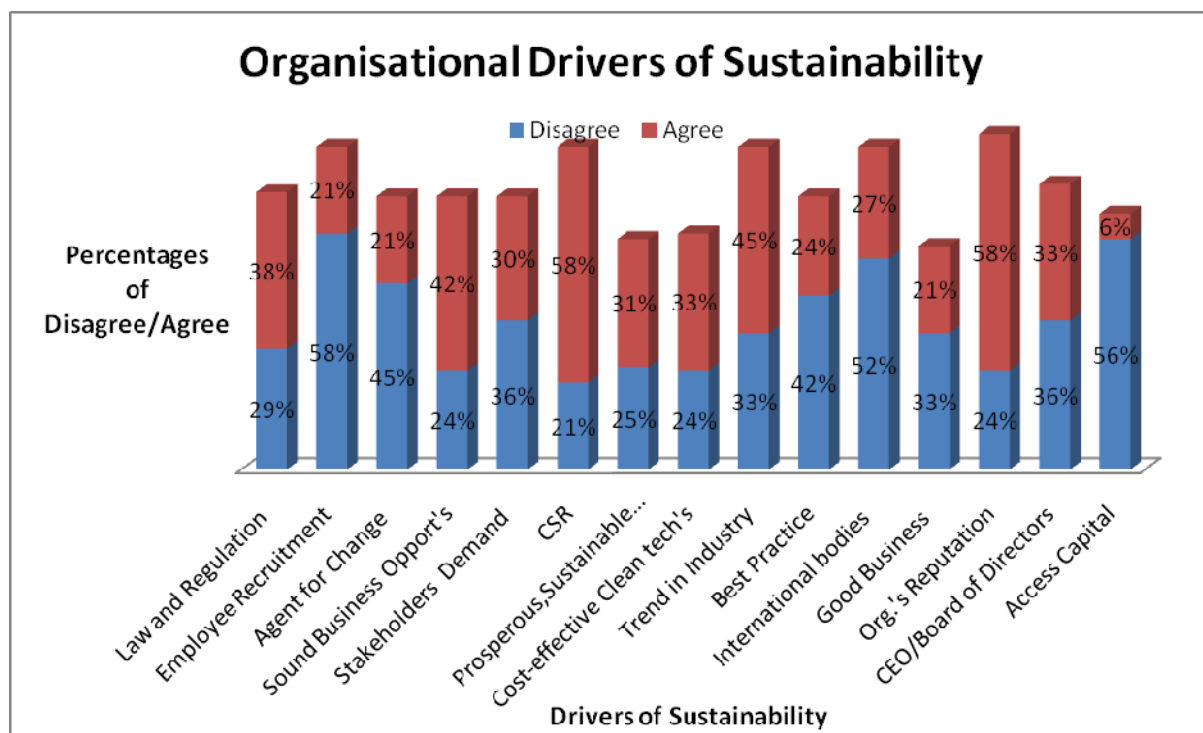
Chart 7.2 National Drivers of Sustainability



From the organisational viewpoint, CFO's still supported the view that organisational reputation is enhanced (58%) and sustainability adopting also drives good corporate governance (58%). However 36% disagreed that stakeholder demand was a sustainability

driver for their organisation nor did it showcase best practice for their organisations (42%). Furthermore 52% did not feel there was no international pressure for their organisation to adopt sustainability; of this the majority of these firms had national markets (11 of the 12 firms). A higher portion did not believe that sustainability was an agent for change in their organisation (42%) even though they believe there is a sustainability trend within their own industry (45%).

Chart 7.3: Organisational Drivers of Sustainability



The top earning firms earned 88% (13 firms) of the total annual revenues; a significant amount of the total annual sales. They were also the employers of more than a 100 employees. A categorisation was done across the top earning firms to determine what they considered to be the national drivers.

From the national viewpoint all these companies considered that sustainability adoption drove good corporate social responsibility while only one disagreed that sustainability adoption could present good business opportunities. Just over half the companies believed that sustainability adoption did not improve employee recruitment (7)

while only 3 believed that it did nor did they believe that sustainability was driven by top management (5). Few disagreed that international bodies placed pressure on NZ companies to adopt sustainability (5) and just over half disagreed that any sustainability adoption could cut costs and improved profits (7).

