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THE ENVIRONMENTAL MANAGER AS ORGANISATIONAL CHANGE AGENT

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the requirements of the University of
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of Professional Doctorate

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Abstract

The long term profitability and sustainability of organisations is inextricably linked to the health of our natural environment (Redekop, 2010) yet their actions continue to both directly and indirectly impact upon the environment and the services it provides. Organisations need to ensure that they have access to the skills, competencies and knowledge needed to operate within the constraints that the environment imposes and to change their business practices to respond to challenges that are inevitable in the future. However, skills and attributes to initiate and support organisational environmental change remain ill defined (Quinn and Dalton, 2006; Van Velsor, 2009; Willard et. al., 2010; Christie et. al., 2013). This study addresses this research gap by evaluating the factors that influence the success of environmental managers as change agents within their organisations.

Using semi-structured interviews with environmental managers in the Northeast of England, the study explores the mechanisms used by practitioners to bring about change, the barriers and enablers they experience and the skills, attributes, behaviours and values they believe to be important for success. In so doing, the study provides a practitioner perspective on organisational environmental change.

Findings highlight the context specific nature of environmental change but point to a strong degree of commonality in the characteristics likely for success as an environmental manager. The importance of personal environmental concern, strong communication and people skills, a pragmatic approach to organisational change and strong organisational knowledge alongside environmental knowledge, are identified as important.

The findings of the study have implications for the ways in which the environmental managers of the future are educated and supported through their professional development. Additionally, the study highlights the need for further effort by professional bodies to raise the profile of the environmental manager role and to promote the robust validation of competencies within the profession.

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Glossary

CIEEM	Chartered Institute of Ecology and Environmental Management
CIEH	Chartered Institute of Environmental Health
CIWEM	Chartered Institution of Water and Environmental Management
CIWM	Chartered Institution of Wastes Management
CSR	Corporate Social Responsibility
DEFRA	Department for Environment, Food and Rural Affairs
GACSO	Global Association of Corporate Sustainability Officers
GDP	Gross Domestic Product
IEMA	Institute for Environmental Management and Assessment
ISO	International Standards Organisation
ISSP	International Society of Sustainability Professionals
UNEP	United Nations Environment Programme
WWF	World Wide Fund for Nature

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved.

Approval has been sought and granted by the Faculty Ethics Committee on 20/12/13.

Name: Helen Manns

Signature:

Date:

Chapter 1: Thesis Context

“Everyone in the world depends completely on Earth’s ecosystems and the services they provide, such as food, water, disease management, climate regulation, spiritual fulfilment, and aesthetic enjoyment. Over the past 50 years, humans have changed these ecosystems more rapidly and extensively than in any comparable period of time in human history...” (Millennium Ecosystem Assessment, 2005 p.15)

1.1 Background

The ecocentric paradigm holds that people are an integral part of nature and interact dynamically with the natural environment¹. Our actions both directly and indirectly result in changes in the ecosystems that make up the natural world and in turn these changes impact upon our own health and wellbeing. The ecosystems that make up the natural world provide us with numerous essential services. Without the provisioning services that ensure we have food, fuel, fresh water and fibre; the regulating services that maintain the temperature of the planet at a habitable level, regulate disease and purify our water; the cultural services that support recreation, education and spiritual wellbeing; and the underpinning supporting services that ensure nutrients are cycled, soil is formed and primary productivity maintained, we would be unable to survive on Earth. Every person and every organisation is dependent upon the ecosystem services of our planet (Millennium Ecosystem Assessment, 2005).

Evidence gathered during the Millennium Ecosystem Assessment (2005) suggests that globally, around 60% of the services examined are degraded, or are being used unsustainably, impacting upon our ability to reach internationally agreed Millennium Development goals. In addition, the economic consequences of our impact on the natural environment are evident; collapse of commercial fisheries, increasing cost of natural resource location and extraction, increased costs of flooding, are amongst many that could be cited. However, the importance of ecosystem services in maintaining economic prosperity is often undervalued (UNEP, 2014). Constanza et. al. (1997) calculated an estimated global value for ecosystem services of US\$33

¹ A number of typologies of environmental ethics exist. O’Riordan (1981) for example uses an ecocentric-technocentric continuum while Merchant (1992) uses an anthropocentric (Egocentric, Homocentric) and Non anthropocentric (Biocentric, Ecocentric) continuum. The terminology is not always consistent between these classifications and all groups may demonstrate environmental concern to different degrees. The term ecocentric is used in this work to indicate a belief system in which “humans are considered to be part of natural systems and constrained by that fact” as opposed to a more anthropocentric belief system in which “humans are considered to be independent from and superior to other organisms” (Hawcroft and Milfort, 2010 p.144) with the ecocentric belief system aligned to a greater level of environmental concern.

trillion per year, or six times the value of global GDP, while the United Nations Environment Programme (UNEP) (2014) suggest that the value of pollination services to UK agriculture alone may be in the order of £400 million per year.

In 2009, Rockström et. al. identified nine 'Planetary Boundaries' that govern life on Earth as we currently know it (climate change; rate of biodiversity loss; interference with nitrogen and phosphorous cycles; stratospheric ozone depletion; ocean acidification; global fresh water use; changes in land use; chemical pollution; and atmospheric aerosol loading) and note that in the case of climate change, rate of biodiversity loss and nitrogen cycling, these boundaries have already been crossed. In Europe around 430 000 premature deaths each year are attributed to air pollution with a further 10 000 attributed to noise. The threat from climate change is predicted to intensify in future years with growing impact on human and ecosystem health (European Environment Agency, 2015). Additionally, the World Wide Fund for Nature (WWF) (2014) present evidence that suggests we now need 1.5 planets to sustain our needs and that the biocapacity of the Earth has been exceeded for the last 40 years (p.9).

Despite this evidence, companies largely fail to recognise the connection between their activities and the health of ecosystems and therefore are unaware of the ramifications of ecosystem decline, or indeed the opportunities that protection of ecosystem services may bring (Hanson et. al., 2012; Holzman, D. C., 2012). Redekop (2010) notes that although the physical environment poses the "*ultimate constraint on business*" (p.2), it is frequently ignored in business texts while Whiteman et. al. (2013) similarly argue that "*studies on corporate sustainability continue to remain disconnected from the declining state of Earth systems.*" (p.329) and highlight the need for integration of business and natural science research.

In 2014 the Institute for Environmental Management and Assessment (IEMA) issued the following warning:

"Business is facing a perfect storm. Growing demand for scarcer and scarcer vital resources will drive commodity prices ever higher. Rapid population growth, volatility of materials supply and energy prices, plus climate uncertainty and extreme weather events, will combine to ensure businesses operate in an increasingly complex and difficult world." "Organisations need to recognise and prepare for these changes, to turn challenges into opportunities. To do so they have to put environmental management and sustainability at their heart." (IEMA, 2014 p.1)

IEEMA's research however, has identified a key need for up skilling of the workforce if this challenge is to be met since only 13% of the organisations they surveyed were fully confident they had the skills needed to compete in a sustainable economy (IEEMA, 2014 p.2). Bey et. al. (2013) identify lack of information on environmental impacts and lack of expert knowledge as key barriers to environmental action by organisations and Aragón-Correa and Rubio-López (2007) conclude that *"firms lacking environmentally qualified personnel will have difficulty in reaching high environmental performance standards."* (p.372). The demand from business for graduates with the necessary skills and knowledge to support engagement is therefore likely to grow (Hasselbarth and Schaltegger, 2014; Lozano et. al., 2015).

Academic research around the theme of organisational greening is spread over a number of years but remains fragmented, with the role of corporate leaders in steering their organisations down the sustainability path having been the emphasis of much of the earlier research in this area (Halme, 2002). The more recent, and still developing, discourse on ecocentric management identifies the need for more distributed leadership models (Dive, 2008; Wielkiewicz and Stelzner, 2013; Western, 2010) and the important role of the change agent (Post and Altman, 1994; Siebenhüner and Arnold, 2007) in organisational greening. Research into this wider context of organisational greening is therefore in its infancy. The role of the environmental professional in supporting organisational change remains little studied (Sharma, 2002; Gattiker and Carter, 2010; Visser and Crane, 2010) and while professional bodies are actively trying to define the skills and competencies needed by organisations and to seek ways of up skilling their members, there has been little attempt to support these developments with academic research. Andersson and Wolff (1996) and Catasús et. al. (1997) commented upon the limited attention that had been devoted in the literature to environmental managers and Junquera and Ordiz (2002) assertion that *"the literature still does not offer a generally accepted definition of the characteristics and attributes of the successful environmental leader"* (p.36). Redekop (2010) similarly notes that *"very little work has been done on this topic in the field of leadership studies."* (p.2).

In more recent years the picture has been further complicated by the development of a diversity of terminology as researchers seek to explore the concept of sustainable development and the interaction between its environmental, social and economic elements. Corporate responsibility, corporate social responsibility and corporate sustainability now also feature in the academic literature. However, Quinn and Dalton (2009) and Hasselbarth & Schaltegger (2014) point to the still exploratory nature of the field of sustainability leadership with research still providing little insight into the skills base needed to initiate and sustain organisational change. D'Amato and Roome (2009) agree, noting that the *"...leadership role to integrate sustainability is still*

unfamiliar territory, supporting the need for further investigation” (p. 425) while Van Velsor (2009) asserts that *“If new leader and leadership capabilities are needed to move organisations in the direction of social responsibility and environmental sustainability, we need to know more about what practices really work... and how these capabilities are best developed.”* (p.6). Similarly, Willard et. al (2010) comment upon the rapidly growing and evolving field of sustainable development and that *“the practice of sustainable development by professionals is unclear with regard to consistency and standardization”* (p.51). Research by Greenwood et. al. (2012) indicates that *“environmental managers are positioned to play a critical role in advancing environmental sustainability and social responsibility in their organisations.”* (p.59) but may be *“underestimated and underutilized”* (p.69). MacLean (2011) highlights the fact the traditional roles of the profession are in a state of flux and identifies the need for environmental professionals to actively engage in defining their roles, responsibilities and associated competencies.

Despite the lack of research, there are an ever increasing number of environmental professionals who on a daily basis, are implementing change in their organisations. Between them they have a vast practical knowledge of the barriers faced, the tactics that work and the skills and attributes they have developed, or are lacking, to be successful. They are therefore, a vital and rich source of data that can be tapped to support developments in this field.

1.2 Author’s Research Motivation and Context

With more than 25 years of experience in the environmental management field working as a practitioner, consultant and educator, I have accumulated broad knowledge and first-hand experience of the challenges faced in driving environmental change. Through this period progress has been frustratingly slow, with organisations still facing many of the challenges experienced two decades ago. However, my belief that environmental protection is paramount and passion for encouraging change have not waned.

Motivation for this specific research focus arises from two inter-related perspectives. In recent years I have been actively engaged in professional discourse on the development of skills and competencies for the environmental profession, acting as Chief Examiner for the Associate Membership exams of the Institute of Environmental Management and Assessment. Interaction with practitioners highlights the demand for a clear framework for professional development.

At the same time, the growing emphasis in the UK Higher Education sector on the embedding of employability into the curriculum (HEFCE, 2011) as part of Higher Education's contribution to economic growth and society more broadly, means that programmes are under increasing scrutiny to ensure they take account of the needs of employers and ensure the development of employment ready graduates. As a lecturer in Higher Education teaching environmental management students, it is important that my colleagues and I work to ensure the next generation of environmental managers are equipped with the skills that professional discourse suggests is lacking currently in the workforce (IEMA, 2014). Christie et. al. (2013) note the imperative in achieving this with a projected world increase in environmental jobs (UNEP 2008, 2011) yet also note the lack of any research into the profile of the future environmental manager and how the profession prepares for this next generation of recruits, a view supported by Hasselbarth and Schaltegger (2014). More broadly in higher education, this work also has relevance to those aiming to meet the challenge of the United Nations Principles for Responsible Management Education (PRME) (UN, 2007). It particularly contributes to 'Principle Four: Research', which calls for conceptual and empirical research to advance understanding of sustainable social, environmental and economic values; and 'Principle Five: Partnership', which calls for interaction with managers and business corporations to "extend knowledge of their challenges in meeting social and environmental responsibilities".

The emphasis of this work on environmental management rather than the wider construct of sustainable development, is a conscious decision which stems in part from the need to ground a DBA in practice which, as highlighted above, means for me a firm focus on environmental management, and secondly from a personal ecocentric philosophy which results in a belief that protection of the environment is a precondition for social and economic sustainability. Thus, using the Russian Doll analogy of sustainable development (Levett, 1998) rather than the three interlocking rings often used to portray sustainable development, economy as a social construct can only be sustainable within a sustainable society, which in turn can only be sustained within the resource and service constraints of the natural environment. Thus, how organisations continue to address concern for the environment amidst the widening and ill-defined world of corporate sustainability is, I believe, important if we are to avoid the paradox of sustainability being a mainstream business concern yet ecosystem decline continuing unabated. That said, the literature around environmental and social engagement, sustainable development and corporate engagement overlaps considerably with authors varying in the extent to which they are incorporating all or just some of the environmental, social and economic elements of sustainability and indeed, the extent to which they transparently declare this. Although focused on environmental management, the literature review presented in this

thesis therefore draws upon the wider sustainability and corporate responsibility literature where environmental sustainability is explicitly included by the author.

1.3 Research Aims

This research aims to fill an identified gap in the academic literature by presenting an explicit environmental practitioner perspective and by synthesising and updating the divergent perspectives studied to date. At the same time, it seeks to contribute to the emerging dialogue around skills and competencies for environmental management being led by professional bodies by providing in-depth insight into the lived experiences of environmental managers working in a range of sectors.

Specifically, the aim of this research is to explore what environmental managers perceive to be the factors that contribute to their success as agents for organisational environmental change. In so doing, the research seeks to critically evaluate:

- the internal and external barriers and enablers for environmental change experienced by environmental managers;
- the mechanisms used and actions taken by environmental managers to implement change in their organisations;
- the personal skills, attributes, behaviours and environmental values they believe are needed to effect change;
- the value of professional status to environmental managers; and
- the interplay between these factors

1.4 Thesis Structure

This thesis will begin with an introduction to the notion of organisational greening in order to provide context for the role of the environmental manager and the change agenda which they are pursuing (Chapter 2). It will then review literature on environmental leadership (Chapter 3) followed by a review of literature specifically focused on environmental change management (Chapter 4). The research questions for the study and conceptual model are presented in Chapter 5 followed by research design and methods in Chapter 6. Findings and conclusions follow in Chapters 7 and 8.

Chapter 2: Organisational Engagement with the Environmental Agenda

2.1 Introduction

According to Rainey (2006) *“At the dawn of the twenty-first century, sustainable business development is coming of age”* (p.1). A growing number of organisations have taken positive steps to reduce their environmental impacts (see for example Weybrecht (2014) for a wide ranging review of corporate engagement). Certifications to the ISO14001 Environmental Management System standard have risen from just 257 in 1995 to 324,148 in 2014 spanning 170 countries (International Standards Organisation, 2014), while the number of businesses publically declaring their environmental credentials by producing environmental/corporate responsibility reports is at an all-time high (92% of the G250 and 73% of the N100 in 34 countries) (KPMG, 2015).

The business case for engagement with the environmental agenda can be argued on a number of fronts including:

- Cost reduction

Economic arguments are frequently cited for engagement with the environmental agenda. For example, Dahlmann et. al. (2008), in their survey of environmental management practices in UK companies, conclude that cost reduction is *“overwhelmingly the most significant motivation associated with managing environmental impacts”* (p.276). The idea that the environment can be protected by efficient use of resources and reduced pollution while at the same time reducing costs, is persuasive. Even where organisations may argue that the costs involved in achieving environmental protection out-weigh the savings, the application of the polluter pays principle in environmental policy through increasing use of fiscal instruments such as green taxes and levies, is forcing many organisations to internalise environmental externalities and account for environmental protection on their balance sheet (Brady et. al., 2013). Jo et. al. (2015) demonstrate that even in the financial services sector which is arguably less directly influenced by resource and pollution costs, lowering environmental costs can increase overall financial performance.

- Legal compliance

There has been a steady rise in the amount and complexity of environmental legislation with which organisations must comply. Increasing globalisation of the environmental

agenda coupled with the UK's membership of the European Union, has seen an increasing pace of change; over 200 pieces of European environmental related legislation now impact on member states (Wolf and Stanley, 2011). The costs of compliance and non-compliance have also risen. Good environmental practice should mean reduced time and costs in securing and maintaining the necessary permits to operate, reduced risk of prosecution and reduced costs and negative publicity for non-compliance. In addition, mandatory reporting on environmental performance for some companies is increasing transparency and driving the need for engagement in the environmental agenda (DEFRA, 2013).

- Resource preservation

As noted previously, global footprinting suggests that we now require 1.5 planets to sustain our needs and have exceeded the biocapacity of the Earth for the last 40 years (WWF, 2014 p.9). For all of us this means the potential for resource scarcity in the future and, in the near term, increasing prices and price volatility. The UK consumes 410 million tonnes of raw materials each year and is increasingly reliant on imports (DEFRA, 2016). Indeed, materials scarcity is recognised as a tier 3 risk in the National Security Strategy (DEFRA, 2010) with aggregates, fish, palm oil, lithium and phosphorous amongst the resources for which there are security of supply concerns. In addition, the security of our water supply is also highlighted as cause for concern in parts of the country (DEFRA, 2011). For businesses able to improve the efficiency of resource use and shift to renewable, reusable and recycled resources, there is the potential to sustain and secure future resource supply.

- Market differentiation and expansion

With an increasingly competitive market place, it is possible for some organisations to achieve market advantage by being able to differentiate themselves as a result of their environmental stance. Although still a small part of the total market, the Co-op Bank (2012) report that ethical markets have continued to grow through the recession with average household spend on ethical (including 'green') products rising from £291 in 2000 to £989 in 2011. The proliferation of eco-labels has further helped to differentiate products, particularly where there are compulsory requirements for labelling as we have seen with the European Union's energy labelling requirements for electrical appliances. Indices of environmental and sustainability performance such as the Dow Jones Sustainability Index and the Newsweek Green Rankings also drive change by providing a credible third party assessment of organisational performance. Cordeiro

and Tewari (2015) demonstrate the benefits to stockholders of such rating schemes and that market value does increase with improved environmental performance.

- Stakeholder satisfaction

Stakeholder satisfaction is frequently cited as a key driver for engagement with the environmental agenda (Papagiannakis et. al., 2014; Dahlmann et. al., 2008; González-Benito and González-Benito, 2006). Customer demands for environmentally sound products, shareholder demands for reduced environmental risk and security of investment, public demands for transparency of environmental impacts and investor requirements for environmental due diligence checks can all drive engagement with the environmental agenda. Where organisational reputation is at risk and the chance for investment and sales reduced as a result of poor performance, the incentive for action is evident. Ferdig (2007) also suggests that commitment and productivity from employees and business partners can be enhanced through demonstrating concern for the environment.

Yet despite these apparently positive drivers for engagement, barriers remain and the concept of environmentally sustainable business management is yet to be fully defined resulting in “a myriad of conceptualisations regarding what it means to practice green management.” (Pane Haden et, al. 2009, p.1041). This chapter will explore the development of the concept of ecocentric business management and further explore the drivers and barriers faced by organisations. It will conclude by considering what changing perspectives on organisational environmental management mean for the role of the environmental manager.

2.2 The Development of Ecocentric Management

2.2.1 A Historic Perspective

A chronological review of the emergence and transformation of the corporate world’s engagement with the environmental agenda (Table 2.1) is a useful starting point to explore the nature of ecocentric management. Although environmental damage and environmental action can be tracked back over many centuries, the 1970s are generally recognised as the birth of environmental awareness (Pane Haden et. al., 2009) with the creation of Earth Day (1970) and the United Nations Conference on the Human Environment in 1972, from which arose the Stockholm Declaration containing 26 principles on the environment and development. Major pollution events such as Love Canal (1978) and Three Mile Island (1979) contributed to heightened public and political awareness of the need for environmental protection and drove

a strengthening of environmental legislation. Grudging acceptance from business of the need to clean up emissions resulted in a compliance driven approach to environmental management (Rainey, 2006).

Table 2.1: The Changing Nature of the Business: Environment Interaction

Date	DRIVERS	ENVIRONMENTAL MANAGEMENT	BUSINESS RESPONSE
1970's	<ul style="list-style-type: none"> • Emerging environmental laws • Pollution Control • Definition of political portfolio • Increase in enforcement bodies 	<ul style="list-style-type: none"> • Compliance • Reactive • Fragmented • Ill defined • Infancy 	<ul style="list-style-type: none"> • Resistant adaptation • Unwanted intrusion • Grudging compliance • End of pipe solutions and remediation
1980's	<ul style="list-style-type: none"> • Stakeholder engagement • Freedom of information • Multilateral environmental agreements 	<ul style="list-style-type: none"> • Compliance management • Management of stakeholder expectations • Emerging discipline 	<ul style="list-style-type: none"> • Business threat • Cost avoidance and risk minimisation • Reactive • Achieving legal requirements
1990's	<ul style="list-style-type: none"> • Pollution prevention • Policy framework • Sustainable Development 	<ul style="list-style-type: none"> • EMS • Product stewardship • Cleaner production • Specialist domain 	<ul style="list-style-type: none"> • Exceeding legal mandate • Meeting stakeholder expectations • Innovation and integration
2000's	<ul style="list-style-type: none"> • MBIs • Sustainable Development • CSR • Limits 	<ul style="list-style-type: none"> • Mainstream • Pre-emptive • Strategic • Change agent 	<ul style="list-style-type: none"> • Business opportunity • Strategic integration • Creating value • Proactive

Sources: adapted from Greenwood et. al. (2012); Kashmanian et. al. (2010); Pane Haden et. al. (2009); Rainey (2006); Courtice and Porritt (2003); Blair and Hitchcock (2001)

Through the 1980's environmental disasters such as Bhopal (1984) and the Exxon Valdez oil spill (1989) maintained a spotlight on the environment by highlighting the devastating impacts that pollution incidents can have, not only on the natural world but also on human health. The financial costs for organisations in getting it wrong added to growing stakeholder pressure and governments further tightened legal controls. The environmental agenda became a business threat with action driven by avoidance of financial and reputational risk (Rainey, 2006).