From the organisational viewpoint this cohort of companies continued to believed that sustainability adoption was driven by corporate social responsibility (8) and it provided good business opportunities (5). Less than a third determined that top management was driving sustainability adoption for their firms (3) however there was still strong disagreement that any sustainability adoption could cut costs and improve their profits (8). However 5 of these companies determined that sustainability adoption was vital for employee recruitment.

Barriers to Sustainable Adoption

The next two questions asked the CFOs their views on barriers to sustainability adoption. This is presented in the following two tables. Again the national barriers to sustainability adoption were considered to be much stronger than the organisational barriers. The CFOs determined that the issues of cost for sustainability significant (88%); that consumers failed to understand the difficulties and the costs of sustainability adoption (79%). The CFOs determined that sustainability is not considered a top priority at the national level (79%) and that there were neither guidelines nor standards to provide clear guidance for sustainability adoption in NZ (67%). Moreover sustainability guidelines are difficult for business to manage (67%) and there is little or no feedback support for sustainability adoption in NZ (70%). There was reasonably strong agreement that sustainability created unrealistic expectations of business (58%).

Table 7.6: National Barriers To Sustainability Adoption

Statement	Disagree	Agree	Mean	Mode	STDEV
Business bears greater cost to adopt 'Sustainable Development' practices	3%	88%	4.12	4	0.69
There is a need for unbiased respected referees in the 'Sustainable Development' arena	9%	52%	3.55	3	0.83
The concept of 'Sustainable Development' creates unrealistic expectations of business	12%	58%	3.48	4	0.97
There is little institutional support for 'Sustainable Development' in New Zealand	9%	48%	3.39	4	0.66
There is neither clear guidance nor standards on how 'Sustainable Development' should be adopted.	6%	67%	3.73	4	0.76
There is an ever growing wider circle of stakeholder responsibility that is hard to define	9%	59%	3.48	4	1.00
'Sustainable Development' timelines are difficult to determine	15%	67%	3.58	4	0.94
The 'Sustainable Development' adoption here in NZ seems just a drop in the ocean	16%	56%	3.39	4	1.06
'Sustainable Development' is not perceived as a top priority	3%	79%	3.94	4	0.70
Sustainable alternatives are often more costly and less convenient	6%	79%	3.94	4	0.79
There is a lack of reliable information and feedback to encourage 'Sustainable Development' practices in New Zealand	15%	70%	3.76	4	0.97
Free-riders ultimately undermine the 'Sustainable Development' process	6%	45%	3.52	3	0.80
Consumers are unaware of the difficulties of implementing 'Sustainable Development' practices	3%	79%	3.97	4	0.73

From the organisational viewpoint these views did change but not in a significant way. CFOs still determined that business had to bear the costs of sustainability adoption (61%), even though sustainability is not considered to be a top priority within their own organisations (55%). 72% strongly agreed that sustainability alternatives tended to more

costly to adopt however few CFOs considered independent referees relevant their organisations (35%).