In 1992 the United Nations Conference on Environment and Development (The Earth Summit) was instrumental in shifting the agenda again through development of the formal underpinnings for sustainable development (Rainey, 2006; Kashmanian et. al., 2010). Global policy frameworks on issues such as climate change and biodiversity followed, and the concept that environmental, social and economic issues must be considered together in order to achieve sustainable development became mainstream. Legal and policy frameworks embraced the need for pollution prevention alongside control and the International Standards Organisation began development of the ISO14000 series of guidance on implementing environmental management in organisations (Rainey, 2006).

Today resource efficiency, life cycle assessment and producer responsibility have shifted the agenda from process control to product design and stewardship, allowing some businesses to proactively use their environmental credentials as a means of market differentiation. New policy instruments such as emissions trading and green taxes are forcing the internalisation of environmental costs and the environment is viewed as a strategic issue which enables companies to maintain competitiveness and create value (Rainey, 2006; Pane Haden et. al., 2009).

Although this historic overview implies that we have seen an ordered transition over the decades, we know that this does not match the reality of the engagement that we actually see from businesses today. Whilst it is clear that some businesses have embraced the environmental agenda and could claim to be proactively creating business opportunity from environmental engagement, there are many more that are just beginning to engage or are applying little beyond the compliance model characteristic of the 1970s (Quinn and Dalton, 2009). Indeed, Banerjee (2001) concludes that *“there does not appear to be a paradigm shift to concepts like sustainability or ecocentrism ... environmental strategy remains internally focused and is evaluated by its financial benefits to the firm...”* (p. 507). This historic perspective therefore may track the leading edge of environmental engagement but does not explain the diversity of what is happening on the ground today.

2.2.2 Models of Ecocentric Management

Rather than a historic continuum of engagement, authors such as Hass (1996) (Appendix 1), Van Marrewijk and Were (2003), Quinn and Dalton (2009) and Kashmanian et. al. (2011) suggest that what we see at any point in time is a continuum that characterises individual organisations' levels of engagement with social and environmental activities. Van Marrewijk

and Were (2003) for example, provide a model of engagement with the sustainability agenda as shown in Table 2.2.

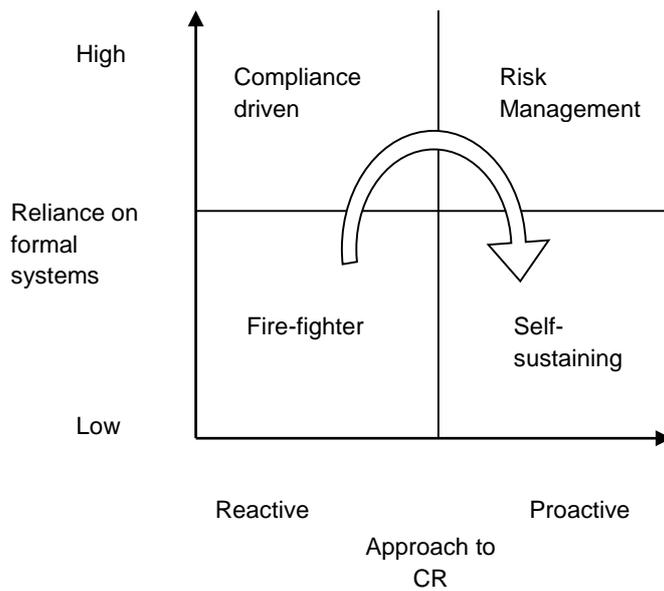
Table 2.2: Levels of Engagement with Sustainability Agenda

Level of Sustainability	Description
Pre-corporate sustainability	No ambition for corporate sustainability, however, some activities towards CS might be initiated when forced from the outside
Compliance-driven	Providing welfare to society, within the limits of regulation from the rightful authorities; organisations may respond to charity and stewardship concerns
Profit-driven	Integration of social, ethical and ecological aspects into business operations and decision making provided that it contributes to the bottom line.
Caring	Consists of balancing economic, social and ecological concerns, going beyond legal compliance and beyond profit considerations, motivation is that human potential, social responsibility and care for the planet are important.
Synergistic	Consists of a search for well-balanced, functional solutions creating value in the economic, social and ecological realms of corporate performance with a synergistic, win-together approach with all relevant stakeholders.
Holistic	Fully integrated and embedded in every aspect of the organisation, aimed at contributing to the quality and continuation of life of every being and entity, now and in the future.

Source: Van Marrewijk and Were (2003)

These models suggest a hierarchy of engagement which in turn implies that organisations will seek to transition through the hierarchy to achieve increasing levels of engagement. This process of change is highlighted in the model presented by Lyon (2004) in which progress towards corporate responsibility is seen as a function of the reliance on formal systems and the level of pro-activity shown by the organisation (Figure 2.1). Kashmanian et. al. (2011) similarly suggest a transition with milestones along the way being “*in compliance; beyond compliance; beyond fenceline; and beyond footprint*” (p.111).

Figure 2.1 Progress Towards Corporate Responsibility



Source: Lyon, 2004

Change, and by implication change management, is therefore a persistent theme in organisational environmental management literature (Georg and Füssel, 2000). The pace of change will vary between organisations since the complex mix of drivers, opportunities and barriers for environmental change will impact differently upon each organisation. There have been few large scale studies designed to determine where organisations are in this transition process but Dahlmann et. al. (2008) offer some insight. Their study of 167 UK companies across a range of sectors and of various sizes found that although action to improve environmental performance was underway, there was little evidence of systematic and strategic management. Instead environmental management practices were orientated towards coping with legislation, avoiding risk and obtaining short term economic gain. Moreover, comparing their results with those of an earlier study by Ghobadian et. al. (1995) led them to conclude that *“many aspects of environmental management practice have remained relatively constant over time.”* (p.279).

Another characteristic of the organisational environmental management literature is, as noted in Chapter 1, a confusing proliferation of terminology. Environmental management, corporate responsibility, corporate social responsibility, sustainable business development (Rainey, 2006), green management (Pane Haden et. al., 2009), ecocentric management (Shrivastava, 1995), sustaincentrism (Gladwin et. al., 1995), corporate environmentalism (Banerjee, 2001) and many more terms are used in the literature to embrace the concept of environmental

engagement, either alone or in combination with wider considerations of social, and sometimes economic, sustainability. The complexity of interrelationships between the various terms and the contested nature of terms such as sustainability and sustainable development are highlighted in the literature (Gray 2010; Sharma and Mehta, 2012; Sharma and Khanna, 2014) while Banerjee (2002) notes that “*little has been done to clarify, refine or measure the constructs*” (p.178). DesJardins (2015) indeed, argues that there has been “*systematic misuse, misunderstanding, and flawed application*” (p.117) of the concept of sustainability in many business settings which threatens to undermine the benefits for business practice that may be associated with the original Brundtland idea. Ehrenfeld (2008) argues that “*Almost everything being done in the name of sustainable development addresses and attempts to reduce unsustainability. But reducing unsustainability, although critical, does not and will not create sustainability.*” (p.7).

In part the terminology used reflects the chronological shift discussed in 2.2.1 but may also reflect the differing constructs of sustainable development and concerns of different professional fields. Whiteman et. al. (2013), for example, comment that “*Business management literature remains focused on understanding social, organisational or institutional implications for corporate sustainability, in isolation from quantitative indicators of ecosystem functioning.*” (p.308) with little concern for the ecological thought evident in earlier work such as that of Shrivastava, and which remains the focus of natural science sustainability research. This, they argue, has resulted in the “*ecologically-grounded foundation for sustainability*” (p.309) failing to be integrated into discourse around corporate sustainability and a decoupling of social and organisational concerns of corporate sustainability from ecosystem functioning. Similarly, Károly (2011) argues that sustainability needs to “*regain its original meaning of ecological stability*” (p.10). Sheehy (2015) explores the similarly contested nature of Corporate Social Responsibility, identifying a lack of consensus on its meaning between industry participants, academics and other interested parties (p. 625) while Simmers (2010) notes the implications for the lack of consistent terminology when attempting to draw conclusions across studies.

What in reality it means to behave in an environmentally sustainable fashion is, therefore, difficult to define with organisations adopting “*a myriad of conceptualisations*” (Pane Haden et. al., 2009 p. 1041). The change process can be framed as anything from technological innovation to complete transformation of organisational culture and values (Georg and Füssel, 2000) and there is no consensus on a single definition of ecocentric management (Pane Haden et. al., 2009; Kashmanian et. al., 2010).

A detailed analysis of the similarities and differences enshrined within the terms highlighted here is beyond the scope of this thesis (cf. Pane Haden et. al., 2009 and Banerjee, 2001 & 2002 for discussion of underlying theoretical framing as paradigm shift, stakeholder issue and strategy issue). However, in order to understand the role of the environmental manager it is appropriate to provide some direction as to the emerging consensus on what might characterise an organisation operating towards the top of the various hierarchies of engagement, since this will influence the functions of the environmental manager and in turn, the skills, attributes and behaviours required for success. In doing this, the term 'ecocentric management' is used for avoidance of undue complexity and to remain consistent with the stated focus on environmental sustainability.

2.3 Characteristics of Ecocentric Management

Researchers frequently portray ecocentric management as a paradigm shift (Shrivastava, 1995; Halme, 2002), critical for business to function in a complex and fast moving global environment. While consensus does not exist on precisely what ecocentric management entails (Raufflet, 2006; Pane Haden et. al., 2009), a number of common themes can be distilled from a review of the literature and are summarised in Table 2.3.

Ecocentric management requires holistic thinking, recognising complexity, connectivity and integration between local and global systems, resources and societies (Crews, 2010). This thinking needs to embrace the full value chain of the organisation, its full supply network, its customers and stakeholders as well as non-market actors such as NGOs and society generally (Kashmanian et. al., 2010; Mårtensonn and Westerberg, 2016). In addition, nature is recognised as a stakeholder in the organisation's value chain (Mårtensonn and Westerberg, 2016) and not as a resource to be exploited (Shrivastava, 1994). Organisations are constrained by the natural systems within which they operate, both in terms of the resources available and the services that natural systems provide. Resources must be used in a sustainable manner with organisations applying closed-loop thinking to maintain resources in circulation as long as possible (Starik and Rands, 1995). Lifecycle thinking ensures organisations take responsibility for products and services from the origins of the raw materials that they use to the end-of-life disposal of products, materials, and wastes (Rainey, 2006; Mårtensonn and Westerberg, 2016). This holistic view recognises the interconnectedness and interdependence of organisations with each other and the natural world (Hanson and Middleton, 2000; Ryan et. al. 2012).

Table 2.3: Themes in Ecocentric Management

Theme	Sub-themes	Source
Holistic thinking	Recognising global interconnectedness Managing complexity and paradox Recognition of interdependence Developing and valuing networks and coalitions	Hanson and Middleton, 2000 Rainey, 2006 Sienbenhüner and Arnold, 2007 Crews, 2010 Ryan et. al., 2012 Mårtensonn and Westerberg, 2016
Change	Acceptance of ambiguity and uncertainty Gradual development, incremental change Transformational change Promote sector change	Georg and Füssel, 2000 Rainey, 2006 Crews, 2010 Kashmanian et. al., 2010 Ryan et. al., 2012 Papagiannakis et. al., 2014
Enterprise level thinking	Organisation as part of the wider community Organisation as part of an industrial ecosystem Consideration of the whole value chain Engaging and valuing stakeholder and constituent input Partnership working Networking	Taylor, 1992 Shrivastava, 1995 Starik and Rands, 1995 Rainey, 2006 Kashmanian et. al., 2010 Doppelt, 2010 Ryan et. al., 2012 Mårtensonn and Westerberg, 2016
Organisation level thinking	Organisation as an organic system Whole organisation engagement and management Prevent the shift of harm between sub-systems Integrated management systems	Taylor, 1992 Shrivastava, 1995 Starik and Rands, 1995 Rainey, 2006 Pane Haden et. al., 2009 Crews, 2010
Long term value creation	Managing for long term success and value creation rather than short term profit Internalising environmental and social costs	Taylor, 1992 Shrivastava, 1994; 1995 Hanson and Middleton, 2000 Rainey, 2006

Table 2.3 continued

Theme	Sub-themes	Source
Empowerment	Engaging and valuing employees at all levels Decentralised power and authority Freedom and authority to act Participative decision making Non-hierarchical structures Reward systems	Shrivastava, 1994; 1995 Starik and Rands, 1995 Ramus, 2002 Doppelt, 2010 Mårtensonn and Westerberg, 2016
Openness and transparency	Accountability Dissemination of timely and credible information Dialogue amongst various communities Feedback	Kashmanian et. al., 2010 Doppelt, 2010 Crews, 2010 Mårtensonn and Westerberg, 2016
Continuous improvement	Commitment to ongoing engagement Sustaining enthusiasm and engagement Innovation – sustained and transformational Risk taking	Taylor, 1992 Rainey, 2006 Kashmanian et. al., 2010 Pane Haden et. al., 2009 Doppelt, 2010
Organisational learning	Distributed leadership Harnessing the knowledge of all employees Fostering individual commitment and engagement Investment in employee development Continuous learning for effective response to constant environmental flux	Ramus, 2002 Sienbenhüner and Arnold, 2007 Pane Haden et. al., 2009 Crews, 2010 Doppelt, 2010 Ryan et. al., 2012 Mårtensonn and Westerberg (2016)
Conserving and enhancing environmental and social capital	Sustainable use of resources Closed-loop systems Life-cycle thinking Minimisation of pollution Social responsibility – integrity and honesty Risk mitigation Equality Nature as a primary stakeholder, co-existence of nature and humanity	Shrivastava, 1995 Starik and Rands, 1995 Hanson and Middleton, 2000 Rainey, 2006 Kashmanian et. al., 2010 Pane Haden et. al., 2009 Doppelt, 2010 Mårtensonn and Westerberg, 2016

Ecocentric management also requires recognition of the interconnectedness of processes within the organisation. Therefore, there is a need to view the organisation as an organic system (Pane Haden et. al, 2009; Crews, 2010) within which all sub-systems must function together. Success will not be achieved by simply shifting harm from one sub-system to another. Instead, ecocentric management calls for the use of integrated management systems (Rainey, 2006) that take an organisation wide view and enable environmental, social and economic elements of organisational performance to be managed holistically.

Enterprise level thinking is also required, which shifts from a focus on the management of internal aspects and direct relationships, to considering the entire enterprise and its relationships with all its stakeholders (Rainey, 2006). Partnership working is central to this (Ryan et.al., 2012) as is ecosystem thinking (Starik and Rands, 1995; Mårtensonn and Westerberg, 2016) that encourages organisations to work together to maximise resource efficiency and minimise waste. Partnerships and networks also enable 'outside' resources and capabilities to be accessed to support problem solving, the identification of future opportunities and innovations and the development of new knowledge and organisational capabilities (Rainey, 2006; Ryan et. al. 2012; Mårtensonn and Westerberg, 2016). The needs and views of all stakeholders must be considered together in a mutually supportive manner rather than traded off against each other (Crews, 2010) and relationships need to be built on openness, transparency, accountability and feedback (Kashmanian et. al., 2010; Mårtensonn and Westerberg, 2016).

The goal of ecocentric management is long term value creation rather than short term profit. Value is built upon the knowledge and capabilities of the enterprise (Rainey, 2006) and is measured using non-economic valuation techniques (Hanson and Middleton, 2000; Doppelt, 2010) that consider all stakeholders, rather than from the exploitation of the natural environment and human capital. Expanding time-horizons to at least generational also allows proactive rather than reactive action (Taylor, 1992; Hanson and Middleton, 2000). Commitment to the continual improvement of existing products and services is required alongside transformational innovation that enables the development of new solutions and markets (Kashmanian et. al., 2010). Organisations must be prepared to take risks in order to achieve such transformations.

Organisations need to engage and value employees at all levels within their structure in order to engage and empower them. This will both enhance commitment to change through development of a shared vision and culture, and also increase opportunities for innovation (Shrivastava, 1994; Starik and Rands, 1995; Mårtensonn and Westerberg, 2016). The organisations that will be successful in the future will be those with a high capacity for learning

(Siebenhüner and Arnold, 2007; Pane Haden et. al., 2009; Crews, 2010; Doppelt, 2010) who invest in employee development and use distributed leadership models rather than relying on one individual to drive change (Crews, 2010; Doppelt, 2010). This enables them to respond to the constant turbulence and uncertainty that characterises environmental change (Pane Haden et. al., 2009).

Form this complex mix of factors, an agreed definition of ecocentric management is still lacking. Banerjee (2002) defines it as “...*the organisation-wide recognition of the legitimacy and importance of the biophysical environment in the formation of organisational strategy, and the integration of environmental issues into the strategic planning processes.*” (p.181). Pane Haden et. al. (2009) consider this definition to be lacking since it does not capture factors such as innovation and continuous improvement (p.1051) and instead propose that “*Green management is the organisation-wide process of applying innovation to achieve sustainability, waste reduction, social responsibility and a competitive advantages via continuous learning and development and by embracing environmental goals and strategies that are fully integrated with the goals and strategies of the organisation.*” (p.1052).

Definitions of ecocentric and sustainable management are not confined to academic literature but the same proliferation of terminology is evident in professional discourse. The World Business Council for Sustainable Development defines eco-efficiency as “...*the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the Earth’s estimated carrying capacity*”. (World Business Council for Sustainable Development, 2005). They identify multi-stakeholder collaboration, systemic thinking, co-innovation and partnership with governments and civil society groups as critical. Radical transformation of organisational culture will be required to incorporate flexibility, proactivity and closed-loop thinking so that organisations can respond to rapidly changing and conflicting challenges (World Business Council for Sustainable Development, 2010). The Global Association of Sustainability Officers (GACSO) define corporate sustainability as “...*the discipline by which companies align decision-making about the allocation of capital, product development, brand and sourcing with the principles of sustainable development, in a resource-constrained world*”. (GACSO, 2011, p.1), while Dow Jones, define it as “*A business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social development*”. (Dow Jones Sustainability Indices, 2015).

2.4 Drivers and Barriers for Environmental Change

2.4.1 Introduction

Quinn and Dalton (2009) comment that few organisations are pursuing a fully sustainable agenda (p.22) while Harris and Crane (2002) observe that *“cultural change has been largely limited to modest behaviour change and, at best, the incorporation of environmental responsibility into existing cultural certainties.”* (p.215), so what might be required to encourage an organisation to begin to engage with ecocentric management and what are the barriers? Some of the commonly cited arguments for environmental engagement are introduced in section 2.1 but empirical studies that confirm these as drivers for, or barriers to, change are fewer and results do not always concur (Crews, 2010; Carballo-Penela et. al., 2014). Drivers and barriers may be internal to an organisation (for example senior manager attitudes or resource availability) and external (for example legislation or customer pressure) (Murillo-Luna et. al., 2011; Lozano, 2015; Jabbour et.al. 2016). Lozano (2015) notes that external drivers tend to result in reactive measures while internal drivers are likely to result in more proactive change. Additionally, Murillo-Luna et. al. (2011) and Jabbour et. al. (2016) suggest that internal barriers are most likely to prevent environmental progress. Harris and Crane (2002) however, suggest that external drivers such as regulation and market pressure might help to unblock internal barriers by encouraging a shift in focus from traditional performance measures such as sales, profit and market share, which can stifle environmental initiatives. This section explores in more detail some of the key drivers and barriers for environmental engagement identified in the literature.

2.4.2 Senior Management Attitude and Knowledge

Senior managers' attitude towards the environmental agenda is cited by a number of authors as explaining differing levels of environmental engagement by organisations. According to González-Benito and González-Benito (2006) the importance of top managers' attitudes results from the fact that their engagement more easily releases the required resources for action and facilitates collaboration and coordination across the organisation. They also suggest that the type of action taken by an organisation may depend upon top managers' beliefs which in turn influence their views on the benefits of environmental engagement; whether they see it as a means of gaining competitive advantage, a means of improving relationships with stakeholders or as a philosophical concern. Flannery and May (1994) and Cherrier et. al. (2012) concur with this view and Williams and Schaefer (2013) note that top manager attitude to the environment may be a particularly strong driver in SMEs where firms are often built in line with

personal aspirations and philosophies. Harris and Crane (2002) note that the actions of a senior figure in an organisation can influence the behaviour of the whole organisation (symbolic action is often identified as a key element in leader follower constructs of leadership (see section 3.2)). Conversely, a negative attitude towards environmental management from senior management can block or hinder initiatives (Kasim and Ismail, 2012). Papagiannakis et. al. (2014) suggest that the environmental attitudes of top managers are particularly important in initiating change in organisations considered to have modest environmental impact and limited regulatory pressure to act as a driver. They also suggest that managers' attitudes will impact on the speed of change within an organisation.

Ervin et. al. (2013), Carballo-Penela and Castromán-Diz (2014) and Lozano (2015) also identify the importance of top management pro-environmental attitudes as important in their studies and Ervin et. al. (2013) conclude that *“policies that provide upper management with credible science on the critical role of ecosystem services in business viability and larger social welfare may help facilitate improved environmental management.”* (p.405). Doppelt (2010), Quinn and Dalton (2009) and Jabbour et. al. (2016) similarly note the importance of providing senior executives with appropriate knowledge of environmental and sustainability issues, strategies and governance approaches in order to facilitate organisational change while Ballard (2005) notes that awareness needs to be developed of the scale, urgency and relevance of the sustainable development agenda. Banerjee (2001) identifies regulatory threat, or perceived economic advantage from costs savings or product sales, as helping to drive senior level commitment.

2.4.3 Stakeholder Pressure and Reputation

Stakeholder pressure also features strongly in the literature as a driver for change, indeed Papagiannakis and Lioukas (2012) consider it to have a stronger impact on organisational responsiveness than senior management commitment and Papagiannakis et. al. (2014) and Bey et. al. (2013) identify it as a key factor in initiating the process of environmental change. Every organisation has a range of stakeholders varying in importance. Interacting and engaging with some of these will be essential to the survival of the organisation (e.g. customers, suppliers and employees) while others may have a less direct relationship (e.g. NGOs and the media). Organisations are more sensitive to stakeholder pressure where they believe that the stakeholder can have a direct impact on profitability (e.g. regulators and customer) (Banerjee, 2001). González-Benito and González-Benito (2006) note that the environmental consciousness of final customers is growing, and therefore highlight the growing importance

of this group of stakeholders. They consider stakeholder pressure to be the “*central determinant factor*” (p. 97) in their model of environmental proactivity upon which other variables act. Bey et. al. (2013) similarly found customer demands to be important in both initiating and sustaining environmental action amongst the manufacturing companies in their study. Ervin et. al. (2013) in contrast, found consumer pressure to be insignificant in their study of manufacturing and service companies. González-Benito and González-Benito (2006) suggest that position in the supply chain may be important, with manufacturers of finished products experiencing much greater consumer pressure than manufacturers of intermediate products and extractors of raw materials positioned further down the supply chain.

Literature predominantly focuses on the corporate world, and in particular larger firms, with little coverage of the service and public sectors or small companies (Georg and Füssel, 2000). Carballo-Penela and Castromán-Diz (2014), in contrast, studied small Spanish environmental consulting firms finding no significant influence of stakeholder pressure on environmental proactivity. However, they conclude that stakeholder pressure may be complicated by the fact that all stakeholders do not have the same agenda and may exert opposing pressures on an organisation or exert pressure only in relation to specific environmental issues. Similarly, Studer et. al. (2006) found stakeholder pressure to be significantly more important to large organisations than SMEs and note that the lack of stakeholder pressure can act as a barrier to action.

Linked to stakeholder demands and expectations, Lozano (2015) found reputational impact to be a key driver, a view shared by Studer et. al. (2006), Sienbenhüner and Arnold (2007), Babiak and Trendafilora (2011) and Lacy et. al. (2012).

2.4.4 Regulatory Pressure

Regulatory pressure is frequently cited as a driver for environmental action with compliance driven environmental engagement identified as one of the defining characteristics of the early stages of environmental engagement hierarchies as discussed in section 2.2.2 (Van Marrewijk and Were, 2003; Lyon, 2004; Kashmanian et. al. 2011). Bey et. al. (2013) also found that legislation acted as a trigger for initiating environmental action for 50% of the organisations in their survey but identified it as a key driver in sustaining action too. Ervin et. al. (2013) and Lozano (2015) similarly found regulatory pressure to be positively associated with environmental action and Studer et. al. (2006) identified it as the key driver for organisations of all sizes, but note that “*Regulatory compliance can become an end in itself rather than leading to fundamental changes in environmental attitude*” (p.428), a view shared by

Papagiannakis et. al. (2014). Williams and Schaefer (2013) note sector differences with legal compliance being a key motivating factor for more highly regulated sectors.

2.4.5 Resources and Competitive Advantages

The competitive advantages to be gained from proactive environmental engagement is another often cited driver (Babiak and Trendafilora, 2011; Murillo-Luna et. al., 2011; Ervin et. al., 2013). Failure by an organisation to respond to new opportunities, technologies or policy contexts, along with increasing resource and legal compliance costs, can result in loss of competitiveness and therefore economic loss. Conversely, responding to these factors can bring economic benefits (Dahlmann et. al., 2008; Lozano, 2015) as demand for products and services with reduced environmental impact grows (Delmas and Burbano, 2011; Lacy et. al., 2012). Bey et. al. (2013) identified competitive edge as being the key driver for sustaining environmental action with 93% of the respondents in their study identifying it as important. Similarly, Lacy et. al. (2012) identify revenue growth and cost reduction as the primary motivating factor for action amongst CEOs in the communications sector, and Jabbour et. al. (2016) demonstrated a positive link between 'green operational practices' and improved organisational competitiveness. Aragón-Correa and Rubio-López (2007), in contrast, conclude that "*While environmental progress will be financially favourable for many firms ... others may have no financial incentives to progress beyond legal standards.*" (p. 374). Cost benefits for efficiency improvements, and market responses to eco-efficient goods and services are amongst the factors that will influence this outcome. In addition, exaggerating environmental credentials (greenwashing), can be costly with a danger of both loss of consumer confidence and costly legal action (Delmas and Burbano, 2011).

Lack of resources can also act as a barrier to action. Murillo-Luna et. al. (2011) who, in their study differentiate between external and internal drivers, identify the high cost of environmental services and technologies as an important external barrier to proactive environmental action while budgetary limitations act as an internal barrier. Babiak and Trendafilora (2011), Bey et. al. (2013) and Ervin et. al. (2013) similarly identified lack of time and human and financial resources as the most significant barriers to environmental action and Studer et. al. (2006) and Williams and Schaefer (2013) identified lack of resources as a major barrier for SMEs.

2.4.6 Organisation Size

The impact of organisational size on engagement is inconclusive in the literature. Sienbenhüner and Arnold (2007) conclude that medium sized companies are more likely to implement radical change than large companies, identifying the difficulties of implementing change in large companies as a possible explanation. González-Benito and González-Benito (2006), Studer et. al. (2006) and Murillo-Luna et. al. (2011), in contrast, conclude that larger companies are more likely to take proactive environmental action as they have greater access to resources to devote to action and perceived greater stakeholder pressure. Ervin et. al. (2013) and Jabbour et. a. (2016), however, found size to be insignificant.

Consensus is greater that organisations of different sizes will face different drivers and barriers, although there is not necessarily agreement on what these are. González-Benito (2006), Studer et. al. (2006) and Sienbenhüner and Arnold (2007) all identify external drivers of stakeholder pressure and reputational loss as key for large organisations. For medium sized companies (Sienbenhüner and Arnold, 2007) and SMEs (Studer et. al., 2006; Williams and Schaefer, 2013) the internal efforts of individuals and senior management commitment are more likely to be important, although Studer et.al. identified legislation as being the dominant driver for change. As noted above, Carballo-Penela and Castromán-Diz (2014) found no significant influence of stakeholder pressure on environmental proactivity in small consultancy firms, however Studer et. al. (2006) found that customer demands could also drive change. This difference may however, be an influence of sector rather than size as they note that many of their survey group were positioned within the supply chain of large multinationals who were identified as exerting pressure, in contrast to little evident pressure from local customers. As noted previously, lack of resources and external support were identified by Studer et. al. (2006) and Williams and Schaefer (2013) as the major barriers for SMEs, while lack of demand from stakeholders was identified as the key barrier by large companies.

2.4.7 Sector

The sector within which an organisation operates and the environmental norms for that sector ('industrial monoculture' (Harris and Crane, 2002)) can also influence engagement. Some sectors are perceived to be 'greener' than others, perhaps due to regulatory pressures or stakeholder influence. Harris and Crane (2002) identify the deep-seated beliefs associated with particular industrial paradigms as a key barrier to change. Banerjee (2002) also found significant differences in levels of corporate environmentalism between industry sectors. Companies in the chemicals, utilities and manufacturing industries were found to exhibit higher

levels of greening than organisations in the service industries. Again, high levels of regulation and public concern are identified as potential drivers for this difference. Sienbenhüner and Arnold (2007) also found sector to be important with former public companies, for example, identifying strong pressure from the general public and NGOs whilst for the transport sector, regulation was identified as important. Williams and Schaefer (2013) note similar sector differences in the factors motivating environmental action by SMEs.

Banerjee et. al. (2002) tested the interaction of public concern, regulatory forces competitive advantage and top management commitment on the environmental values of organisations, their interactions with external stakeholders and the incorporation of environmental issues into strategy. Their findings suggest that industry type is a significant moderator of the various relationships. In high environmental impact sectors, the factors of influence in decreasing order of importance were top management commitment, public concern for the environment, regulatory forces, and competitive advantage. In contrast in industries with lower environmental impact, top management commitment remained important but competitive advantage was more important than regulatory forces and public concern.

2.4.8 Ownership

Ervin et. al. (2013) explore the role of ownership in driving change. Companies owned by a parent firm and those with a publicly traded status were found to be more likely to engage proactively in environmental action. The driver of company-wide standard performance requirements and ability to access additional resources from the parent company are suggested as possible explanations, while for publically traded companies, the requirement for public disclosure of information is considered a possible explanation. Walls et. al. (2012), who considered a range of ownership factors, found that small diverse board structures were more able to counter detrimental environmental performance. Their study considered a number of direct and indirect interactions, demonstrating the complexity of interactions between owners, managers and boards of directors in influencing environmental performance. De Villiers et. al. (2011), in contrast, found that large independent board structures were more associated with higher environmental performance.

2.4.9 Conclusions

The literature suggests a complicated mix of factors that will encourage or prevent environmental engagement, with the interaction between these factors being likely to elicit

different responses from organisation to organisation. Additionally, Ormazabal and Sarriegi (2012) suggest that different factors will influence the environmental management practices of organisations at different stages of their environmental management development. They conclude that at the first stage of engagement, regulatory pressure is a key driver, in the middle stages, economic benefits become important and in the highest states of engagement, green image and top management commitment become increasingly important.

2.5 What Do Environmental Managers Do?

Having provided an overview of the direction of travel in relation to ecocentric management, it is important to conclude by considering the implications of this for the role of the environmental manager. Brady (2005) and MacLean (2011) comment that the role of environmental manager used to be a practical one focused on ensuring legal compliance and little else. However, as the business response to the environmental agenda has changed, so too has the environmental manager's role with greater diversity and complexity of function. Greenwood et al. (2012) agree, concluding from their study of environmental managers that the role has expanded from one of compliance management and technical input towards more proactive and integrated management that involves facilitation of efforts across multifunctional areas of an organisation, awareness raising and internal and external communication. At the heart of the role, however, remains environmental stewardship.

The terminology relating to the title and role of the environmental manager is diverse and ill-defined in both academic literature and in practice. In 1989 Dorney provided a lexicon of environmental roles associated with environmental management that spanned more than three pages and noted the wide variety of titles and functions. The same holds true today with numerous overlapping job titles and roles. The Institute of Environmental Management and Assessment (IEMA) identify forty typical role titles on their website (IEMA 2015a), noting a range of responsibilities depending upon the level of authority of the role. However, they identify four areas of commonality, namely, an environmental manager:

- identifies and measures areas where a company can reduce its environmental impact;
- delivers environmental improvements;
- ensures that the organisation is complying with environmental regulations; and
- reports on its performance and makes recommendations (IEMA, 2015b)

Brady (2005) provides a level based system to describe the various functions of an environmental manager as they progress through their career and the management hierarchy

within an organisation, noting the need for increasing competencies at each level. At Level 1 the role may still be focused on legal and policy compliance while towards the top of the hierarchy (levels 5 and 6) the role becomes strategic, with responsibilities including corporate reporting, environmental product development, stakeholder engagement and corporate citizenship. This model however, pre-supposes that organisations operate with hierarchical and multi-layered environmental management structures. In reality, many environmental managers operate alone or as parts of a small team and may have a role that also spans related functions such as health and safety. The role of the environmental manager, therefore, can be very varied depending upon their particular organisational context.

To further add to the complexity, the environmental management role can be incorporated within the wider notion of sustainability and CSR management which similarly lacks clarity as noted by the Global Association of Corporate Sustainability Officers (GACSO). *“There is currently little consensus about what the sustainability role involves and what makes a good corporate sustainability professional.”* (GACSO 2011 p.2). A survey of corporate responsibility and sustainability professionals (Carnstone, 2014) notes the top functions associated with the role as CSR strategy development and implementation; reporting/performance measurement; environment; stakeholder engagement; auditing/assurance; community investment; and carbon/energy management. Greenwood et. al. (2012) also highlight the ill-defined nature of sustainability roles within organisations, pointing out that the breadth of the concept transcends any one profession but concluding that environmental managers have a critical role to play.

In this study the term ‘environmental manager’ is used to avoid complexity but should be taken to mean any role that has responsibility for management of the environmental performance of an organisation, either as a standalone function or as part of a wider role.

2.6 Conclusion

The literature demonstrates the complexity and, as yet, lack of clarity around the concept of ecocentric management. A diverse range of internal and external factors affect the approach to environmental management adopted. Crews (2010) notes that *“...part of the difficulty lies in determining what success means for a particular organisation.”* (p. 20). Papagiannakis et. al., (2014) note that although a range of factors have been identified as important in the process of organisational greening, the extent to which they are involved in both initiating and sustaining action has received little attention with few longitudinal studies, while Ramus (2002) comments that *“No firm is yet sustainable...”* *“Currently the movement towards sustainability is a process rather than a discrete end.”* (p.151).

Even where an organisation does not make a conscious decision to move towards a higher level of engagement, changes to the external environment through, for example, changes in the political and policy environment, amendment and expansion of legal controls, increasing use of market based instruments such as green taxes and pollution trading schemes, increased public and stakeholder awareness of environmental issues, resource scarcity and the impacts of climate change mean that the process of change is inevitable.

Given this context, the role occupied by environmental managers will continue to evolve. However, change management would seem to be an inevitable and increasingly important part of the role.

Chapter 3: Environmental Managers as Leaders

3.1 Introduction

According to Redekop (2010) “*Achieving environmental sustainability is quickly becoming one of the great leadership challenges of our time*” (p.1). However, to date in the vast field of leadership studies, there has been comparatively little attention paid to environmental leadership and even less to the skills and attributes required by environmental leaders. Few have considered the role of the environmental manager in leading organisational environmental change (Sharma, 2002; Gattiker and Carter, 2010; Visser and Crane, 2010). Empirical research focused on the attributes and characteristics that make an individual a successful environmental leader is limited (Catasús et. al., 1997; Junquera and Ordiz, 2002; Fernández et. al., 2006; Van Velsor, 2009; Shiel, 2013) and is spread thinly over a number of years. Literature is evolutionary in nature with few attempts at a comprehensive evaluation of the topic or critical appraisal of preceding work.

This chapter reviews the published academic literature that exists and attempts to synthesise a list of the skills, attributes and behaviours of those with responsibility for environmental leadership in their organisations. It also considers the alignment between what is reported in academic literature and the current discourse around environmental leadership in the professional community. It begins however, with a broad overview of leadership discourse. The intention is not to provide a comprehensive overview of the myriad of leadership theories that have burgeoned over the last few decades, nor to attempt to make sense of the contradictions that exist between them. Instead it attempts to identify key themes and provide context that may inform our understanding of how environmental managers provide leadership of the environmental agenda within their organisations.

3.2 Leadership Discourse

The importance of leadership in organisational behaviour is widely acknowledged and has been studied extensively with the result that multiple theories of leadership have emerged. Similarly, multiple definitions of the concept of leadership have also emerged over the years, the emphasis often depending on the perspective of the researcher and the dominant business, social and political context at the time. However, according to Weitzel (2006) “*After decades of research and thousands of studies, a generally accepted, comprehensive theory of leadership eludes researchers and students of the leadership phenomenon*” (p. xiii).

Western (2010) provides a meta-analysis of leadership models that identifies dominant leadership discourses in westernised organisations during the last century. The 'Controller Discourse' of the start of the 20th century reflected a drive for production efficiency with leadership focused on controlling resources to maximise output. The 'Therapist Discourse' he argues, emerged in the post-war period and was epitomised by the growth of human relations and personal development. Leadership focused on motivating workers and developing individuals. This was followed in the 1970's and early 1980' by the 'Messiah Discourse' in which the emphasis shifted to vision and shared goal. Successful leaders were those who could inspire commitment and drive transformation. Despite the chronological nature of this analysis, Western argues that all these discourses are still relevant today and in many organisations one or more may be evident and may prevail to differing extents within different departments.

Other authors have provided similar chronologies. Alban-Metcalfe and Alimo-Metcalfe (2013), for example, refer to five stages; "trait" or "Great Man" theories (stage 1 – 1930's) "behavioural" theories (stage 2 – 1950s) followed by "situational" and "contingency" models (stage 3) and then "vision", "heroic", "charisma" and "transformational" models (stage 4 – 1970's and 1980s). Finally, in 1990's and 2000's, they argue, stage 5 models such as "ethical", "authentic" and "engaging" leadership emerged. Although there may be some dispute about the precise dates of this chronology, there seems to be broad agreement on the chronology of dominance of these leadership discourses.

Much of the early work on leadership focused on the idea of traits and assumed that there were certain characteristics that would allow good leaders to be identified. The '*Great Man Theory*' argues that great leaders are born and thus rise to power because of the special characteristics they possess. Multiple studies during the 1930's and 1940's attempted to establish the nature of these special traits but many discounted the theory on the basis that it was impossible to establish a universal set of traits that were associated with good leadership (Buchanan and Huczynski 2004).

Lack of consistent evidence for a universal set of leadership traits or competencies focused attention instead on how leaders behave (Fulop and Linstead, 1999). Numerous studies have resulted in a variety of taxonomies that differ in their level of generality and the methods used to develop them (Yukl, 2013). Early theories were based on the assumption that there is one right style of leadership but attention soon moved to 'contingency' approaches where the importance of situation and context were emphasised. The Leader-member Exchange Theory developed by George Graen argued that a leader may display different leadership styles with

different subordinates (Fulop and Linstead, 1999). In models that consider leadership to be broader than a supervisory relationship, the role of influence in leadership success becomes important. The emphasis of leadership is shifted from one of task versus relationship behaviours to an emphasis on providing a sense of direction and purpose, creating vision and leading change. One of the most dominant theories to emerge from this discourse was that of transformational leadership (Fulop and Linstead, 1999).

Although several versions of transformational leadership theory have emerged since the early work of Burns (1978), the most often cited is the version formulated by Bass (1985). Like Burns, Bass contrasts transformational leadership with transactional leadership but does not see them as mutually exclusive; effective leaders will use both. Transformational leadership is aligned with follower motivation while transactional leadership is aligned with follower compliance. Transformation and transactional behaviours are summarised in Table 3.1.

Table 3.1: Transformational and Transactional Leadership Behaviours

Transformational Leadership Behaviours	Transactional Leadership Behaviours
<p>Idealised Influence Setting an example, self-sacrifice</p> <p>Individualised Consideration Influencing new perspectives and creative solutions</p> <p>Inspirational Motivation Providing support, encouragement and coaching to followers</p> <p>Intellectual Stimulation Communicating an appealing vision and using symbolism</p>	<p>Contingent Reward Clarification of expected goals and use of incentives to influence motivation</p> <p>Active Management by Exception Looking for mistakes and enforcing rules to avoid mistakes</p> <p>Passive Management by Exception Using punishment and corrective action in response to deviations in expected performance</p>

Source: Based on Yukl 2013 p.313

In 2002 Yukl et. al. proposed a hierarchical taxonomy of leadership behaviours in which they suggested that the identification of three metacategories of leadership behaviour might help to deal with the *“bewildering proliferation of taxonomies on leadership behaviour”* (p.15). They argued that the effective leadership depends upon the situation and that task-orientated, relationship-orientated and change-orientated behaviours are all likely to be relevant for success. In 2012 Yukl proposed a revised version of the hierarchy in which a fourth metacategory of external behaviour was added and he expanded the original 12 leadership behaviours under these categories to 15 (Table 3.2). Yukl does not rule out the possibility that

additional metacategories should be added to the taxonomy, identifying ethical and socially responsible leadership as possible candidates (p.79) and behaviours such as “*recommending practices that reduce harmful effects for the environment*”.

Table 3.2: Hierarchical Taxonomy of Leader Behaviour

Metacategory	Behaviour	Definition
Task Behaviour	Planning	Develops short-term plans for the work; determines how to schedule and coordinate activities o use people and resources effectively; determines the action steps and resources needed to accomplish a project or activity.
	Clarifying	Clearly explains task assignments and member responsibilities; sets specific goals and deadlines for important aspects of the work; explains priorities for different objectives; explains rules, policies and standard procedures.
	Monitoring	Checks on progress and quality of the work; examines relevant sources of information to determine how well important tasks are being performed; evaluates the performance of members in a systematic way.
	Problem solving	Identifies work-related problems that can disrupt operations, makes a systematic but rapid diagnosis, and takes action to resolve the problems in a decisive and confident way
Relations Behaviours	Supporting	Shows concern for the needs and feelings of individual members; provides support and encouragement when there is a difficult or stressful task, and expresses confidence members can successfully complete it.
	Recognising	Praises effective performance by members; provides recognition for members achievements and contributions to the organisation; recommends appropriate rewards for members with high performance.
	Developing	Provides helpful feedback and coaching for members who need it; provides helpful career advice; encourages members to take advantage of opportunities for skill development.
	Empowering	Involves members in making important work-related decisions and considers their suggestions and concerns; delegates responsibility and authority to members for important tasks and allows them to resolve work-related problems without prior approval.