Chart 7.4: National Barriers to Sustainability Adoption

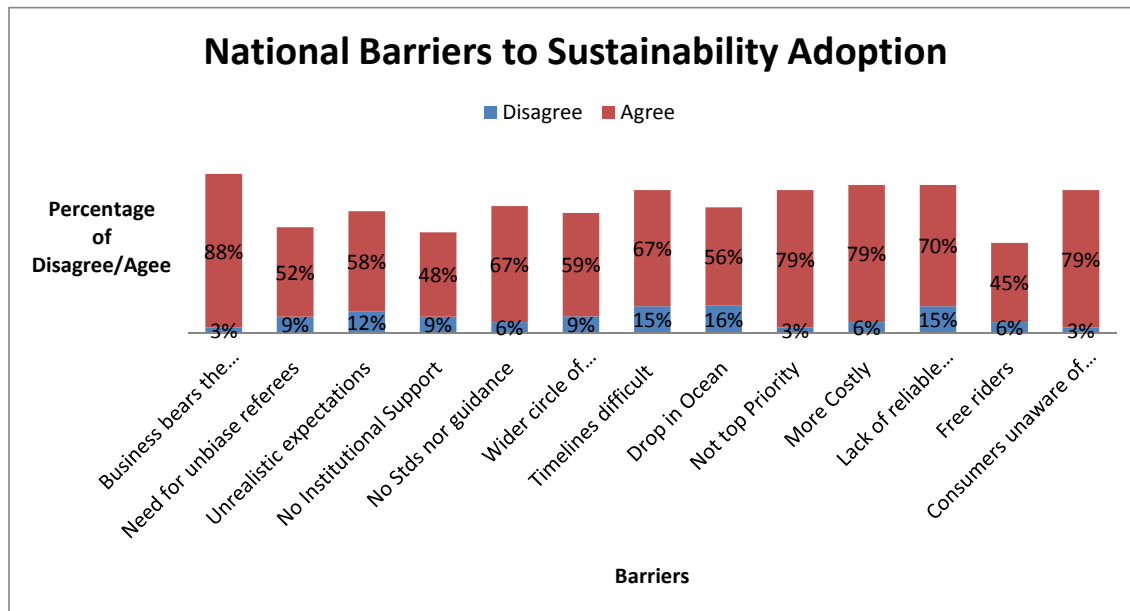


Chart 7.5: Organisational Barriers to Sustainability Adoption

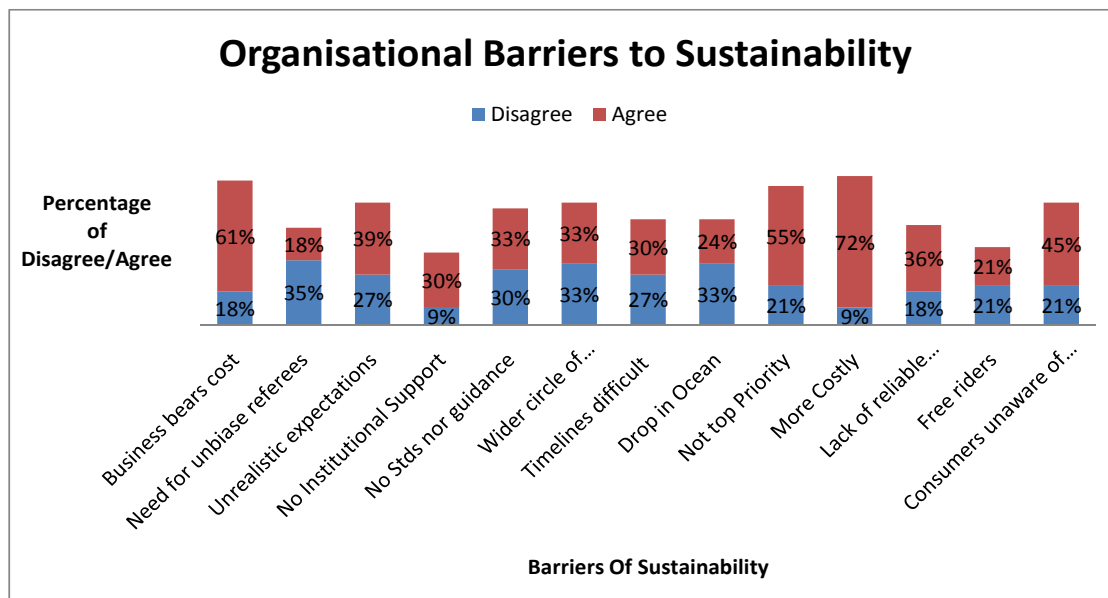


Table 7.7: Organisational Barriers to Sustainability Adoption

Statement	Disagree	Agree	Mean	Mode	STDEV
Business bears greater cost to adopt 'Sustainable Development' practices	18%	61%	3.58	4	1.23
There is a need for unbiased respected referees in the 'Sustainable Development' arena	35%	18%	2.79	3	1.07
The concept of 'Sustainable Development' creates unrealistic expectations of business	27%	39%	3.18	3	1.18
There is little institutional support for 'Sustainable Development' in New Zealand	9%	30%	3.27	3	0.94
There is neither clear guidance nor standards on how 'Sustainable Development' should be adopted.	30%	33%	3.03	3	1.10
There is an ever growing wider circle of stakeholder responsibility that is hard to define	33%	33%	2.91	4	0.98
'Sustainable Development' timelines are difficult to determine	27%	30%	3.00	3	1.03
The 'Sustainable Development' adoption here in NZ seems just a drop in the ocean	33%	24%	2.91	3	1.07
'Sustainable Development' is not perceived as a top priority	21%	55%	3.36	4	1.06
Sustainable alternatives are often more costly and less convenient	9%	72%	3.81	4	0.97
There is a lack of reliable information and feedback to encourage 'Sustainable Development' practices in New Zealand	18%	36%	3.18	3	0.95
Free-riders ultimately undermine the 'Sustainable Development' process	21%	21%	2.97	3	0.95
Consumers are unaware of the difficulties of implementing 'Sustainable Development' practices	21%	45%	3.33	3	1.11

From the organisational viewpoint CFOs still believed that there was a lack of reliable information and feedback to encourage sustainability adoption (36%) and that there is little institutional support for sustainability adoption (30%).

The national perspective was weighted strongly in agreement – that there were substantial barriers to overcome before sustainability adoption could be invoked. Of the top earning companies (from the national perspective) more than half believed that there was a lack of reliable information and feedback that encouraged sustainable adoption (9); they also agreed that the timeline difficulties for sustainability were difficult to manage (9). Moreover the same number of firms agreed that consumers were unaware of the difficulty of sustainability adoption and that stakeholders were harder to defined. They agreed that the there was neither guidance nor standards offered for sustainability adoption (7) and that it created unrealistic expectations of business (7). Fewer believed that free riders were a problem (6) and that there was a need for unbiased referees (5).

A paired t-test was performed on the means of the tables for statistical completeness; the first test looked at the responses between the what the respondents thought of drivers of sustainability adoption at both the national and organisational level.

Table 7.8: Paired T-test Result for Question 10 and Question 11

t-Test: Paired Two Sample for Means

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	3.23663473	2.87286839
Variance	0.307578244	0.142398936
Observations	15	15
Pearson Correlation	0.809125306	
Hypothesized Mean Difference	0	
Df	14	
t Stat	4.222862124	
P(T<=t) one-tail	0.000425924	
t Critical one-tail	1.761310115	
P(T<=t) two-tail	0.000851848	
t Critical two-tail	2.144786681	

The results show that although there is variance between the means, it is low; this determines that there is a difference as to how the respondents responded between the questions. This indicates that whilst CFOs supported sustainability adoption at a national level, their support within their own organisations was not as strong.

The second paired t-test looked at the barriers for sustainability adoption; the results are found in Table 7.9.

Table 7.9: Paired T-test for Question 11 and Question 12

t-Test: Paired Two Sample for Means

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	3.680378445	3.179530029
Variance	0.059521176	0.084770086
Observations	13	13
Pearson Correlation	0.740535179	
Hypothesized Mean Difference	0	
df	12	
t Stat	9.134000491	
P(T<=t) one-tail	4.72144E-07	
t Critical one-tail	1.782287548	
P(T<=t) two-tail	9.44288E-07	
t Critical two-tail	2.178812827	

The means in this test were very close and there was a very negligible difference. This indicated (and supported by the paired t-test) that the CFOs responded very similarly in both national and organisational levels when asked about barriers to sustainability adoption. This was very much in keeping with the prior statistical findings; CFOs find the barriers to sustainability adoption significant to breach.

7.4 Analysis of Sustainability Reporting.

Sustainability reporting was carried out by 21% of the CFOs's; of which 6% (2) are produced for internal use only while 15% (5) are for external use. The rest of the firms did not produce sustainability reports (79% - (29)).

For those that did not that did not produce a sustainability report 59% (17) determined that stakeholders did not demand one – so they had no need to produce one. 17% (5) believed that there was no business case to produce a report and a 7% (2) believed that there was no senior management motivation to produce a report. This was very much in keeping with the PWC (2002) findings.

Of those that did produce a report – 15% (5) had a specific team dedicated to sustainability; they were also the external reporters. Of the other 2 firms that did produce reports – only one had a specific person dedicated to sustainability.

Of the top earning firms – the top five earners produced sustainability reports for external use; they were the only firms that produced external reports within this research. The other two reports were reports for internal use only by much smaller firms.

7.5 Analysis of Source of Information for Sustainable Development

When the sources of information section was analysed there were sections of information sources that were not considered to be important at all; these included

- books (48% - (16))
- sustainability advisors (44% - (15))
- databases (45%-(15))
- reference books (45% - 15))
- conferences – (41% - (13))

On the otherhand industry advisors ranked very importantly (48% - (16)) along with journals (42% - (14)) and the Internet (48% -(16)). When the respondents were asked to consider how satisfied they were with their sources of information – most were neutral (59% - (20)). 27% (9) were very unhappy with the sources of information and 15% - (5) were satisfied.

Overall the CFOs tended to support a narrow range of information sources for sustainability – the internet, industry advisors and journals. Some were largely unhappy with the information sources however a larger group were relatively neutral about their satisfaction with information sources.