Table 3.2 continued

Change Behaviours	Advocating change	Explains an emerging threat or opportunity; explains why a policy or procedure is no longer appropriate and should be changed; proposes desirable changes; takes personal risks to push for approval of essential but difficult changes.
	Envisioning change	Communicates a clear and appealing vision of what could be accomplished; links the vision to member values and ideas; describes a proposed change or new initiative with enthusiasm and optimism.
	Encouraging innovation	Talks about the importance of innovation and flexibility; encourages innovative thinking and new approaches for solving problems; encourages and supports efforts to develop innovative new products, services or processes.
	Facilitating collective learning	Uses systematic procedures for learning how to improve work unit performance; helps members understand causes of work unit performance; encourages members to share new knowledge with each other.
External Behaviours	Networking	Attends meetings or events; joins professional associations or social clubs; uses social networks to build and maintain favourable relationships with peers, superiors, and others who can provide useful information or assistance.
	External monitoring	Analyses information about events, trends, and changes in the external environment to identify threats, opportunities and other implications for the work unit.
	Representing	Lobbies for essential funding or resources; promotes and defends the reputation of the work unit or organisation; negotiates agreements and coordinates related activities with other parts of the organisation or with outsiders.

Source: Yukl (2012)

More recent discourses emphasise moral and ethical concern. Authentic leadership, for example, emphasises self-knowledge and clarity about personal values and convictions (Shamir and Eilam, 2005). Rather than an emphasis on skills and behavioural style, the emphasis is on self-development. An agreed definition of authentic leadership is yet to emerge (Coetsee and Flood, 2013) but consistent themes can be identified. Shamir and Eilam (2005) suggest that the characteristics of authentic leaders include leading from conviction in order to make a difference rather than for status or personal reward; operating from a personal point of view that has developed from experiences and personal reflection and learning; and acting and talking in a way that is consistent with personal belief. Coetsee and Flood (2013) identify qualities such as honesty, integrity, credibility, dependability, self-awareness and self-regulation as characteristic of authentic leaders. A moral component to authentic leadership is emphasised by some authors (Ladkin and Taylor, 2010; Gardner et. al., 2005) while Avolio et. al. (2004) note that authentic leadership can incorporate transformational and ethical leadership.

The concept of responsible leadership has also emerged in recent years and is gaining increasing attention (Waldman, 2011). Unlike other emergent leadership discourse such as authentic and ethical leadership, responsible leadership explicitly incorporates concern for the natural environment (Pless and Maak, 2011) but differs from ecocentric leadership in the degree of centrality of environmental concern. Responsible business management, according to Laasch and Conaway (2015), incorporates a triple bottom line construct of sustainability, responsibility to stakeholders and ethics. Waldman (2011) describes responsible leadership as “*actions and decisions on the part of people in leadership positions that should balance the needs and concerns of a variety of stakeholder entities...[including] employees, shareholders, customers, the environment and the greater community in which a firm exists.*” (p.77). Indeed, Waldman and Galvin (2008) argue that responsibility is “*at the heart of what effective leadership is all about.*” (p.327) but is missing from other leadership discourses including those of authentic, ethical and transformational leadership (Pless and Maak, 2011). As well as positive organisational outcomes, responsible leadership seeks to contribute to positive social change through cooperation, networking and the cultivation of relationships with a wide range of stakeholders (Pless and Maak, 2011).

3.3 Environmental Leadership

Turning specifically to environmental leadership, a number of authors have provided definitions. Berry and Gordon (1993) for example define it as “*... the ability of an individual or group to guide positive change towards a vision of an environmentally better future*” (p.3). Similarly, Egri and Herman (2000) define it as “*the ability to influence individuals and mobilize organizations to realise a vision of long-term ecological sustainability*” (p. 572). Despite these definitions resonating strongly with generic definitions of leadership, a number of authors argue that environmental leadership is different from traditional leadership. These differences arise because, it is argued, environmental leaders have a different, “ecocentric” belief system (Shrivastava, 1994; Egri and Harman, 2000; Boiral et. al., 2009). In addition, Boiral et. al. (2009) identify the need for environmental managers to be able to “*(i) deal with the complexity of environmental issues; (ii) integrate seemingly contradictory outlooks; (iii) understand and address the expectations of a wide range of players; and (iv) profoundly change organisational practices*” (p. 483). This supports the views of Berry and Gordon (1993) who argue that environmental leadership differs from traditional leadership, identifying the need for long term solutions coupled with an ability to cope with the complexity of environmental systems, the interconnectedness of human emotions and attitudes with the environmental debate, and the need to integrate knowledge from multiple sources as key areas of difference. Catasús et. al.

(1997) also argue that the role of the environmental manager differs to that of traditional managers since success requires an ability to *“listen to and interpret three voices”* (p.199). In addition to the internal and external demands that most managers would be expected to respond to, environmental managers also need to take account of nature's demands. Environmental managers are *“an ombudsman for the environment as well as a manager in the organisation.”* (Catasús et. al.,1997, p.198). More recently Quinn and Dalton (2009) conclude from their work with US sustainability leaders that *“Leaders adopting sustainability practices are similar to other “effective” leaders and yet, they also have additional capacity and mindset to include wider expanse of stakeholders and a different mindset as to the purpose of organizations”* (p. 21). Kurtland and Zell (2011) argue that today's sustainability managers must *“fulfil traditional management functions such as planning, organizing, directing, influencing and controlling – and yet go far beyond, to be able to influence individuals and entrenched systems and practices ...”* (p.49) in order to *“challenge the status quo”* and drive change within their organisations.

Boiral et. al. (2009) note that *“effective environmental leadership is not limited solely to senior management”* (p.481). Champions of the environmental agenda capable of translating vision into action and promoting the environmental agenda to senior management and other staff are essential. Taylor et. al. (2012) support this view, noting that environmental change often involves formal and informal leaders who span managerial levels and exert influence both top-down and bottom-up. Ferdig (2007) suggests that sustainability leaders are *“anyone who takes responsibility for understanding and acting on sustainability challenges... whether or not they hold formal leadership positions”* (P.25).

Based on the ideas drawn from ecology such as interdependence, diversity and balance, Western (2010) argues that eco-leadership will be the prevalent discourse of the 21st century. Eco-leadership, he argues, needs to *“... shift the focus from individual leaders to leadership”* (P.44). This creates diversity, enhancing adaptability and sustainability. Western does not dismiss other discourses but argues that they need to operate within the boundaries that the environment imposes. Wielkiewicz and Stelzner (2012) argue that a new leadership paradigm needs to draw upon the ‘talent and capacities’ that exist in the organisation. Eco-leadership therefore rejects the dominance of ‘positional’ leaders suggesting instead that leadership emerges from the interactions of individuals rather than the action of leaders. Dive (2008) agrees, identifying the need for distributed leadership where the concept of sustainability is understood at all leadership levels.

3.4 The Values and Self Identity of Environmental Managers

3.4.1 Values

Literature on environmental leadership emphasises the importance of the leader's personal environmental value systems in both motivating their actions and shaping their vision for their organisation. Logically, the more ecocentric an individual's view point, the more likely they are to promote an ecocentric vision within their organisation and be committed to meaningful environmental improvement. According to Fineman (1996), *"We might expect a manager who is morally committed to environmentalism in private life to wrestle differently with green pressures than one who is simply expressing the green face of corporate policy"* (p.480).

Egri and Herman's (2000) work on leadership in the North American environmental sector provides a detailed analysis of the value systems that typify environmental leaders. Using the Dominant Social Paradigm (DSP) (anthropocentric/technocentric) – New Environmental Paradigm (NEP) (ecocentric) continuum², they concluded that environmental leaders' value systems are more strongly aligned with the NEP and that leaders in the not-for-profit environmental sector have more ecocentric values than those from the for-profit environmental sector. Kurland and Zell (2011) agree, arguing that sustainability managers must hold a *"sustainability friendly mental model"* (p. 49) with most of the managers in their study having a deep concern for the natural environment. Cantor et. al. (2013) explore the importance of the environmental managers' environmental commitment to their success at championing environmental management practice in their organisation, and conclude that the stronger their commitment, the more successful they are likely to be. They also showed that commitment was linked to levels of personal environmental behaviour. Duarte (2010) similarly concluded that the personal values of CSR managers play an important role in the development and maintenance of social and environmental principles in their organisation's CSR culture, with personal values such as respect for people and the environment being enacted through their discretionary powers as managers.

² The NEP/DSP scale was introduced in 1978 by Dunlap and Van Liere but later revised by them (Dunlap et. al., 2000). It has become the most widely used measure of environmental attitudes (Hawcroft and Milfort, 2010; López-Bonilla and López-Bonilla, 2015). The 2000 scale uses 15 items to measure an individuals' general beliefs about the relationship of humans to the environment, contrasting ecocentric beliefs with the dominant anthropocentric belief system of western society (Dunlap et. al., 2000).

In contrast, Boriel et. al. (2009) argue that the NSP/DSP distinction is too simplistic and adherence to the NEP is not essential to environmental action. Fineman's study of managers in the UK automotive industry (1997) supports this view. Even those with responsibility for environmental issues in their organisation did not show strong private moral positions on the environment. Crane (2000) similarly found environmental managers, particularly in the commercial sector, disassociating themselves from a personal moral agenda (p. 681). The question perhaps then is whether environmental managers act because that is what their job requires or because they feel a deeper moral obligation to protect the environment. This in turn may be a reflection of how environmental managers have entered what is now a very diverse profession. For some the role has been 'acquired' as an addition to their substantive post while for others it is central to what they do, "*a vocation and not merely a job*" (Thomas, 1993 p.40). Recent data published by IEMA suggests that 42% of its members are "career changers", entering the profession from a range of different first careers (IEMA, 2015). The dichotomy of moral stance shown in the literature may also be a function of the sectors studied; the environmental sector one could well expect to attract those with a strong environmental vocation, much more so than an industry such as the automotive industry which is inherently damaging to the environment.

The environmental value systems of environmental managers may not necessarily align with those of their organisation. As explored in Chapter 2, organisational response to the environmental agenda may differ markedly and for many organisations that are actively pursuing an environmental change agenda, economic benefit through essentially technocentric approaches, still remains the primary motivational force (thus aligning with the DSP). In these organisations ecocentric managers may find their personal value systems at odds with the organisations' culture. Fineman (1996), in studying corporate greening in the supermarket sector, provides examples of environmental managers feeling "*isolated and disheartened*" (p. 488) when their personal pro-environmental beliefs and enthusiasm had to be tempered, or their attempts to instigate change were treated with indifference within a less ecocentric organisational culture. Finding ways to implement environmental change without drawing upon pro-environmental beliefs, was viewed as a skill. Harris and Crane (2002) similarly report that being identified as a pro-environmental change agent could result in 'marginalization' in some less sympathetic or conservative organisational cultures. Catasús et. al. (1997) in contrast, suggest that the misalignment between organisational and personal values may not be that great since organisations select who works for them and, therefore, are unlikely to employ someone who is ideologically opposed to their business goals. In a more recent study on environmental manager-organisation value congruence, Duarte (2010) notes a link between personal and organisational values in a small scale study of Brazilian CSR

mangers while Spanjol et. al. (2015), looking more broadly at employee environmental orientation, conclude that high levels of environmental concern at both the organisation and employee level (thus high congruence) results in greater job satisfaction and creativity.

A number of authors have considered the wider value systems of environmental managers. Egri and Herman (2000) and Janquera and Ordiz (2002) use Schwartz value system. Schwartz (1994) identified ten universal values which were further grouped into four value types. The value types are considered to form two bipolar dimensions, thus, Openness to Change (Self-direction, Stimulation and Hedonism) opposed to Conservatism (Security, Conformity and Tradition) and Self-Enhancement (Hedonism and Achievement) opposed to Self-Transcendence (Universalism and Benevolence). Universalism and benevolence are the values most aligned with caring for the welfare of nature and people, which would suggest that environmental managers are more likely to display self-transcendent values. Egri and Herman (2000) also suggest that an environmental leader's desire to see a move away from unsustainable practices would mean a greater alignment with openness to change values than conservatism values. Their study of environmental leaders in the North American environmental sector supported this view with all showing strong self-transcendence and thus motivation from the promotion of the welfare of others (and nature) rather than self-interest.

However, despite the emphasis in the environmental leadership literature on personal moral stance and values, it is unreasonable to assume that these alone will determine the success of an environmental manager. Indeed, Drumwright (1994) concludes from her work on social and environmental 'policy entrepreneurs' (see Section 4.4.4 for further discussion on environmental entrepreneurship) that skills and capabilities rather than the depth of moral commitment were the factors most important in success (p.12).

3.4.2 Self Identity

Wright et.al. (2012) argue that the tensions created by multiple conflicting demands and misalignment between personal and organisational environmental discourse highlight the need to understand environmental (sustainability) managers' self-identities which are, in part, linked to their personal values. Working with sustainability managers from Australian global corporations, specifically in the context of corporate response to climate change, they explore the various identities enacted by the managers. Three separate identities were identified but their work concluded that "*Rather than an individual being characterized by a single identity ... most ... interviewees enacted multiple identities dependant on the context they described ...*" (p. 1458). Different home and work identities and within work identities, depending upon

context and association (like-minded colleagues versus senior management), were identified. However, underpinning these identities, Wright et. al. identified a number of themes “*achievement, transformation, epiphany, sacrifice and adversity*” (p. 1467) which characterised sustainability managers’ self-identities, aligning with the heroic frame often associated with managerial and professional identity. These identities and their impact on approaches to change, are explored further in section 4.4.3. The importance of self-identity in promoting change is explored further in Chapter 4.

3.5 Skills, Attributes and Knowledge of Environmental Managers

3.5.1 Skills and Attributes

Friedman (1992) argues “*people skills represent a management tool equally as important as possessing a technical understanding of environmental management*” (p.26). McLean (2010) makes a similar argument and comments that environmental managers today are more likely to focus on “*green markets, branding, community relationships and internal and external communications*” (p.103) than the more scientific and regulatory elements of environmental management that would in the past have dominated the role. Environmental managers therefore need to be skilled not only in the technical elements of environmental management, but need to be able to interpret the environmental agenda across a wide range of functions within their organisation and process the leadership skills needed to drive, or at least support, change.

The work of Arnaut et. al. (2012) supports this view. Taking the management skills model developed by Robert Katz in 1955 as the theoretical model against which to assess the skills base of environmental managers in the Brazilian Food Industry, they conclude that the effective environmental manager needs to combine technical, conceptual and human skills (Table 3.3). Similarly, Egri and Herman (2000), in studying environmental leadership in the North American Environmental Sector, reported the majority of environmental leaders as identifying the need for high levels of interpersonal skills, technical and conceptual skills. Political skills were also identified as important by a quarter of participants.

Table 3.3: Key Skills Required of Environmental Managers

	Company A	Company B	Company C
Technical Skills	<ul style="list-style-type: none"> • Mapping and analysing environmental aspects and impacts • Using continuous improvement tools 	<ul style="list-style-type: none"> • Preventing pollution • Operating company effluent treatment system • Reducing solid waste generation and atmospheric emissions 	<ul style="list-style-type: none"> • Applying quality management tools • Designing and tracking environmental quality indicators
Conceptual Skills	<ul style="list-style-type: none"> • Integrating environmental themes into planning, organisation, direction and control of business results 	<ul style="list-style-type: none"> • Continuously reviewing the alignment between company's environmental policy and its environmental goals • Reducing environmental nonconformities 	<ul style="list-style-type: none"> • Relating the EMS to other corporate systems • Continuously seeking better environmental management practices
Human Skills	<ul style="list-style-type: none"> • Pro-activity • Innovativeness • Courage • Ability to focus on results and put discourse into practice • Ethics 	<ul style="list-style-type: none"> • Communication • Ability to promote interaction with other areas of the company 	<ul style="list-style-type: none"> • Leadership • Ability to negotiate • Assertiveness • Communication skills

Source: Arnaut et. al. (2012)

Boriel et. al. (2008) emphasise the levels of complexity that environmental managers must deal with, including reconciling the various view points of a diverse range of stakeholders. Reaching compromise and promoting cooperation, they conclude, requires strong interpersonal skills, including empathy and emotional consideration. The constantly changing nature of the environmental agenda, they argue means the environmental manager also requires an ability to anticipate and adapt.

Portugal and Yukl (1994) explore the need for environmental leaders to be able to exert influence. They identify two levels of influence (individual and organisational) and two types of influence relationship (internal and external) that they feel are important in effective environmental leadership. These concepts are combined in a two dimensional model of environmental leadership (Figure 3.1).

Individual influence refers to the interactions of leaders with individuals or groups in which the leader attempts to influence behaviour. Influence may be exerted on superiors, subordinates or peers. Organisational influence, in contrast, is exerted by using '*legitimate authority*' (p.272)

and involves both indirect influence by changing policies, structures and culture as well as the direct influencing of large numbers of people at the same time. To be successful, leaders must understand how to use both levels effectively in a ‘*mutually supportive way*’ (p.273). Internal leadership refers to the influencing of members of the same organisation while external leadership involves influencing a wide range of stakeholders from outside the organisation. Both may involve individual or organisational levels of influence. To be an effective leader, it is argued, the importance of all these elements must be understood and “*the diverse and competing demands in these relationships*” reconciled (Portugal and Yukl, 1994 p.273).

In this framework the successful environmental manager, it would seem, must be competent at building support and networks both internally and external to the organisation, be an effective strategist, who can gather, analyse and utilise data to determine appropriate actions and objectives and be a skilled communicator who can through lobbying, negotiating and promoting, motivate others to take action.

Figure 3.1: Framework for Environmental Leadership

		Type of Relationship	
		Internal	External
Level of Influence	Individual		
	Organisational		

Source: Portugal and Yukl (1994)

Catasús et. al. (1997) similarly assert that environmental managers need to be able to consider both internal and external demands but add a third dimension; that of nature. These demands are identified as the constraints that nature places on what we can do and incorporates the laws of thermodynamics and ecosystem services (provisioning, regulating, supporting and intrinsic services). Unlike internal and external influences, nature does not have a voice of its

own and so the environmental manager must act on its behalf interpreting its demands and boundaries.

The balance between these three influences is studied by Catasús et. al. (1997) in their work with Swedish environmental managers. They conclude that environmental managers expend most of their effort dealing with and responding to internal demands, such as building the business case for environmental management and aligning activities with profitability and product quality. External demands such as legislative drivers and customer requirements were viewed as very important by environmental managers and indeed, were welcomed as they were seen as powerful drivers for getting top and middle management's attention. Interestingly, despite the environmental manager's personal beliefs, the intrinsic value of nature was not seen as an "*independent stakeholder*" and "*environmental care is only instrumental*" (p.204) in a business context, reflecting the degree of change still needed in the majority of organisations if ecocentric leadership models are to become the norm.

Environmental managers need to be skilled in reinterpreting or re-badging environmental work in a more mainstream business context. They must also be skilful in determining the right rhetoric to use at different levels in the organisation to gain support. External influences demand excellent communication skills in order to address the demands of stakeholders and promote effectively the actions of the organisation. Anderson and Bateman (2000) explore the importance of '*issue framing*' and '*issue presentation*' for success as an environmental champion. They argue that making choices about which attributes of an issue to emphasise and the language to use in presenting an issue, can make a difference to the success of a championing episode. Their findings suggest that the ability to frame environmental issues as a financial opportunity is likely to be most successful. Framing as urgent, of local importance, simple, cutting-edge, of relevance to company values and as good publicity were also identified as important. The need to use 'business jargon' rather than emotion and drama in presenting issues was found to be most successful. Catasús et. al. (1997) present similar findings from their work with Swedish Environmental Managers. The ability of environmental managers to appropriately *re-label* environmental issues was identified as important. However, Catasús et. al. suggest that re-labelling environmental issues as financial benefits may not be successful at all levels in an organisation, and in fact re-labelling cost savings that are primarily for other purposes as environmental, may get better buy in from those below management levels. Kurland and Zell (2011) also highlight the need for sustainability managers to be able to make the business case and help to clarify their organisations 'green vision'. They suggest that being able to argue return on investment in terms of operational efficiencies and strategic value, as well as costs savings, is important. Sustainability managers must however, be able to tailor the message to the audience and find the right language and the right messages to motivate each

group of staff. Quinn and Dalton (2009) reach similar conclusions. Using Van Velsor and McCauley's (2004) tasks of leadership framework, they suggest there are three particular emphases needed for framing and delivery of the message:

1. positive and compelling delivery (avoid doom and gloom, focus on the positive and use vivid examples, emotion and creativity in communicating the message);
2. relating sustainability to language of business (use 'business speak', linking in particular to financial factors and practicality); and
3. relating the message to employees' interest in meaningful work (tap into employees' motivation to do the right thing, focus on legacy and future generations) (p. 27).

Crane's (2000) work on amoralisation of corporate greening suggests that successful framing strategies will differ between organisation types. In the commercial sector, discourse around economic efficiency and cost dominated (p.682) while for retail companies, framing greening initiatives as good for the customer was identified as important (p.687). Some social mission organisations identified the value of framing around novelty and distinction (p.687) while others felt it was more important to quell "*the difference narrative, emphasising a certain normality instead*" (p. 688).

Rothenberg (2007) identifies the need for framing of an issue to potentially change over time as external drivers and/or organisational context changes. For example, legal compliance may be used initially to frame the need for environmental action but once compliance is achieved, further action may need to be framed in the context of financial savings or operational efficiency.

The literature therefore suggests that a successful environmental manager needs to have a clear understanding and appreciation of organisational context and culture and be able to interpret and present their environmental message in a manner that aligns with this and have the ability to reinterpret the message for different audiences.

Drawing on the work of Egri and Herman (2000) in which need of affiliation was identified as important for success, Frenández et. al (2006) identify the ability to establish relationships with others, and thus team working, as being important for the successful environmental managers. Junquera and Ordiz's work (2002) with Spanish companies confirmed that team forming was characteristic of companies with better environmental performance. Team working ability is closely linked to strong interpersonal and communication skills. Quinn and Dalton (2009) identify '*building networks and sharing*' outside of the organisation as important in the success of sustainability managers. They argue that "*reciprocal networks help maintain momentum, standards, and best practice within an industry segment. Sharing best practices changes the*

external environment so that what was radical becomes the norm" (p. 33). Kurland and Zell (2011), Crane (2000) and Benn et. al. (2014) also identify collaborative working and the building of industry coalitions to share best practice as important. The value that networks might have for individual environmental champions as a forum for interaction with other environmentally committed individuals, *thus "surfacing or re-surfacing individual environmental commitment which might otherwise be stifled"* in their workplace (Crane, 2000 p. 684), and as a source of support in *"what is an emotionally demanding endeavour"* (Benn et. al., 2014 p.305), is also highlighted.

The constant emergence of new information and insights in relation to the environment, according to Hanson and Middleton (2000), means *'eco-sensitive'* leaders need an ability to tolerate ambiguity coupled with an awareness of the need for continual learning. As identified in Chapter 2, ecocentric organisational models are holistic, requiring the engagement of all staff. This in turn, Hanson and Middleton argue, requires eco-sensitive leaders to be tolerant of the diversity of ideas of others, to *"have a positive view of human nature"* and *"faith in their own ability to influence it"* (p.97). They also identify the need for persistence in order to change culture, and the ability to operate with a *"long-term (at least generational) time-frame"* (p.98). Redekop (2010) notes the importance in eco-centric leadership of vision and future orientation along with systems thinking.

Egri and Herman (2000), in proposing a model of environmental leadership, identify a number of personality characteristics of environmental leaders; *"need for achievement, need for affiliation, emotional maturity, self-confidence and need for power"* (p.597). These align closely with the kinds of traits for effective leadership identified generally (see for example Yukl, 2013). Taylor et. al (2012) include personal characteristics such as persistence, tolerance to uncertainty, enthusiasm and energy in their conceptual model of factors likely to contribute to effective environmental championing (p.91).

Kakabadse et. al. (2009) suggest from their work with managers in 65 organisations worldwide that there are ten skills and capabilities that CSR leaders require with the stage of engagement by the organisation influencing which are most prevalent, thus emphasising the need for continual development and learning. These are summarised in Table 3.4.

Table 3.4: Skills and capabilities of CSR leadership

Stage*	Skills/Capabilities	Description
CSR Decision	CSR Awareness	Awareness and knowledge of CSR provides conviction and wisdom to craft a new future and change of old behaviours
	Reflexivity	Reflects on issues and actions both <i>“in vivo”</i> and <i>post hoc</i>
	Discerning CSR goals	Clarifying what is and what is not a CSR goal requires definition and commitment to sustainability
CSR Adoption	Using business case language	Ability to present CSR as a business case rather than as emotional appeal for doing good or moral argument
	Persuasion	Ability to get buy-in from others to support and own CSR initiatives
	Handling paradoxes and conflicting priorities	Able to see a way forward when confronted with two or more contrasting forces pulling in different directions, whilst at the same time not being able to simply opt for one or the other, but having to reconcile both alternatives that are contradictory, or accept their temporal or permanent coexistence
	Consistency of application	Consistent application of CSR message through all organisational activities (i.e. not only isolated or symbolic action of “doing good”). That is emotional zest and attention to detail in a consistent and sustainable manner
	CSR measurement	Ability to know and define clearly what success will look like so that appropriate measures can be designed, ability and willingness to monitor CSR performance for accountability
	Follow through	Ability to follow through from initiative to application, which requires discipline and passion for results
CSR Commitment	Will to act	Staying power combined with sense of purpose and mission to make CSR vision work

*see Chapter 4 section 4.2.2 for description of stages.

Source: Kakabadse et. al. (2007)

3.5.2 Knowledge and Qualifications

The strong emphasis in the literature on the importance of broad and largely generic leadership skills may imply that technical environmental knowledge is of less importance to today’s environmental manager. MacLean (2010) expresses concern about this emphasis, postulating that the future of the profession is in danger if managerial experience counts for more than technical qualifications. The lack of detailed exploration of technical knowledge requirements by many authors however, may be more a reflection of the view that good environmental knowledge is a given rather than a dismissal of its importance.

Anderson and Bateman (2000) in their work on environmental champions explore the importance of ‘*scanning*’ in success as an environmental champion. They argue that the more sources of environmental information and data a champion can access the more chance they have of “*developing a meaningful and positive presentation of a given environmental issue to top management*” (p.550). Of course accessing information is not enough. To be able to identify what is important and to interpret that information needs a certain level of technical knowledge. The complexity of the environmental agenda is cited as one of the elements that distinguish environmental leadership from leadership in general (see section 3.3) thus suggesting environmental leaders must have broad environmental knowledge. Ballard (2005) notes that there is “*no guarantee that actions will actually benefit the environment without appropriate knowledge*” (p.140).

Friedman (1992) suggests that environmental managers must have understanding of environmental issues and ethics and have “*substantive knowledge of the legal system*” (p.26). Taylor et. al. (2012) identify the need for excellent knowledge of the organisation and the industry in addition to environmental issues. Moreover, according to Hanson and Middleton (2000) “*knowledge of the expanding boundaries of sustainable operation and awareness that continual learning is required to keep pace with new information*” (p.97) is fundamental to eco-sensitive leadership. Shiel (2013) and Ferdig (2007) similarly identify the importance of commitment to learning and a spirit of enquiry as key attributes for sustainability leaders.

There is little research, however, on the educational backgrounds of environmental managers. Egri and Herman (2000) provide a brief profile of the environmental managers in their study concluding that their sample had a “*relatively high level of formal education*” (p.584) but disciplinary backgrounds were varied with few having specific environmental science qualifications.

Results from practitioner surveys perhaps provide the best insight into the qualifications of environmental professionals. The IEMA 2015 Practitioner Survey concludes that only 3% of the profession have no formal qualifications while 26% are qualified to degree and 47% to Masters level. The 2017 survey reveals a significant rise in postgraduate qualified members to 61% with 4% of these having a doctorate. Similarly, a survey of corporate responsibility and sustainability professionals (Carnstone, 2014) concludes that professionals working in the field of Corporate Social Responsibility are well educated with 90% having a first and/or postgraduate degree. In terms of discipline background, the IEMA 2017 Practitioner Survey reports environment and earth science as the most common subjects studied but identifies a diversity of other subjects at first degree level, including geography, engineering, and architecture. At Masters level, 66% had studied environmental management/assessment or

related subjects, with some also having studied business studies or law. For corporate responsibility and sustainability professionals, Carnstone (2014) reports that first degrees tended to be in non-CSR related subjects (64% of respondents) while higher qualifications at masters and doctorate level tended to be more specialised, with 66% respondents having completed a CSR related qualification.

3.6 Leadership Approach of Environmental Managers

Literature specifically emphasising the leadership styles of environmental managers is limited. Earlier literature focuses on the leadership behaviours aligned with transformational and transactional leadership. Portugal and Yukl (1994), for example, suggest that transformational leadership models align best with the types of behaviours most likely to be used by environmental managers; visioning, sense-making and symbolic action in particular are identified as essential behaviours.

Similarly, Egri and Herman (2000) draw upon a range of literature, including case studies of visionary environmental leaders, to hypothesise that transformational leadership characteristics are more likely to be prevalent amongst environmental leaders. Presenting an inspiring vision, a charismatic approach to inspiring others, empathy and risk taking are amongst the transformational characteristics identified as important. However, contrary to this hypothesis, their study found that transformational and transactional leadership behaviours were often required and in fact, the most frequently mentioned leadership behaviours amongst their study participants were transactional ones. They concluded that environmental leaders are operating as what Quinn (1988) refers to as 'Master Managers', demonstrating both transformational and transactional leadership characteristics. The dominant predisposition of participants shown through findings regarding personal values, however, was towards transformational leadership behaviours, leading Egri and Harmen to conclude that organisational context might have an important influence on the behaviours exhibited by environmental leaders.

Janquera and Ordiz (2002) found no characteristics of transactional leaders amongst their study group of managers from companies with high levels of environmental performance, concluding instead that managers in such companies must be of the transformational type (p.49). In companies where the environmental vision is firmly embedded in organisational culture, environmental managers may be more able to assume the role of transformational leader, promoting the vision, supporting and encouraging others to take action. Indeed, Hanson and Middleton (2000) argue that in truly eco-sensitive organisations leaders need to

be transformational in order to be able to *“create and communicate a different vision”* (p.98). In less environmentally orientated organisations, or those more heavily regulated by external agents, coordination, monitoring and direction of environmental action may be more prevalent and thus transactional leadership styles more prevalent. This view is supported by Benn et. al. (2014) who suggest that the leadership qualities needed will depend upon the stage in the evolution of the sustainable corporation. At the ‘compliance phase’ transactional and distributed leadership is required; at the ‘efficiency phase’ distributed and enabling leadership is needed; at the ‘strategic proactivity phase’ enabling and transformational leadership is important; and finally at the ‘sustaining corporation’ phase transformational and complexity leadership are essential (Table 3.5). Egri and Harman (2000) also suggest that organisational size may be important, hypothesising that managers in larger organisations might be more able to *“delegate transactional managerial tasks to others”* (p.597). Organisational context is explored further in section 3.6.

Hind et. al. (2009) argue that models of leadership such as transformational and transaction leadership that focus on personality traits, ignore organisational complexity, and that ethical context will act as a moderator of both individual characteristics and situational influences. In their work with leaders in European-based multinational companies they identify a set of competencies for responsible business behaviour and five “reflexive abilities” (a combination of emotional and intellectual capacity) (p.15) that are important in the ethical and responsible leadership approaches they consider necessary for sustainability leadership. These are summarised in Table 3.6. Laasch and Conaway (2015) similarly identify the need for a Responsible Management model if business is to deal with the unsustainable approaches blamed on mainstream management practices. Responsible management, they argue *“assumes responsibility for the triple bottom line (sustainability), stakeholder value (responsibility) and moral dilemmas (ethics).”* (p. 25). Ultimately responsible management must operate at all levels of management within an organisation and be practiced by both those with a mainstream and a specialised role (such as sustainability or environmental managers). They contrast competencies for traditional mainstream (rather than specialist) management roles with those needed to practice responsible management (Table 3.7).

Table 3.5: Leadership Transition to Corporate Sustainability

Transition Phase	Characteristics	Leadership Type	Leadership Characteristics
Compliance	Meeting legal and statutory requirements and the legitimate demands of stakeholders. Creation of a culture of compliance	Transactional and Distributed	Establish trust and rewards behaviour aligned with established norms. Builds leadership capability at all levels of the organisation
Efficiency	Minimising waste and maximising resource efficiency within existing strategic direction. Creation of networks for information sharing and the development of novel approaches.	Distributed and Enabling	Negotiate changes external to the organisation and continue to promote action at all levels within the organisation. Create the structures and interactions to enable others to innovate and lead
Strategic Proactivity	Strategic reorientation of the organisation, its products and services. Development of a new shared vision.	Enabling and Transformational	Create and expand a culture of voluntarism. Inspiring and motivating others
Sustaining Corporation	Embraces a range of activities that contribute to the health of the planet and society on which it depends as an organisation. The organisation is part of a complex system	Transformational and Complexity	Continue to reinforce the vision. Emphasise heterarchy, heterogeneity, and distributed knowledge; recognise the need from dynamism and creativity

Based on Benn et. al. (2014) p. 290-293

Table 3.6: Competencies and Reflexive Abilities of Responsible Leaders

<p>Knowledge</p>	<ul style="list-style-type: none"> • Understanding the competing demands of different stakeholder groups; • Understanding how the core business activities create opportunities for other actors in society and how the company can contribute to society; • Understanding the social and environmental risks and opportunities of the company and its industry sector; • Understanding the institutional debate on the role and legitimacy of the firm.
<p>Skills</p>	<ul style="list-style-type: none"> • Well founded and balanced judgement; • Critical thinking; • Team player; • Creativity, innovation and original thinking; • Communication and credibility; • Business acumen; • Listening skills; • Managing stakeholder network relationships; • Emotional intelligence.
<p>Attributes</p>	<ul style="list-style-type: none"> • Honest and integrity; • Long-term perspective; • Open-mindedness; • Appreciating and embracing diversity; • Conviction and courage; • The drive to contest resistance; • The capacity to think outside of the box.
<p>Reflexive Ability</p>	<p>Systemic thinking Understand the interdependency of systems across the business and between business and society, appreciating social and environmental complexity, interpret the signals given by actors in the market and respond appropriately</p> <p>Embracing diversity and managing risk Respect and acknowledge diversity, build heterogeneous teams that reflect the diversity in which they operate in order to maximise learning, seek common ground without forcing consensus</p> <p>Balancing global and local perspectives See and appreciate the impact of local decisions on the global stage, understand the limits of corporate responsibility and be willing to take action</p> <p>Meaningful dialogue and developing a new language Maintain meaningful dialogue with others by listening, inquiring and responding accordingly; understanding the pertinent issues at the intersection between business and societal issues</p> <p>Emotional awareness The ability to understand the broader implications of decisions and actions on others; capacity to identify the inter-relationship between thoughts, behaviours and emotions; tolerance of unusual/unorthodox approaches; empathy, perception, curiosity, reticence, sensitivity, sense of humility.</p>

Source: Hind et. al. (2009) p.16-17

Table 3.7 Competencies of Traditional and Responsible Mangers

Competence Group	Traditional Management Competencies	Responsible Management Competencies
Domain (to know)	Technical (knowledge of and proficiency in a certain specialised field)	Responsible management background domains: sustainability (triple bottom line), responsibility (stakeholders), ethics (morally right decisions). Responsible management tools (or manager's sphere of influence)
Procedural (to do)	Conceptual and diagnostic (analysing complex situations and providing an adequate response)	Systems thinking Interdisciplinary work Ethical, sustainable and responsible decision making.
Social (to interact)	Political (exerting influence) Communication Leadership Delegation	Stakeholder networking and communication Change agency skills (leadership) Critical skills
Self (to be)	Toughness (endurance of high workload and high-stress situations) Efficiency Effectiveness Loyalty (to the company)	Meta-perspective Empathy (for responsibility issues and stakeholders) Embracing attitude (towards responsible management practices) Problem awareness Sense of urgency Self-perception (especially about power)

Source: Laasch and Conaway (2015)

Pless and Maak (2011) note that responsible leaders should be accountable, trustworthy and have ethical literacy (moral reasoning and moral imagination) (p. 8). The focus of responsible leadership on stakeholder relationships means collaboration and cooperation are important and responsible leaders also need strong self-awareness and self-regulation.

The importance of ethical leadership is emphasised by D'Amato and Roome (2009). They identify the need for CR leaders to act ethically and with integrity to set an example, commenting that managers who *"openly practice sustainability in their personal lives are role models for other employees"* (p. 427). However, they consider ethical behaviour to go beyond walking the talk to ensuring transparency and talking personal responsibility for change. Ferdig (2007) similarly identifies the need for sustainability leaders to ground action in a personal ethic.

Importantly, she stresses the need for a sustainability leader to be “*a leader ‘with’ others instead of a leader ‘of’ or ‘over’ others*” (p.27). A sustainable future must be co-created.

3.7 Other characteristics

Demographic characteristics have been shown to be linked to environmental concern. In general, environmental concern is considered to be negatively linked to age and positively linked to education level. Females tend to show higher levels of environmental concern than males (Egri and Herman, 2000).

Analysis to date of the demographic characteristics of environmental managers/leaders is limited. Egri and Herman (2000) identified an average profile as being 45 years old, married with a high level of education. Males dominated but the gender split was much more equitable in not for profit organisations. Professional surveys add some further detail. The International Society of Sustainability Professionals survey forming the basis of their work on a competency framework (see section 3.10) was based on a response in which 53% of respondents were male and 61% of the respondents were aged between 35 and 54 years (Willard et.al. 2010).

Little attention has been paid to the influence of factors such as years of experience or prior experience in other organisations in determining the success of environmental managers. Frenández et. al. (2006) suggest that the broadening of horizons resulting from prior experience could have a positive effect, however, Junquera and Ordiz (2002) found no link between experience at other companies and the environmental performance of a manager’s current company. Cantor et. al. (2013) however, conclude that the longer the same environmental manager has been in post at an organisation, the greater the level of involvement the organisation will have with environmental practice.

3.8 Organisational Context and Paradigm

Berry and Gordon (1993) argue that “*all environmental leadership depends upon the context*” (P.7). Although, they argue, high levels of ability in, for example communication, conflict resolution and fiscal development (fundraising) are all important in environmental leaders, these skills may be applied differently and be relatively more or less important in different sectors. Redekop (2010) similarly comments “*Leader behaviours, values and tasks will inevitably be shaped by the environment in which leadership is enacted.*” (p6.) Organisational context (e.g. economic security, regulatory burden, stakeholder engagement) can act as an enabler or a barrier to environmental action (see section 2.4). For example, in times of austerity

environmental action may be seen by some organisations as a luxury they can ill afford while others may embrace the potential for efficiency and cost cutting. Anderson and Bateman (2000) found that external pressures such as a regulation and competition, were important in the success of environmental championing episodes, especially in supporting the framing of issues as urgent. Taylor et. al. (2012) identify environments in which there is environmental crises, rapid change and a need for new strategies, technologies and products as being particularly enabling for environmental champions. Flannery and May (1994) comment that “*Stakeholder influence may be one of the most prominent, and complex, factors impacting the development of environmental strategies of organisations*” (p. 207). For environmental manager then, an ability to identify, predict and interpret these external drivers in an appropriate organisational frame will be critical to success.

An environmental manager’s access to critical resources may also influence success. In this respect the position which the environmental manager occupies within the organisation may be important; direct access to strategic decision makers should facilitate greater impact. Conversely if there are multiple layers of decision making required, success may be more difficult or take much longer. Flannery and May (1994) argue that the fewer barriers an individual has historically encountered and currently anticipates, the more control they will feel they have. Junquera and Ordiz (2002) found that those managers “*who believe they have the capacity to change company policy, and who feel they are supported by their company in influencing strategy, achieve better environmental performance*” (p. 48). Cordano and Frieze (2000) identify the limited authority of environmental managers to initiate change and their inability to achieve cross organisational cooperation with other managers due to bureaucratic organisational structures, as possible barriers to pollution reduction activities.

The organisations’ environmental paradigm or collective values and beliefs (see section 2.2.2) will also set the context for environmental action. Logically environmental managers should find it much easier to elicit a positive response in an organisation with a strong environmental paradigm (Anderson and Bateman, 2000). Junquera and Ordiz (2002) argue that “*a manager’s perception of his company’s identity can influence his interpretations of strategic questions*” (p. 42), thus, in a more ecocentric organisation environmental issues are more likely to be interpreted as opportunities rather than threats and economic considerations balanced against wider responsibilities.

3.9 The Professional Status of Environmental Managers

While there have clearly been attempts to define the nature of the knowledge and skills base that might be associated with the role of an Environmental Manager, there would appear to be a lack of clarity about what precisely this role involves. MacLean (2010) suggests that the diversity of backgrounds and qualifications held means that the Environmental Manager is not a recognised 'brand'.

Boiral et. al. (2008) argue that the complexity of environmental issues resulting from the interaction of scientific, technical, regulatory, public policy, stakeholder and wider public concern, mean that organisations must adopt an interdisciplinary approach to environmental issues, with experts coming together from a number of departments. The need for environmental literacy and skills to be held by a range of professionals - marketing professionals, product designers, accountants, human resources managers, facilities managers and purchasing managers being amongst those identified (Desjardins, 2007; Harris and Tregidga, 2011; Wycherley, 1997) - further adds to the complexity and may result in environmental management becoming an increasingly ill-defined profession.

MacLean (2010) identifies the lack of a clear and consistent entry qualification to the profession as a problem. The view that managerial experience counts for more than technical qualifications raises concerns, according to MacLean, about the future of the environmental management profession.

Dorney (1989) argues that many traditional disciplines have professional bodies which

- Define who is and is not a member of the profession
- Define the spectrum of work that falls within the role
- Give public identity to the profession

He also comments that commonly legislation circumscribes professional identity for "*reasons of public protection*" (p.13) thus restricting those who can practice. MacLean (2010), commentating on the US situation, suggests that the lack of a professional body to provide unification is a serious issue for the environmental management profession and comments that environmental management professionals may be members of a wide array of different bodies. He also identifies the lack of an accepted competency framework and the lack of a mandatory "*certification and licensing processes*" (p.106) as critical issues for the survival of the profession.