7.7 Analysis of the Challenges of Embedding & Advancing Sustainable Development Practices

This section presented as a series of 6 statements that were considerably longer than the ones presented in the matrices. They covered 3 general areas and the results are below.

Table 7.9.1: Statement Analysis

Statement	Disagree	Agree	Mean	Mode	STDEV
Without objective disclosure of corporate, social and environmental performance, investors, consumers and prospective employees are left guessing when it comes to factoring these matters into their decisions	9%	72%	3.88	4.00	0.83
To meet stakeholders information needs, a company needs to go beyond internal management and put its Sustainable Development performance record out for public scrutiny.	18%	61%	3.52	4.00	1.09
The benefits to companies who include Sustainability Reports together with their financial performance outweigh the costs	48%	45%	2.52	3.00	1.06
People who have access to better information through Sustainability Reports will make better investment, purchasing, advocacy, and employment decisions	39%	55%	2.76	3.00	1.00
Sustainability Reports are too generalised and too complex to provide useful information.	12%	79%	3.42	3.00	0.90
Sustainable Development policies need to provide simple and practical reporting strategies and methods.	9%	64%	3.91	4.00	1.04

The first two statements were disclosure topics – one directed at employees and the other statement directed at stakeholders. In the first statement 72% agreed with objective disclosure would improve their stakeholder relationships while in contrast they were less reluctant to have their firms' information scrutinised by the same stakeholders; less (by 11%) at 61%. The second set of statements related to finances and the production of sustainability reports. In this section the firms were reasonable divided into two; 48% disagreed that a sustainability report would bring benefits to a company (and therefore

outweigh the costs of producing it) while 45% agreed that it would. In contrast 39% believed that producing a sustainability report would not attract more investors while 55% believed that it would. The last two looked at the conceptual issues of sustainability; reporting and guidelines. There was a majority agreement by CFOs that sustainability reporting was too generalised and too complex to be useful (79%) and that there needed to be some guidelines and strategies provided to assist in reporting (64%).

7.8 Summary and Discussion

The results of this research revealed some interesting findings. The matrices sets determined that CFOs are exposed to a wide range of sustainability information and for the most part this is industry driven. Overall CFOs expressed their agreement with the adopting sustainability because they believed there were gains to made for their firms; being reputation enhancement and good corporate governance. This is in keeping with the literature review that determined that sustainability adoption by firms is largely self-interested and confirms the findings of the PWC 2002 survey.

However although the CFOs expressed their agreement with the national drivers of sustainability – this was not translated into a practice within their own firms. Whilst they agreed in essence that they wanted to be seen as sustainable organisations, they were reluctant to have their firms' information scrutinised by stakeholders. They believed that stakeholders are unaware of the difficulties of adopting sustainable practices and furthermore stakeholders have unrealistic expectations of what their firms could achieve by adopting sustainability.

CFOs did not believe that sustainability would cut costs and improve their profits – rather they believed that sustainability adoption was very inconvenient as it is costly; that their firms have to bear the cost of sustainability adoption. So whilst they thought sustainability promoted cost-efficiencies and clean technology; few believed that for their own organisations especially because there is a lack of guidance and standards provided for sustainability adoption. Therefore the influence for firms to adopt sustainable practices is driven largely by non-financial factors rather than any economic gains. This reiterates the

findings of Coombes and Davey (1994) and PWC (2002) that firms are for the most part sceptical about adopting sustainability practices and that any sustainability adoption for firms does bring any quantifiable benefits to their firms.

Nor did CFOs believe that producing a sustainability report would improve their attraction to investors, stakeholders or future employees. Most of the firms did not produce a report – the ones that did were the largest earning firms and all were international traders. Therefore these large firms are more motivated to produce sustainability reports (for their foreign consumers) than others in the research sample. CFOs determined that the sustainability reporting is too general to be of importance; the reports too generalised and the stakeholder definition too broad.

The larger the firm the more likely they take sustainability issues more seriously; they are more likely than not, to have a dedicated sustainability team. However it was noted there was a considerable number who did not consider sustainability a priority; there was no business case for their firms to produce a sustainability report and nor did their stakeholders demand one. This study also confirmed that there is no formalised or institutional learning of sustainability; the CFOs relied on industry advisors, journals and the internet to inform themselves.