3.10 Professional Discourse

It is important to view academic discourse on environmental leadership alongside what is happening in the profession itself. In the UK the Institute of Environmental Management and Assessment (IEMA) may fulfil some of the functions identified by Dorney (1989) and MacLean (2010) and has the largest membership. However, there are also numerous other professional bodies with which environmental practitioners may align themselves; Chartered Institution of Wastes Management (CIWM), Chartered Institute of Environmental Health (CIEH), Chartered Institute of Ecology and Environmental Management (CIEEM), Chartered Institution of Water and Environmental Management (CIWEM), to name but a few. The need for a strong unifying voice for environmental practitioners was recognised and in 2002 The Society for the Environment was formed when the leading environmentally focused professional bodies came together to “*champion and regulate the expertise of today’s environmental professionals*” (Society for the Environment, nd). The Society received Royal Charter in 2004 thus allowing it to license professional bodies to assess their members for the award of chartered status.

Chartered Environmentalists must demonstrate a set of competencies defined in four broad categories as detailed in Appendix 2. Emerging from these, Table 3.8 summarises the skills and attributes that would typify a Chartered Environmentalist.

Table 3.8: Competencies for Chartered Environmentalist

Competency	Skills and characteristics
A. Application of knowledge and understanding	<ul style="list-style-type: none"> • Critical evaluation, interpretation and problem solving • Conceptualisation, reformulation, and anticipation • Awareness of wider context, negotiation • Self-direction and originality • Active learning
B. Leading Sustainable Management of the Environment	<ul style="list-style-type: none"> • Advocacy (for the environment) • Mentoring, encouraging, motivating and influencing • Multi and inter-disciplinary collaboration • Exercising autonomy and judgement • Reflection • Self-direction and originality • Active learning
C. Effective communication and interpersonal skills	<ul style="list-style-type: none"> • Leading and sustaining debate, influencing decision making • Seeking the views and opinions of others, stakeholder engagement • Sensitivity, managing conflict • Promoting development opportunities
D. Personal commitment to professional standards	<ul style="list-style-type: none"> • Identify environmental ethical dimension • Informing and encouraging others • Desire to learn, recognising the value of learning • Professional responsibility and code of conduct

Based on Society for the Environment (nd1)

The Institute of Environmental Management and Assessment (IEMA) is the largest professional body for environmental practitioners internationally with more than 15,000 members in 83 countries (IEMA, 2012). It is “*dedicated to the professional development of individuals involved in the environmental profession*” (IEMA, 2012). In 2011 IEMA published a competency framework for environmental professionals, with an updated version published in 2017. This includes both technical knowledge and leadership skills as key elements across all levels of the environmental profession but also identifies particular competencies for those deemed to be at the leadership level (Appendix 3). The framework consists of 13 themes, 6 of which are knowledge based and 7 competency based. Knowledge of the ‘fundamentals of sustainability’ and ‘principles and issues of business governance’ are at the centre of the framework. Leadership for change is included as a specific competency area (IEMA 2017a).

At a panel discussion in 2012 hosted by IEMA, the future transition in skills that an environmental manager will need to demonstrate was highlighted. The discussion concluded that “*Acting as change agents and providing leadership on sustainability are likely to be core features of the role [of an environmental professional]”* and “*By the end of the decade, it is also probable that environmental professionals will increasingly have to balance technical knowledge with business acumen*” (Stuff, 2012 p.15). In identifying the skills base needed by environmental practitioners in the future, the ability to influence and negotiate, communicate effectively and translate the environmental agenda into a business imperative are identified alongside project management skills (Stuff, 2012). In 2014 IEMA undertook a survey of members to determine whether organisations have access to the skills they require to meet the challenges of the transition to a sustainable economy. Of 945 respondents, only 13% reported that they were ‘very confident’ that they have the skills required. The most common skills gaps identified were:

1. Technical knowledge and understanding;
2. Strategic understanding of sustainability issues;
3. Leadership for change;
4. Sustainable practice; and
5. Wider business skills (e.g. marketing, finance).

In North America the International Society of Sustainability Professionals (ISSP) recognised the growing need to develop a competency framework for its members and in 2009 began work to try to establish a framework that would help to:

- “*Bring consistency to the level of professionalism in the field*”
- *Help those who want to enter the field with their training, learning and development*

- *Aid consumers in distinguishing among service providers, vendors and potential employees” (Willard et. al. 2010)*

Their study identified both hard and soft skills which practitioners considered important in their role. Out of a survey of 379 sustainability managers, communication skills were identified by 41% as the top skill needed for success. Technical expertise followed, mentioned in just 14% of responses (Willard et. al. 2010). Considering hard and soft skills separately, strategic planning, systems thinking and project management were identified as the key hard skills followed by a range of increasingly more specialised skills such as auditing, risk assessment and engineering and scientific expertise. Differences were however, found between sectors and organisations of different sizes. Soft skills also differed between sector and organisation size but overall, communication with internal and external stakeholders, problem solving and inspiring and motivating others were considered most critical. Change management was identified as a key theme to emerge across all organisation types and sizes.

The Global Association of Corporate Sustainability Officers (GACSO) was established to support the career development of sustainability professionals. In 2011 GACSO commented that *“there is a great deal of diversity in the role of the corporate sustainability professional and in the background and skills of the people that fulfil the role”* and noted that *“there is currently little consensus about ...what makes a good sustainability professional. The lack of a clearly defined skill set prevents effective recruitment and frustrates the development of compelling career paths in this field”*. In response GACSO proposed a framework of competencies for sustainability professionals (Appendix 4), although note that it is unlikely that any one individual would be able to demonstrate all of these attributes. Instead, the framework is intended to allow individuals to identify and develop their skills needs and to develop a team.

Professional discourse then appears to align well with the academic discourse, identify similar skills and behaviours for success as an environmental manager and highlight the importance of the role in driving change.

3.11 Conclusion

The literature presents a complex interplay of skills, attributes, leadership styles and context specific factors that may influence the success of an environmental manager. There is reasonable consensus that personal skills must include both technical and interpersonal skills with communication skills, and in particular the ability to frame and interpret the environmental agenda, being emphasised. A wide range of other skills and abilities however, are identified. Earlier literature emphasises the importance of transformational leadership but more recent

literature adds the need for an ethical and responsible approach, stressing the importance of context and identifying the need for engagement with stakeholders beyond the organisation. The importance of change agency is stressed in both academic and professional literature. There is some contention in relation to the personal belief systems of environmental managers with some authors affirming the dominance of ecocentric beliefs and others refuting this. Again context may be a strong influencing factor. Table 3.9 attempts to draw together the various skills, attributes, leadership style and personal characteristics identified from the literature.

Leadership theory confirms the importance of context in leader success. Literature on the relevance of context in individual environmental leader success is limited but some general conclusions can be drawn. Table 3.10 summarises the factors identified from the literature reviewed in this chapter.

Table 3.9: Characteristics of Environmental Managers

<p>Skills and abilities</p>	<p>Interpersonal Skills:</p> <ul style="list-style-type: none"> • Communication • Cooperation, collaboration and team working • Negotiation and compromise • Emotional awareness, sensitivity to views of others, empathy • Assertiveness and persuasion • Political acumen <p>Leadership skills and abilities:</p> <ul style="list-style-type: none"> • Building support, networking (internal and external), affiliation, seeking views of others, collaboration, mentoring • Effective strategist • Exerting influence (individual and organisational) • Motivating • Reconciling competing demands • Tolerance of ambiguity and uncertainty • Persistence, thinking in long-term timeframes • Tolerate and embrace diversity • Advocacy (including for the natural environment) • Change orientation <p>Other abilities:</p> <ul style="list-style-type: none"> • Dealing with complexity and contradiction • Anticipate and adapt, think critically • Issue framing, interpreting and reinterpreting • Conceptualisation and problem solving • Reflexivity <p>Technical skills:</p> <ul style="list-style-type: none"> • Sector and organisation specific • Ability to measure and define progress 	<p>Authors</p> <p>Friedman (1992); Egri and Herman (2000); Hanson and Middleton (2000); Boriel et. al. (2008); Hind et. al. (2009); Kakabadse et. al. (2009); McLean (2010); GACSO (2011); Pless and Maak (2011); Laasch and Conaway (2015); Society for the Environment (nd); IEMA (2017a)</p> <p>Portugal and Yukl (1994); Catasús et. al. (1997); Crane (2000); Hanson and Middleton (2000); Egri and Herman (2000); Jacquera and Ordiz (2002); Frenández et. a. (2006); Dalton (2009); Hind et. al. (2009); GACSO (2011); Kurland and Zell (2011); Taylor et. al. (2012); Benn et. al. (2014); Laasch and Conaway (2015); Society for the Environment (nd); IEMA (2017a)</p> <p>Berry and Grodon (1993); Catasús et. al. (1997); Anderson and Bateman (2000); Crane (2000); Egri and Herman (2000); Hanson and Middleton (2000); Rothenberg (2007); Boriel et. al. (2008); Hind et. al. (2009); Kakabadse et. al. (2009); Quinn and Dalton (2009); GACSO (2011); Kurland and Zell (2011); Society for the Environment (nd)</p> <p>Friedman (1992); Egri and Harman (2000); Kakabadse et.al. (2009); Arnault et.al. (2012); IEMA (2017a)</p>
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Table 3.9 continued

Leadership Approach	<p>Transformational leadership characteristics:</p> <ul style="list-style-type: none"> • Visioning • Charismatic approach • Empathy • Sense making • Risk taking • Supporting and empowering others • Change advocacy • Self-sacrifice <p>Transactional leadership characteristics:</p> <ul style="list-style-type: none"> • Coordinating • Monitoring • Directing <p>Responsible Leadership</p> <ul style="list-style-type: none"> • Systemic thinking • Embracing diversity • Balancing global and local perspectives • Ethical decision making • Self-awareness • Self-regulation • Emotional awareness and empathy • Change agency • Stakeholder dialogue 	<p>Authors</p> <p>Portugal and Yukl (1994); Hanson and Middleton (2000); Egri and Herman (2000); Jacquera and Ordiz (2002); Boiral et. al. (2009); Redkop (2010); GACSO (2011)</p> <p>Hanson and Middleton (2000); Egri and Herman (2000)</p> <p>Hind et. al., 2009; Pless and Maak, 2011; Laasch and Conway (2015)</p>
<p>Personal values</p>	<ul style="list-style-type: none"> • Ecocentric belief system • Self-transcendence • Openness to change • Values learning 	<p>Fineman (1996); Catasús et. al. (1997); Egri and Herman (2000); Harris and Crane (2002); Janquera and Ordiz (2002); Ferdig (2007); Durate (2010); Kurland and Zell (2011); Cantor et.al. (2013); Shiel (2013); Society for the Environment (nd)</p>
<p>Attributes</p>	<ul style="list-style-type: none"> • Self-efficacy • Self-discipline • Persistence • Honesty and integrity • Courage • Open-mindedness • Long-term perspective • Enthusiasm, energy and drive 	<p>Berry and Gordon (1993); Egri and Herman (2002); Hind et. al. (2009); Kakabadse et. al. (2009); GACSO (2011); Pless and Maak (2011); Taylor et. al. (2012)</p>
<p>Knowledge</p>	<ul style="list-style-type: none"> • Environmental sustainability • Organisational understanding • Legal requirements • Stakeholder requirements 	<p>Friedman (1992); Hind et. al. (2009); GACSO (2011); Taylor et. al. (2012); Society for the Environment (nd); IEMA (2017a)</p>

Table 3.10: Context factors Influencing Environmental Leaders Success

Factor	Response	Authors
Organisational context		
Sector	Strength of sector predisposed to environmental action and change Amount of regulatory control Strength of stakeholder concern	Banerjee (2002); Harris and Crane (2002); Sienbenhüner and Arnold (2007); Williams and Schaefer (2013)
Size	Ease of implementing change Resource availability	González-Benito and González-Benito (2006); Studer et. al. (2006); Sienbenhüner and Arnold (2007); Murillo-Luna et. al. (2011)
Organisational environmental paradigm and culture	Degree of support for environmental action from senior management Alignment of values of the environmental manager with those of the organisation Organisational proactivity	Flannery and May (1994); Anderson and Bateman (2000); Junquera and Ordiz (2002); González-Benito and González-Benito (2006); Cherrier et. al. (2012); Williams and Schaefer (2013)
Organisational structure	Ability to influence key decision makers, personal perceptions of control	Flannery and May (1994); Cordon and Frieze (2000)
Financial priorities	Resource allocation to environmental action Strength of profit motivation Competitive advantages	Dahlmann et. al. (2008); Babiak and Trendafilora (2011); Murillo-Luna et. al. (2011); Lacy et. al. (2012); Ervin et. al. (2013); Lozano (2015); Jabbour et. al. (2016)
Degree of regulatory and technical constraint on activities	Nature of action and priorities	Banerjee (2001); Studer et. al. (2006); Bey et. al. (2013); Ervin et. al. (2013); Papagiannakis et. al. (2014); Lozano (2015)
Strength of stakeholder influence	Framing of issues as management priority Reputational impact	Sienbenhüner and Arnold (2007); Babiak and Trendafilora (2011); Lacy et. al. (2012); Papagiannakis and Lioukas (2012); Bey et. al. (2013); Papagiannakis et. al. (2014); Lozano (2015)

Table 3.10 continued

Factor	Response	Authors
Professional context		
Professional status accorded to the environmental manager	Level of influence, framing of issues	McLean (2010)
Degree to which other professions 'own' the environmental agenda	Extent of collaboration or conflict, recognition of environmental manager as professional	Wycherley (1997); Borial et. al. (2008); Desjardins (2007); Harris and Tregidga (2011)
Internal networks	Support for action, degree of isolation of environmental manager	Portugal and Yukl (1994); Yukl (2012)
External networks – professional body and other networks	Support for knowledge development; sharing best practice; maintaining momentum; reaffirmation of environmental values and commitment	Crane (2000); Quinn and Dalton (2009); Kurland and Zell (2011); Benn et. al. (2014)
Professional competency frameworks	Professional status and recognition, support for learning	Dorney (1989); McLean (2010)
External climate		
Regulatory and policy climate	Organisational priorities, paradigm shift, drivers and barriers for change	Banerjee (2001); Studer et. al. (2006); Bey et. al. (2013); Ervin et. al. (2013); Papagiannakis et. al. (2014); Lozano (2015)
Economic climate		Rubio-López (2007)
Stakeholder awareness		Sienbenhüner and Arnold (2007); Babiak and Trendafilora (2011); Lacy et. al. (2012); Papagiannakis and Lioukas (2012); Bey et. al. (2013); Papagiannakis et. al. (2014); Lozano (2015)

Chapter 4: Change and Change Agency

4.1 Introduction

The context and case for organisational change to address the challenges of environmental and wider sustainability agenda is made in Chapter 1 where the drivers for organisational greening were discussed. But how do organisations go about introducing and sustaining these changes? Siebenhüner and Arnold (2007) in their work looking at the factors influencing organisational learning processes that facilitate sustainability orientated change conclude that “*individual change agents were of central importance to the learning process*” (p.348) and “*Without them, observed changes probably would not have started*” (p. 350). As identified in Chapter 3, both academic and professional discourse on the role and skills of an environmental manager have change advocacy as a central theme. This chapter will therefore consider the literature explicitly associated with change agency, including a brief overview of the very extensive literature on change management and change agency generally to provide context, before reviewing literature on environmental change and change agency.

4.2 The Nature of Change

Many decades of research into change and change management has resulted in an extensive literature that has explored change from multiple perspectives and resulted in a myriad of espoused theories. There is agreement however, that the change process is complex and challenging for organisations (Whelan-Berry and Somerville, 2010). A comprehensive review of this literature is beyond the scope of this study therefore, in order to establish some boundaries around what is considered, it would seem appropriate to consider what environmental change is seeking to achieve.

An ecocentric business model (see chapter 2 section 2.3) stresses the need for holistic organisation wide engagement with the environmental agenda and the need for employees at all levels of an organisation to be empowered to take environmental and social action rather than change being drive by positional leaders. The recognition of a broad group of stakeholder concerns, long term time-frames, and responsiveness to the ever changing and complex nature of the natural world are also fundamental requirements. Thus, change needs to engage all members of the organisation in a way that allows them to contribute ideas and action rather than be reliant upon the drive of a visionary leader. The constantly changing nature of the environmental agenda suggests that environmental change cannot be planned but rather will

emerge incrementally from the constant interaction of the organisation and its internal and external stakeholders with the environment around it (what Schein (2002) calls natural evolutionary change) (Georg and Füsell, 2000; Crews, 2010; Papagiannakis et. al., 2014). Equally for some organisations, revolutionary or transformational change will be required in order to avoid the consequences of unsustainable practice or to make the value shift needed to engage with new business opportunities (Korten, 1999; Heart and Milstein, 1999). No one model of change is likely to fit each organisation since each will interact and respond to the environmental agenda differently and each will have a different human capital amongst its employees to draw upon and learn from (Benn et. al., 2014). However, acceptance of change as the norm and the ability to adapt is essential in an ecocentric business model (Ryan et. al., 2012).

Cameron and Green (2015) draw upon Morgan's (1986) work on organisational metaphors to explore how each might influence assumptions about the management of change. Their conclusions are summarised in Table 4.1. It is apparent from this analysis that the change assumption of the Flux and Transformation metaphor most closely align with ecocentric business dialogue.

Although the holistic nature of ecocentric business engagement suggests the need for change in both tangible (physical systems, procedures etc) and intangible (values and culture) aspects of an organisation, for many organisations environmental/sustainability initiatives have focused only on the tangible (e.g. the introduction of a recycling scheme or an environmental management system). Lozano (2012) for example notes the predominant use of technocentric solutions alongside assessment and reporting while Mårtensson and Westerberg (2016) note that environmental strategies often are not motivated by fundamental company values with the result that the environmental sustainability programmes they pursue often fail to challenge business as usual or change *"their unsustainable relationships with nature."* (p.1). To achieve lasting and transformational change, Doppelt (2010) argues *"...sustainability initiatives must explicitly focus on altering the culture of the organisation."* (p.89), a view shared by Harris and Crane (2002). Halme (2002), in contrast, argues that actions of any type are important as the learning of new core values and beliefs comes about from experience, testing and refining ideas in practice.

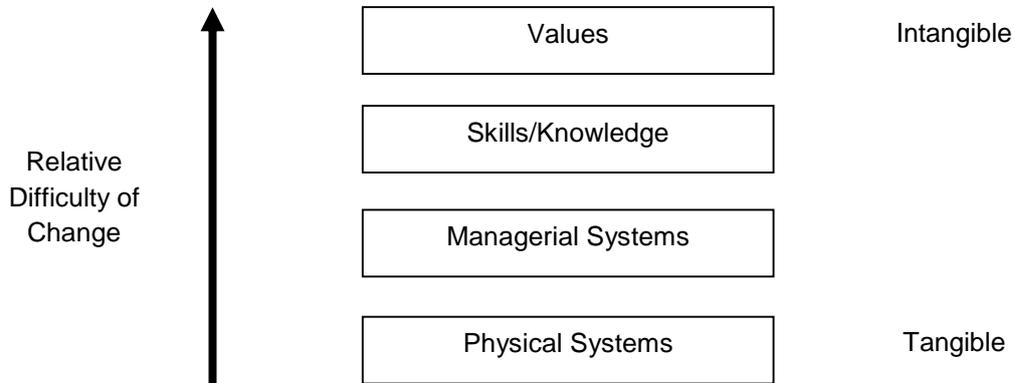
Table 4.1: Organisational Metaphors and Change Assumptions

Organisational Metaphor	Organisational Change Assumptions
Machine	<ul style="list-style-type: none"> • The organisation can be changed to an agreed end state by those in positions of authority • There will be resistance which needs to be managed • Change can be executed well if it is well planned and well controlled
Political System	<ul style="list-style-type: none"> • The change will not work unless it is supported by a powerful person • The wider the support for this change the better • It is important to understand the political map and to understand who will be winners and who will be losers as a result of this change • Positive strategies include creating new coalitions and renegotiating issues
Organism	<ul style="list-style-type: none"> • Changes are made only in response to the external environment (rather than using an internal focus) • Individuals and groups need to be psychologically aware if the need for change in order to adapt • The response to change in the environment can be designed and worked towards • Participation and psychological support are necessary strategies for success
Flux and Transformation	<ul style="list-style-type: none"> • Change cannot be managed. It emerges. • Managers are not outside the system they manage. They are part of the whole environment. • Tensions and conflicts are an important feature of emerging change. • Manager act as enablers. They enable people to exchange views and focus on significant differences

Source: Cameron and Green (2015) p.97

Leonard-Barton (1995) identifies a hierarchy of the difficulty in changing these various tangible and intangible elements (Figure 4.1). Although resistance may occur and time and financial resources will need to be invested, physical systems tend to be relatively easy to change since they can be framed as improvements to the working environment. Culture and values, however may prove more difficult to change since they are often the result of highly complex interactions between external factors and “*internal cognitive and emotional drivers*” (Doppelt, 2010 p.89), and may not be easy to discern. Doppelt argues that organisations are complex social systems in which resistance to change can be seen as the system feedback mechanisms trying to maintain stability. The more threatened people feel in terms of their job security or contribution, the more resistant to change they will be.

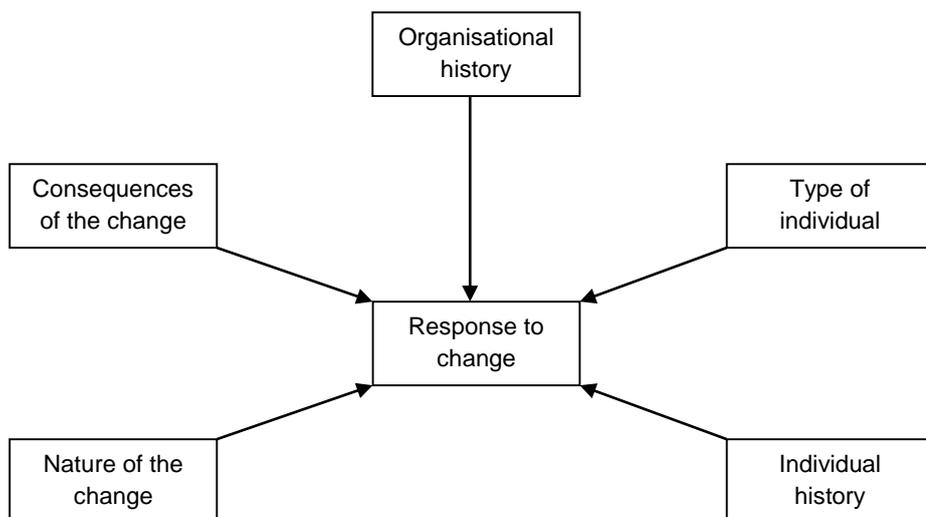
Figure 4.1: Hierarchy of Change Difficulty



Source: Leonard-Barton (1995)

Both tangible and intangible change requires the engagement of individuals within an organisation for success (Whelan-Berry and Somerville, 2010; Cameron and Green, 2015). Without engagement at the individual level, any real and lasting change at the organisational level will not occur. Cameron and Green (2015) identify five factors that influence an individuals' response to change (Figure 4.2) each of which needs to be considered in a change initiative. They identify conversation and dialogue as key factors in helping to facilitate individual change.

Figure 4.2: Factors that Influence Individual Response to Change



Source: Cameron and Green (2015) p.53

4.2.1 Organisational Change Management Models

Multiple models of change management have been developed over the decades, each based on different underpinning assumptions. Many are based on a linear model in which a predicted and planned sequence of events can be used to manage change (Table 4.2 provides examples). Models aligned with the flux and transformation organisational metaphor, and designed to manage complex, uncertain and emergent change, are fewer. Indeed, it could be argued that in such a change analogy the system of change cannot be designed and hence, it is not possible to create a model or process (Cameron and Green, 2015). Change will emerge naturally over time and managers are part of that change rather than outside controlling or planning it (Shaw, 2002).

The Burke-Litwin (1992) model integrates implementation theory (activities needed to affect planned change) and change process theory (changes that need to occur as a result of implementation activities) in order to create a cause and effect model of organisational change. In the model shown in Figure 4.3, the 12 boxes represent the organisational variables considered to be most important in relation to organisational performance and arrows show the most critical linkages. The authors argue that, in the most part, organisational change is initiated from the external environment, so the external environment represents inputs to the system and the individual and organisational performance the output. The model also incorporates transformational and transactional elements of change. The organisations leadership, organisational culture and mission and strategies interact with the external environment to bring about transformational change, which requires major shifts in organisational and individual behaviour. Transactional elements of the model, in contrast, alter via incremental and often short term steps and are the more management related elements of an organisation's workings; management practice, structure, work unit climate, systems, tasks and individual skills, individual needs and values and motivation. Transformational and transactional elements interact and will influence one another.

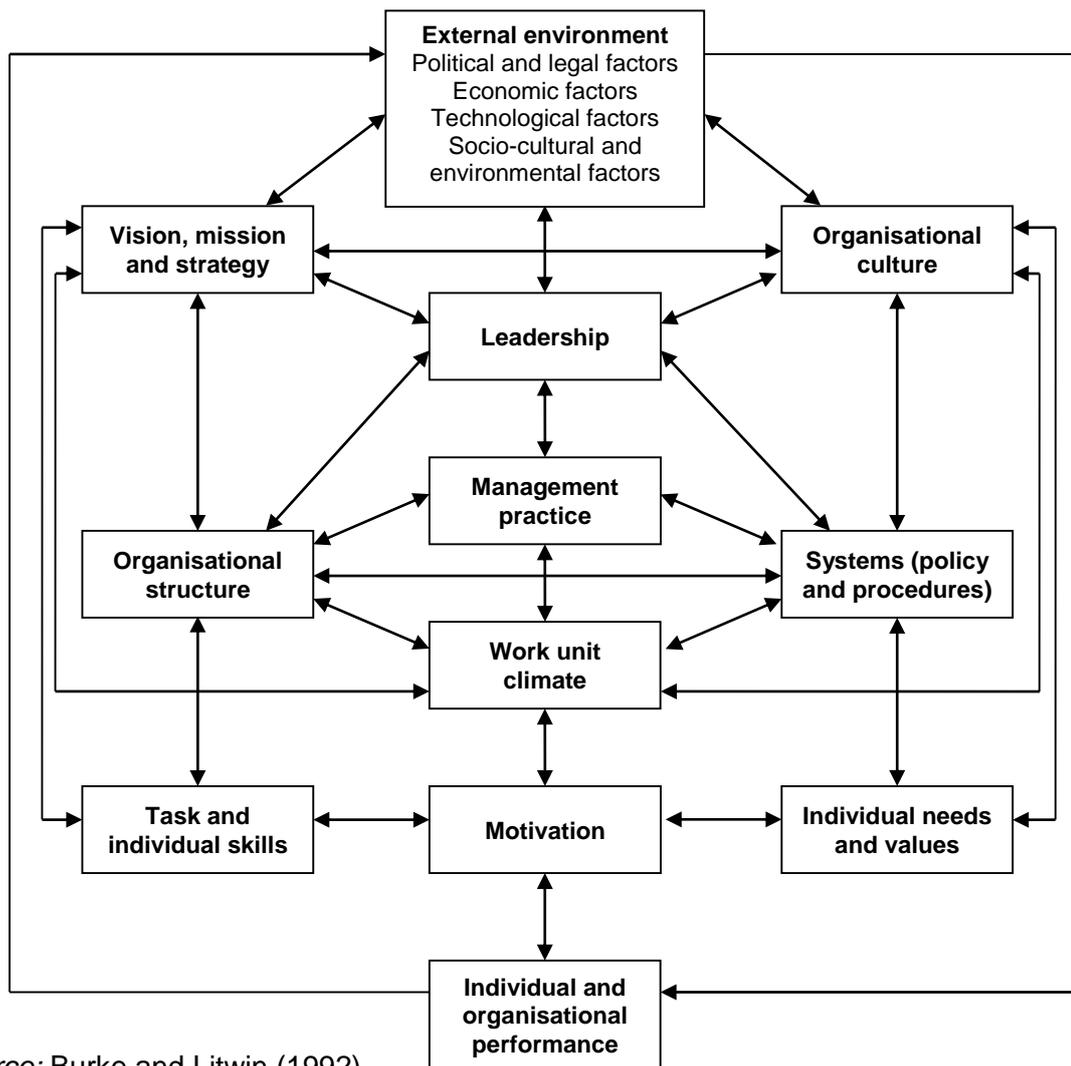
Cameron and Green (2015) propose a 'Change Leadership Pathway' which consists of a series of overlapping stages to be used as an 'organic guide' rather than a programme of action (p.410). Table 4.3 summaries the various stages. Senge et. al. (1999) suggest that organisations should be viewed as biological systems with various homeostatic feedback systems that attempt to maintain status quo. Rather than suggesting a model for change, they therefore suggest mechanisms for tackling these homeostatic forces. They suggest change initiatives should start small and grow steadily rather than being planned in full from the start.

Table 4.2: Change Management Models

Lewin (1951) Change Process	Kanter et. al. (1992) Ten Commandments for Executing Change	Ulrich (1998) Seven Step Model for Managing Change	Luecke (2003) Seven Steps	Cummings and Worley (2005)	Kotter (2012) Eight-stage Process for Successful Organizational Transformation
Unfreeze Movement Refreeze	Analyse the organisation and its need for change Create a vision and common direction Separate from the past Create a sense of urgency Support a strong leader role Line up political sponsorship Craft an implementation plan Develop enabling structures Communicate, involve people and be honest Reinforce and institutionalize change	Lead change Create a shared need Shape a vision Mobilise commitment Change systems and structures Monitor progress Make change last	Mobilize energy and commitment through joint identification of business problems and their solutions Develop a shared vision of how to organize and manage for competitiveness Identify the leadership Focus on results, not on activities Start change at the periphery, then let it spread to other units without pushing it from the top Institutionalise success through formal policies, systems and structures Monitor and adjust strategies in response to problems in the change process	Motivate change Creating a vision Develop political support Manage the transition Sustain momentum	Establish a sense of urgency Create the guiding coalition Develop a change vision Communicate the vision for buy-in Empower broad-based action Generate short-term wins Never let up Incorporate change into the culture

Source: Coetsee, J. & Flood, F. (2013, p.74)

Figure 4.3: Burke-Litwin Model of Organisational Performance and Change



Source: Burke and Litwin (1992)

Table 4.3: Stages of the Change Leadership Pathway

Stage	Indicative actions
Deepening Commitment: establish deep sense of purpose amongst teams and stakeholders	Top –team away days, identification of critical success factors and obstacles, mapping future journey
Aligning Strategy: vision and high-level plan agreed	Naming of top priorities
Focusing Action: connecting key people and agendas internally and externally	Constant communication, interactive launch event, engaging cascades
Growing Capability: people in key roles and teams developed	Coaching, skills-building exercises, team-building interventions
Clarifying Progress: results measures, successes and difficulties clarified and new processes implemented	Review processes, accountability systems

Source: Cameron and Green (2015).

The parallels between change management and project management are noted by a number of authors (Carnall, 1991; Buchanan and Boddy, 1992; Hughes, 2010; Cameron and Green, 2015), although Hughes notes that literatures of change management and project management have largely evolved separately (p. 244). Cameron and Green however, note a growing debate on the incorporation of organisational change as a part of project management over the last 5 to 10 years (p. 337). Pádár et. al. (2011) argues that there is a lack of clear distinction in the literature between “*changes, processes, programmes and projects*” (p.252). They explore two forms of change; first-order, or morphostatic change, is day to day change which leave the underlying system unaltered whereas second-order, or morphogenic, change, transforms the system. They consider change management to be about managing second-order change and conclude that it would be useful for change managers to also draw upon the project management literature.

Hughes (2007), in reviewing the perceived gap between practitioner and academic dialogue in relation to change management, highlights the view that no single change management model is likely to fit all situations and suggests that organisational size, goals and even geographical location may influence preference (p.42). Caldwell (2003) agrees, arguing that there is “*no one best way to cope with the contextual complexities of change.*” (p.134)

4.2.2 Models for Environmental Change Management

Despite the frequent framing of organisational greening as a change process, the literature often focuses on the results rather than the process itself (Georg and Füssel, 2000; Halme, 2002; Epstein et. al., 2015). There have been few attempts to look at models specifically focused on environmental change or to evaluate the effectiveness of generic change models in an environmental change context. Indeed, the nature of the change needed in relation to the environmental and wider sustainability agenda is contentious. The continuums presented in Chapter 2 (see section 2.2.2) suggest a progression through varying levels of engagement and awareness until ultimately, ecocentric engagement is reached. However, not all authors support the view that this incremental shift can achieve real change, advocating instead the need for radical or transformational change (Korten, 1999; Hart and Milstein, 1999; Hart and Dowell, 2011). Other authors advocate the need for both incremental and transformational change (Hanson and Middleton, 2000; Ryan et. al., 2012) while Benn et. al. (2014) argue that there is no right approach concluding that “*arguments for transformational change are compelling in some circumstances but unconvincing in identifying it as the sole means to achieving sustainability outcomes*” (p.219). They suggest instead that managers should adopt the approach that matches their organisation specific context. Hanson and Middleton (2000)

advocate a similar need, identifying four different change management approaches (Table 4.4), all of which they suggest, organisations will need to adopt as they “*change towards eco-sensitivity*” (p. 103).

Table 4.4: Change Management Approach

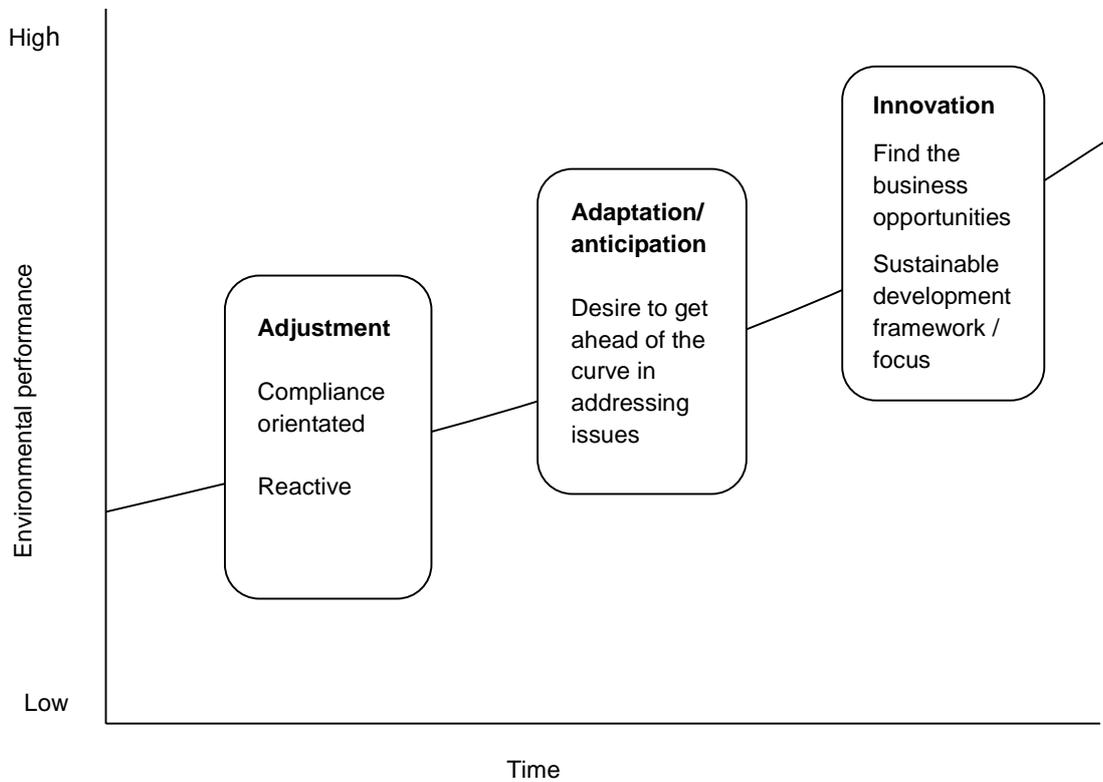
Change Management Approach	Characteristics
Participative Evolution	Incremental and collaborative change with high employee involvement. Suitable when only minor adjustments are advocated and key stakeholders are in favour of the change. Not likely to result in significant shifts in organisational environmental culture but may maintain an established culture.
Charismatic Transformation	Large scale change led by transformational leaders. Used when a major change is required and a charismatic leader is able to energise stakeholders. Only likely to be successful when there is acceptance of the need for change from key organisational stakeholders.
Forced Evolution	Incremental, manager-driven change by coercion. Used when major adjustment is required to current operations but key internal stakeholders are opposed to the change.
Dictatorial Transformation	Large scale transformation by direction. Used when a significant change in current practice and culture is needed but there is no internal support. This form of change may need the backing from a significant external stakeholder or driver.

Adapted from: Hanson and Middleton (2000)

Based on analysis of a number of case studies, Post and Altman (1992) similarly propose a change model that includes different approaches aligned with three phases of organisational change (Figure 4.4). The adjustment phase involves mostly incremental change by the reactive modification of existing practice. Drivers are often external such as regulatory and market based pressures. ‘Single loop’ learning predominates. Environmental staff may have a technical and compliance focus. The adaptation and anticipation phase sees environmental values being embedded in the business objectives of the organisation. Double loop learning occurs and structures and systems are implemented to reinforce the environmental objectives. Environmental staff require both administrative and technical skills and a champion is identified. The innovation phase involves the incorporate of environmental goals throughout all of the organisation’s activities and business mission. Innovative opportunities are sought and incentivised (Post and Altman, 1994). Environmental change is therefore envisaged not as a one off activity using a single model, but as an interlinked series of change actions that

transition an organisation through different levels of engagement with the environmental agenda.

Figure 4.4: Corporate Greening Model Environmental Performance Curve



Source: Post and Altman (1994)

Siebenhüner and Arnold (2007) also consider the importance of single and double-loop learning in the environmental change process. Single-loop learning deals with changes in operations and outputs triggered by external drivers or deviation of performance from stated objectives. Double-loop learning, in contrast, includes a reflective process which enables behaviour change and cultural transformation to take place and new knowledge to be created. They conclude that double-loop learning processes do not necessarily result in changes in companies, however, radical change could not be found without double-loop learning.

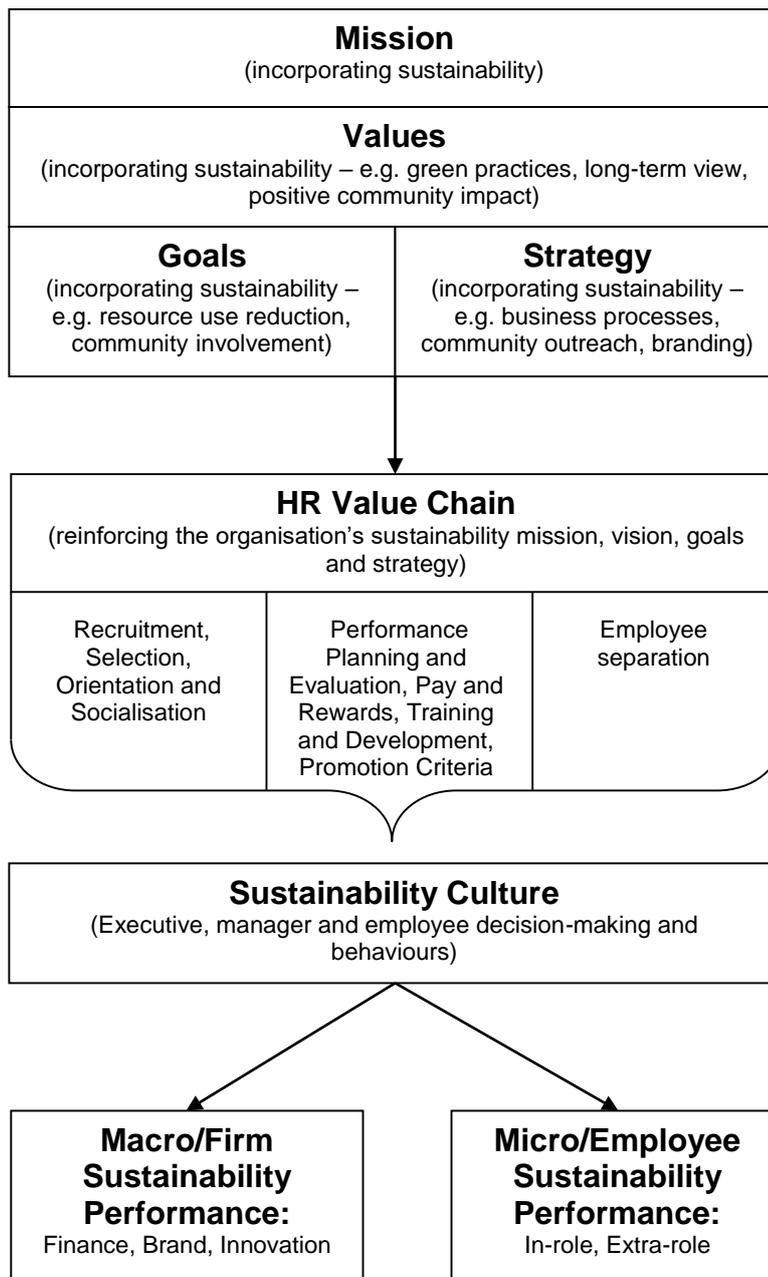
Kakabadse et. al. (2009) also propose a three stage model for the implementation of Corporate Social Responsibility in organisations. Emerging from 300 interviews with managers across different levels in 65 organisations, their model identifies a decision stage in which the need to pursue CSR is identified followed by an adoption stage in which actions are taken to spread CSR within the organisation and finally the commitment stage is reached when CSR goals are

'consistently pursued' (p. 52). Although offering insight into the high level indicators of a direction of travel, these models provide little insight into the actual interventions which leaders need to make to bring about change.

Galpin and Whittington (2012) and Galpin et. al. (2015) argue that in order to achieve sustainability, organisations must focus on achieving cultural change. An organisation's culture, they argue, operates at multiple levels and so developing and maintaining sustainability needs each of these levels to be addressed. Their 'culture of sustainability model' they argue, provides a "*blueprint for leaders attempting to create a culture of sustainability within their organisation*" (Galpin et. al., 2015, p. 2) (Figure 4.5). The process begins by clearly articulating sustainability as part of the organisation's mission, values, goals and strategy. This, they argue, helps organisational members understand what they need to do and motivates their actions. Incorporating sustainability into strategy helps to ensure that actions are appropriately aligned to the organisation's long term direction rather than being a "*jumble of un-coordinated ... activities*" (Galpin et. al., 2015, p.7) in response to growing sustainability pressures. The next step is to ensure that HR management practices reinforce the organisations core values and strategy. Recruitment, performance management, training and promotion practices for example, help to ensure that the values and skills of employees are aligned with the mission, values, goals and strategy of the organisation. The outcome elements of the model reflect both organisation level benefits of sustainability such as enhanced financial performance, brand image, market performance and new opportunities, but also enhanced employee role performance and extra-role (discretionary) activity (Galpin and Whittington, 2012).