However if there was a growing interest from stakeholders and a significant benefit to be gained from producing a report – then perhaps the firms sitting on the fence may act. However until then, any sustainability adoption as a management tool is very limited; especially if their senior management did not consider sustainability a priority. This is interesting considering that an overwhelming number in this study considered their reputational enhancement important; yet for the most part the CFOs of this study are basically non-movers in the sustainability.

Chapter Eight

Conclusion and Future Research

8.1 Introduction

The aim of this chapter is to conclude the research. This chapter is organised as follows:

8.2 Meeting the Research Objectives

8.3 Recommendations for further research

8.2 Meeting the Research Objectives

The purpose of this research project was to evaluate and better understand the CFO's role in sustainability reporting of New Zealand (NZ) publicly listed companies. This was elaborated as the specific aims:

- To construct an instrument to measure the extent and degree of sustainability reporting undertaken in NZ publicly listed companies
- To examine and explore the reasons why CFO's involve (or exclude) themselves in sustainability reporting issues
- To indicate where CFOs believe the motivations for more sustainability reporting may come from.
- To examine how CFOs become informed about sustainability

By using the developed research instrument, 34 CFOs of NZ's publicly listed firms were surveyed with a questionnaire. The firms are some of the largest in NZ – with total revenue of more than \$12 billion while one firm alone had sales revenue of more than \$7 billion.

The respondents were CFOs in a broad range of firms across NZ – but the largest firms were stationed in the Auckland and Wellington regions.

52% of the total number of eligible CFOs eventually responded. The research instrument was arranged into four main sections that explored the CFOs attitudes and approaches towards sustainability adoption. The research instrument covered drivers and barriers to sustainability adoption (at a national level initially and then within their own organisations); motivations for (or not) producing sustainability reports and where the CFO's learned about sustainability. The summary of the primary findings are as follows:

- the majority of the respondents believe that the benefit of sustainability lies in reputational enhancement and better corporate social responsibility (non-financial factors).

This research confirms the earlier works of Coombes & Davey (1994) and most of the prior literature; that most firms are concerned about sustainability and are exposed to a variety of sustainability information, of which most of this is industry driven. This confirms the findings of Bluestein (2000) that determined that 'sustainability' is the template that business organisations (such as industry advisors) are using to model their institutional programs upon. This also confirms the work of Pearson (1979) who determined that objectives and targets of sustainability are unclear and therefore the stakeholders who engage in sustainability do so from the viewpoint of protecting their own freedoms and to deter any threats to their freedoms.

- while most of these firms supported the concept of sustainability and in essence wanted to be seen as sustainable firms most of these firms are reluctant to have their firms' information scrutinised by stakeholders

The complexity of sustainability and what it is trying to achieve deters firms from setting identifiable sustainability goals (Jamieson, 1998; Hilty, 2001; Robert, Basile, Broman et. al., 2004). This confirms the findings of Phillis & Andriantiatsaholiniaina, 2001; Chatterjee,

2005 which determined that sustainability for many firms is too vague for firms to grasp; this is further undermined by the fact there is no guidance or standards provided to support firms in identifying the goals of sustainability. This confirms the conflict and resistance to sustainability adoption; this poses difficulties for firms as any sustainability endpoint also becomes subject to debate (Walker, 2006). The public's perception and evaluation of the firm's actions is open to scrutiny when the firm produces external reports and therefore these firms are motivated to leave any contentious information largely unreported (Leiss, 2006). This also confirms that the firms realised that the power of the media is not academic (Islam, 2002).

- for a variety of reasons (discussed more fully in Chapter Seven), the majority of these CFOs work in companies that do not produce sustainability reports

This confirms that business actively control the information flows to their customers, employees and the public at large (Schmidt & Pan, 1994; Margulies, 1997). The move to control information flows from the corporate image and reputation to the strategic and competitive advantages of producing sustainability report (Daniels, 2006), are largely ignored by this sample of CFOs. This also highlights that any sustainability report is dependant on the management who produces it; as the professional accounting bodies have yet to produce a sustainability reporting framework, this leaves the CFOs (as lone accountants for the most part) unable to address this aspect of their business (Leiss, 2006). Moreover there is concern that these reports can not be given the same assurance (and therefore credibility) as the financial reports (Dando & Swift, 2003).

Moreover this confirms that because sustainability reports are not legislatively mandated, firms are not compelled to report and so they are not. Even though firms take the front-line view of disseminating information to their stakeholders – it tends to be used as a strategic once-off disclosure (Wagenhofer, 1990) . However it also confirmed the work of Papadakis & Grant (2001) who determined that only the biggest firms will undertake sustainability reporting – the 5 firms that did report were in the sample of the largest firms.

- for a variety of reasons (discussed more fully in Chapter Seven) most of these companies see sustainability adoption as inconvenient and costly.

The failure to provide a reliable sustainability framework which monitors and accounts for sustainability issues has left a information gap between what the firms can reliably provide and what the clients want to see (Fox, 1999; Boot & Thakor, 2001). As previously discussed in Chapter Four, accountants predominantly see sustainability reporting as problematic. The attention of the stakeholders has expanded to include the impact of business on society as well as the environment (as well as financially) and therefore any attempts to define what those responsibilities and obligations are do not translate well into the pragmatic reality of accountancy. What is clear that to move from the current reporting obligations (which are underpinned by accounting standards) to include social and environmental aspects so that a complete impact of the nature of business can be constructed is beyond what the firms are able to currently do (Gray and Milne, 2002). This confirms the study of Gray and Milne (2002) that a multivariate conceptual framework would be required to invoke sustainability reporting; that understanding value and value-creation would become unclear from the present reporting standards. From the corporate viewpoint it is clear that CFOs still view sustainability as a impact upon their economic activity (Scholes & Clutterbuck, 1998).

- most of these CFOs rely on industry advisors, journals and the internet to learn and stay informed about sustainability processes.

This confirms that stakeholders will cluster bite-sized, small, related topical areas of sustainability learning together; the CFOs in this study leaned toward the perceptive judgement view of sustainability. The information the CFOs accessed is organised so that it is easily followed – they are monitoring sustainability so as to consider if there needs to be a response (as discussed in Chapter Two). The pluralistic nature and vagueness of the term does not translate well in to pragmatic (sustainability) actions; therefore the CFOs are defining sustainability for themselves.

- that most of the firms in this study are fence sitting and therefore until they move – sustainability as a management tool is largely irrelevant.

As discussed in Chapter Four there are no legislative requirements for firms to undertake any sustainability reporting. At the time of this study the CFOs (in this study) clearly see the economic impact of adopting a voluntary reporting process as unnecessary; especially in light of the fact that their stakeholders are not demanding sustainability reports. This confirms that the sustainability process is approached from a prescriptive viewpoint; this determines what the norms, rules and decision-making process the stakeholders will take up. It also confirms that sustainability adoption is considered as gains or losses for each of the stakeholders (as discussed in Chapter Three) and therefore whether a stakeholder's position is improved or worsened has implications for sustainability adoption. This reiterates that sustainability adoption is in reality for the stakeholders a compromise of economic and complex institutional arrangements and any resultant sustainability achievement is epiphenomenal.

8.2 Limitations

As already discussed there were a number of limitations of this study. Firstly the delivery and of the research instrument was extremely problematic; the CFOs were long suffering and therefore the sample for this study was reduced. However it is noted that 52% of the eligible CFOs did eventually respond.

As noted there is a decided lack of research in this area and in particular in NZ. It posed difficulties in the areas that explore the definitional nature of sustainability along with the foundational knowledge of sustainability; therefore the research had to explore other disciplines to underpin this aspect of the research.

This research instrument was directed at CFOs specifically; much of this work came from the prior research of Coombes & Davey (1994), Collins, Lawrence & Roper, (2007) and PWC (2002). As there was not much that was comparable outside these studies, the inclusion of some subjective material (as to which areas should be included) was determined to be necessary. This meant that important areas such as sustainability ethics were excluded.

8.3. Recommendations for Future Research

As already mentioned one area that was omitted was ethics; this is an interesting area of research that explores the motivations between the CFOs and the ethical foundations that motivate a firm towards sustainability; there is little research in this area. Another area that was left out was the CSR – this has been taken up by researchers in Europe and America however there is still very little research done in NZ and Australia in this area.

This research identified informational gaps in the discourse of sustainability. The first informational gap is the foundational knowledge that underpins sustainability. This has been largely ignored in the literature however as this research has demonstrated – this informs the practice of sustainability.

Secondly, another area that was identified in this research is that there has been no research that attempts to look at the cognitive referents used by stakeholders to learn about sustainability. This research demonstrated that this is important to the understanding of sustainability.

Finally there is little research in the area of sustainability advisory reporting and the multi-disciplinary practices. This research identified that these practices are driving the sustainability reporting and this would be another area that could be looked at in the future.

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