Galpin et. al. (2015) note that although presented in a linear fashion the process is actually an iterative one in which elements of the model will be adjusted and evolve over time. They also note the likely influence of internal feedback loops and the likely impact of external moderators on the process such as regulation, economic climate and technological changes.

Figure 4.5 Culture of Sustainability Model



Source: Galpin et. al. (2015)

Doppelt (2010) similarly argues that change is messy and organisational change towards sustainable development does not occur in a linear fashion. He proposes a ‘wheel of change’ (Figure 4.6) consisting of seven interventions designed to overcome barriers to successful change (Table 4.5). Because of its circular nature, organisations can start anywhere on the wheel. The success of the change process depends upon the strength of all seven interventions since each is supported by and affects the others, but they do not necessarily need to be completed sequentially. Although there is a logical flow to the interventions in

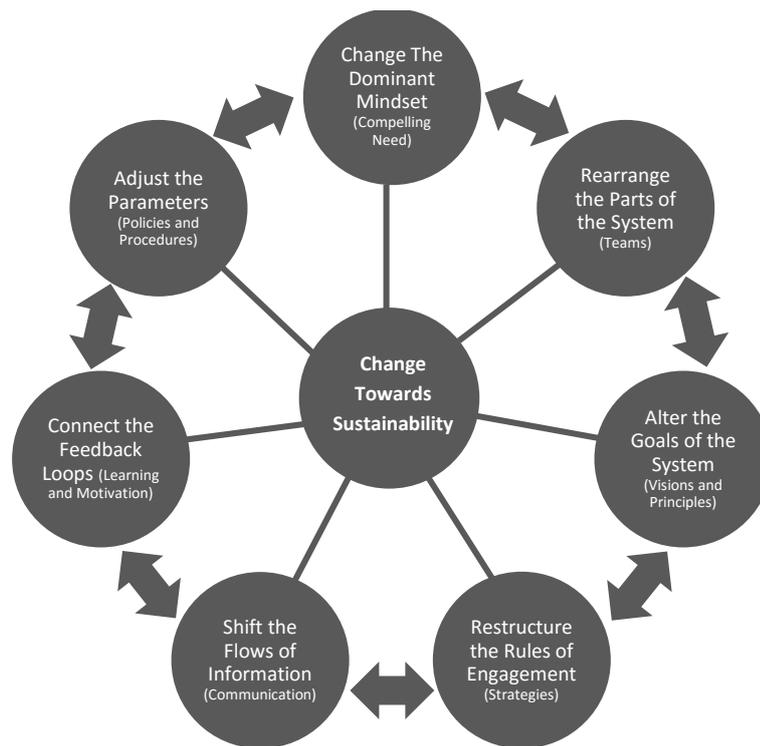
Doppelt's model starting with the creation of a change in the dominant mind set of the organisation towards sustainability then proceeding clockwise around the wheel, he stresses that there is a high tolerance of variance from this sequence since change is an iterative process that continues indefinitely. This non-linear view of change means multiple interventions in different intervention areas may happen together to reinforce new ways of working.

Table 4.5 Doppelt's Sustainability Solutions

Blunder	Solution
Patriarchal thinking that leads to a false sense of security	Change the dominant mind-set that created the system through the imperative of achieving sustainability
Siloed approach to environmental and socioeconomic issues	Rearrange the parts of the system by organising deep, wide and powerful transition teams
No clear vision of sustainability	Alter the goals of the system by crafting an ideal vision and guiding principles of sustainability
Confusion over cause and effect	Restructure the rules of engagement of the system by adopting source-based operational and governance-change strategies
Lack of information	Shift the information flows of the system by tirelessly communicating the need, vision and strategies for sustainability
Insufficient mechanisms for learning	Correct the feedback loops of the system by encouraging and rewarding learning and innovation
Failure to institutionalise sustainability	Adjust the parameters of the system by aligning systems, structures, policies and procedures with sustainability

Source: Doppelt (2010) p. 106

Figure 4.6: The Wheel of Change towards Sustainability

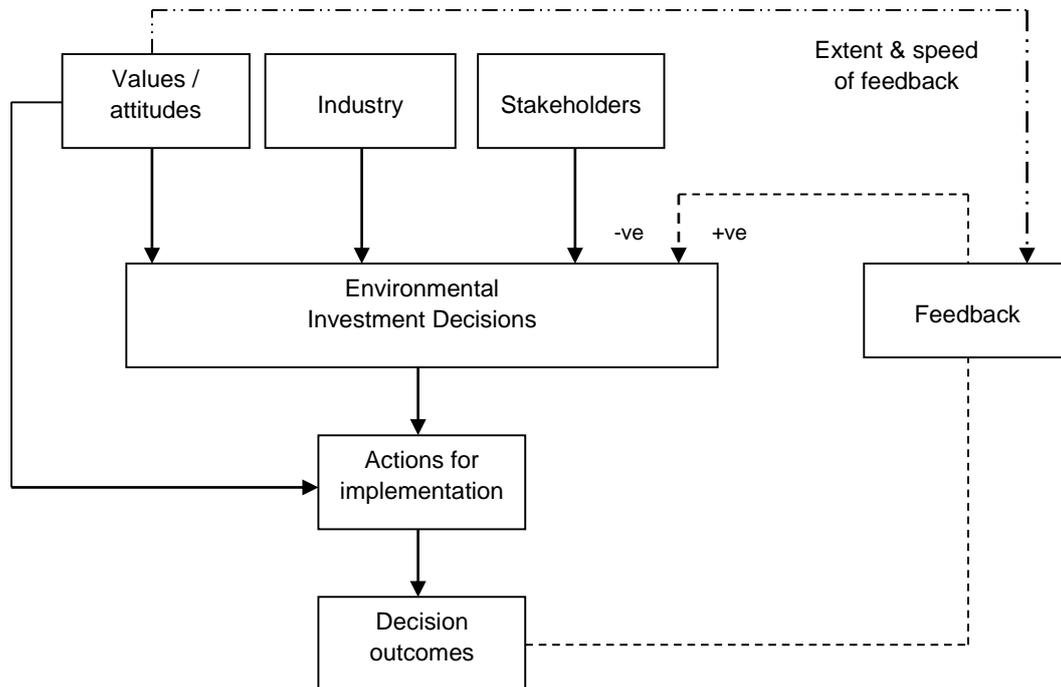


Source: Doppelt (2010) p.107

The contextual nature of change is considered by Ryan et. al. (2012) and Papagiannakis et. al. (2014). Since organisations do not operate in isolation but are interconnected with, and will impact upon, other organisations (customers, suppliers, regulators) and with society and the environment, it is important to consider the implications of stakeholder interactions for change.

Papagiannakis et. al. (2014) propose a model where early engagement with environmental action is affected by stakeholder pressure, the type of industry and the values and attitudes of decision makers in the organisation. Outcomes from action feedback into the system, triggering or preventing further action (Figure 4.7). Environmental sustainability, they conclude, is an emergent process with environmental strategy gradually becoming integrated into the core business. Managers values and attitudes towards the environment will influence the speed and magnitude of the integration. Ryan et. al. (2012) consider the importance of relationship building in ensuring organisational learning and transformational change. They also argue that partnering for change can bring benefits such as “*building knowledge about and affecting the needs and wants of the end consumer, to gain expertise and access to resources and, to enhance legitimacy*” (p.585) and in developing “*ecological literacy capabilities*” (p.588).

Figure 4.7: Framework for Environmental Change



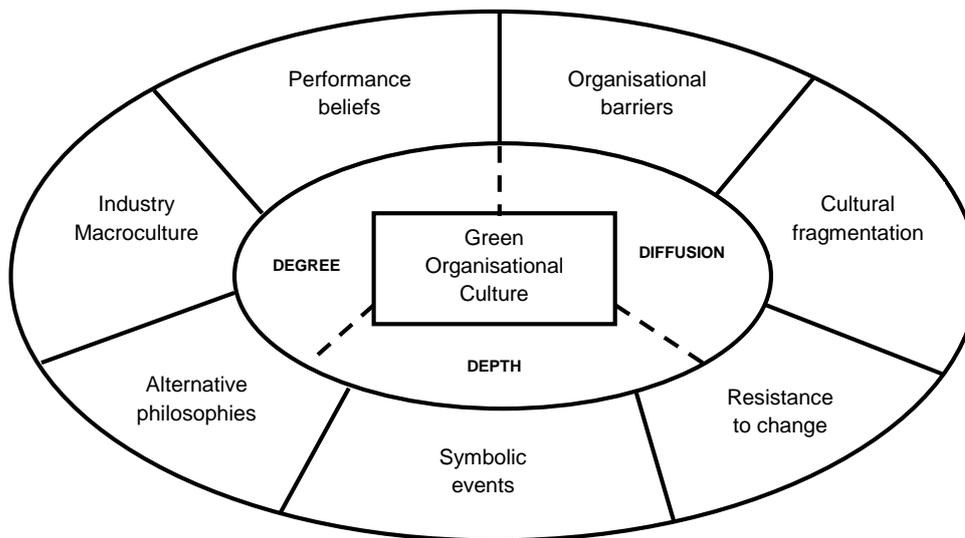
Source: Papagiannakis et. al. (2014)

Lozano (2012), in his model for orchestrating change for corporate sustainability, stresses the need to understand the barriers to change in order to apply appropriate change strategies, thus aligning with Senge et. al's (1999) views on organisational change presented in section 4.2.1. Strategies should be aligned to the particular change attitudes shown at an individual, group or organisational level. Attitudes to change, he argues are made up of informational (beliefs and information about change objectives) emotional (how individuals feel or are affected by the change) and behavioural (tendency to behave in a particular way) components. The barriers presented by each of these components need to be understood and effectively targeted in order for change to occur.

Harris and Crane (2002) argue that *“cultural greening is not a simple uni-dimensional concept”* (p. 221) and that part of the difficulty in identifying drivers and barriers for environmental change is defining the outcome of the process that can act as indicators that change has occurred given the diversity of approaches taken. They identify three dimensions of cultural greening that they believe it is important to consider; depth, degree and diffusion. The depth to which environmental action is valued by members of the organisation, the degree to which environmental change is manifest in the products, services and artefacts of the organisation and how widely cultural greening has diffused throughout the organisation are all, they argue,

important. They identified seven factors that appeared to influence greening of organisational culture (Figure 4.8) and note that these tend to be more strongly, but not exclusively, aligned with the dimensions of depth, degree or diffusion.

Figure 4.8: Factors Affecting Organisational Greening



Source: Harris and Crane, 2002

The complexity and interaction between factors in Harris and Crane’s study lead them to warn against attempts to over simplify “*conceptualisations of organisational culture*” (2002, p. 228). Significant cultural variation between organisations may mean that there are multiple equally valid constructs of green organisational culture. They also conclude that this diversity of factors makes it “*extremely difficult to initiate and sustain the process of cultural greening*” and that “*change ... could thus only occur over a considerable period of time*” (p.229).

Garzella and Fiorentino (2014) note that the models for organisational greening “*have been developed based on limited perspectives*” (p. 73) and are inconsistent. This is accounted for in part by the different focus of studies (drivers (Papagiannakis et. al., 2014) barriers (Lozano, 2012) actions (Galpin et. al., 2015)). There is agreement however, that environmental change is complex, and therefore unlikely to proceed in a linear fashion, will be influenced by both internal and external drivers and barriers, and is likely to continue over an extended period, if not indefinitely. Argón-Correa and Rubio-López (2007) note that attempts to oversimplify the complexity arising from the technical and scientific complexities of the variable involved may result in limited environmental improvements. They urge the need for the specific external

context and internal situation of the organisation to be studied in the decision making process rather than using off-the-shelf answers. Marshall et. al. (2011) in critiquing Doppelt's Wheel of Change, suggest we need to guard against the rigid application of models or guides which are prescriptive or procedural since there is a danger that they will simply adjust the existing structure (first order change) rather than creating transformation (or second order) change. They advocate instead the need for "*experimentation and agility*" (p.9). Ferdig (2007) and Shiel (2013) express similar concerns.

4.3 Change Agency

Buchanan and Huczynski (2004) define a change agent as "*any member of an organisation seeking to promote, further, support, sponsor, initiate, implement or help to deliver change*" (p. 634). A similar definition is provided by Siebenhüner and Arnold (2007) thus, "*Change Agents are individuals in organisations that initiate innovations and keep innovation processes in motion.*" (p.343).

The extent to which change agents are central to the change process is, however, debated in the literature with contrasting views about the nature of, and drivers for change being central to the debate (Caldwell, 2006). Hayes (2014) for example, summarises two contrasting views of organisational change. The 'Deterministic View' holds that change is largely determined by factors external to the organisation such as the social, economic and political climate prevailing at the time. It follows that the ability of a manager to influence change is limited and the role of the manager as a change agent is rejected. In contrast the 'Voluntarist View' argues that there is a strong human element to change with managers having the ability to either promote or undermine change. The manager as a change agent therefore has a central role.

An alternative dichotomy might be to think of change as intentional or unintentional. Intentional change, according to Ford and Ford (1995), "*occurs when a change agent deliberately and consciously sets out to establish conditions and circumstances that are different from what they are now and then accomplishes that through some set or series of actions and interventions...*" (p. 543). In other words, there is intentional action in order to achieve a pre-planned outcome. This rationalist view of change is exemplified by change models such as that of Lewin (1951). The change agent has a central role in intended organisational change and is envisioned as an expert facilitator (Caldwell, 2006).

Van der Heijden et. al. (2012) argue against the idea that change is planned or intentional, pointing to the ineffectiveness of many planned organisational changes. Instead, they suggest that change is an emergent process that involves constant adjustment and redevelopment of goals as the context for change develops, and that *“Internal change agents play important roles in the processes of sensemaking...”* (p.536).

Caldwell (2003) propose a ‘fourfold classification’ in which change agency can fall into a leadership model, management model, consultancy model or team model (Table 4.6), within each of which a variety of change agent roles may exist. According to Caldwell (2003) therefore, a change agent can be defined as *“an internal or external individual or team responsible for initiating, sponsoring, directing, managing or implementing a specific change initiative, project or complete change programme”* (p. 139).

Cameron and Green (2015) argue that a fifth model that represents a holistic approach to change management, incorporating all four of Caldwell’s models, may be appropriate. In this “Responsibility taking model” (Cameron and Green 2015, p. 180) the various change players work together to bring about change. The idea of a change agent is therefore problematic and the term change agency is favoured instead to reflect this plurality of actors (Hughes, 2010).

Table 4.6: Models of Change Agency

Model	Characteristics
Leadership Models	Change agents are identified as leaders or senior executives at the very top of the organization who envision, initiate or sponsor strategic change of a far-reaching or transformational nature.
Management Models	Change agents are conceived as middle level managers and functional specialists who adapt, carry forward or build support for strategic change within business units or key functions.
Consultancy Models	Change agents are conceived as external or internal consultants who operate at a strategic, operational, task or process level within an organization, providing advice, expertise, project management, change programme coordination, or process skills in facilitating change.
Team Models	Change agents are conceived as teams that may operate at a strategic, operational, task or process level within an organisation and may include managers, functional specialists and employees at all levels, as well as internal and external consultants.

Source: Caldwell (2003, p.140)

4.3.1 Change Agent Skills and Attributes

Given the lack of consensus about the nature of change agency, it follows that there is a similar lack of consensus in the literature on the skills and attributes needed to be an effective change agent. Numerous authors have identified the skills and attributes sets that they believe are essential; a summary of some of this work is included in Appendix 5. Amongst the most cited work is that of Kanter (1989) (see for example Buchanan and Huczynski 2004, Paton and McCalman, 2008) who identifies the skills she considers essential for change agents as:

1. the ability to work independently
2. an effective collaborator
3. the ability to develop high trust relationships based on high ethical standards
4. self-confidence and humility
5. respect for the process of change and content
6. the ability to work across business functions
7. willingness to take reward on results and gain satisfaction from success

Caldwell (2003), in contrast, argues that the complexity of the change process in organisations means there is no single model for a change agent and hence it is wrong to “*identify attributes or ‘competencies’ of a generic type of agent*” (p.132).

De Caluwé and Vermaak (2003), like Caldwell, suggest that there are multiple paradigms for change and identify change agent roles, knowledge, skills and attributes aligned with each (Table 4.7). Following the argument that a change to ecocentric management is most aligned with emergent change, an effective environmental change agent might be expected to have the knowledge, skills and attributes associated with ‘white change’ in this classification.

4.3.2 Change Agent Leadership Behaviours

The role of leadership style in effective change implementation is explored by Herold et.al. (2008). Although there has been little research linking transformational leadership and change success, it is not unreasonable to assume that they will be positively linked since there is a clear association between commonly cited change leadership characteristics (Herold et. al. 2008) and those of transformational leadership (e.g. communicating a vision, building a coalition, empowering others). Their results found that transformational leadership and an individuals’ commitment to change are significantly correlated and that transformational leadership is particularly important in effective change when there is high personal impact resulting from the change. It was only under low job impact that good change leadership was correlated with support. This suggests that successful change management may require the

trust and longer term relationship building between leader and follower that is implied by transformational leadership rather than “a focus on the more immediate, change-specific behaviours” (p. 354) that it is often assumed can be learned or developed.

Table 4.7: Change Paradigms and Change Agents

Paradigm	Role	Knowledge	Skills	Attribute
Blue – change through design (programmatic or planned change)	Expert Specialist Competence The right solution The best solution Full responsibility for implementation Plan, Do, Review	Project management Relevant subject knowledge SWOT analysis Processes, systems and projects	Project management Planning and control Analytical thinking Research methods Presentation techniques	Results-orientated Decisiveness Independence Intelligence Accuracy Dedication
Yellow – change through addressing interests (aligning stakeholders to overarching aims)	Power broker Mediator Negotiator Looks for solutions with a chance Art of the possible	Strategy Top structure Stakeholder analysis	Network identification Understanding and using power Conflict resolution Influencing Strategic intervention	Independence Stability Self-control Self-confidence Perseverance Flexibility Diplomacy
White – change through emergence	Catalyst Sets out general direction and principles Energises Holds up a mirror	Chaos theory Systems theory Complexity Psychology	Pattern recognition Challenging the status quo Dealing with conflict Creating dialogue Dealing with uncertainty	Independence Authenticity Self-assured Honesty Flexibility Self-confidence Spiritual Empathy
Green – change through learning	Facilitator Coach Mentor Communicator	Learning theories Educational theories Organisational development thinking	Designing and facilitating learning situations Creating an open and safe environment Coaching, listening, feedback Role model	Trustworthiness Creativity Openness Flexibility Self-confidence Inspirational
Red – change through people (people management and emotional and psychological transition)	Management of human resources HR procedure expert Involvement and engagement Motivator	Management science HRM Motivation theories People and performance	HRM policies and procedures Communication planning Team working Discussion facilitation Motivating	Carefulness Flexibility Trustworthiness Decisiveness Loyalty Steadfastness

Adapted from Cameron and Green (2015, p.202) based on de Caluwé and Vermaak (2003)

Coetsee and Flood (2013) argue that organisational change will only occur through individual change so although vision is important, change leadership is “more about leading people; that is, creating commitment, engagement and support for change.” (p.46). They therefore argue that successful change leaders need “moral character, strong concern for self, others and ethical values” (p.5); in other words, that authentic leadership has a central role to play in

effective change agency. (See section 3.2 for a discussion of Authentic Leadership). Behaviours and characteristics they identify as important for an authentic leader in leading change are summarised in Table 4.8.

Table 4.8 Change Leadership Behaviours and Characteristics of Authentic Leaders

Personal characteristics important in leading change ...	Behaviours to demonstrate when leading change...
Being authentic	Obtain feedback
A strong self-belief	Ask challenging questions
Desire to succeed	Be willing to hear the good and bad news
Being able to cope with pressure	Create an environment where people are willing to experiment and take risks
Not be affected by setbacks	Be accessible to employees
Believe in what is possible	Walk and talk and model the change
Be willing to act as a servant	Be willing to speak out
Make time to discuss what is important to employees	Do not be afraid of conflict
Be open and honest	Do not succumb to group pressure and sanctions
Be compassionate	Be passionate about the change
Do not be afraid to take risks	Have confidence in your own ability
	Be authentic and stick to your values
	Inspire employees
	Understand the emotions of employees
	Asking the right questions to raise the bar and stretch employees
	Take personal ownership for the change
	Demonstrate behaviours such as communication, coaching, counselling and listening

Adapted from Coetsee and Flood (2013)

4.4 Environmental Change Agents

4.4.1 Introduction

Work looking specifically at environmental managers as change agents is limited (Sharma, 2002; Gattiker and Carter, 2010; Visser and Crane, 2010), indeed, Halme (2002) notes that “the most common assumption is that environmental change in an organisation is induced by top management” and that “Relatively few authors have explicitly discussed other patterns through which learning can proceed” (p. 1089), a view supported by Lozano et. al. 2015. However, the theme of change is often implicit within discussions of the role of environmental managers and indeed is explicit within commonly accepted definitions of environmental leadership (see section 3.3). As discussed in section 3.10, the importance of change agency

is also a feature of professional dialogue and is increasingly identified as a key part of the environmental professional's role.

According to Post and Altman (1994) in their work exploring the barriers and opportunities for organisational environmental change, *“the presence of sophisticated change agents within companies will enable those organisations to learn faster, respond more quickly and confidently, and achieve the innovator's advantage”* (p. 80). Similarly, Siebenhüner and Arnold (2007), in studying the factors influencing sustainability-orientated change in organisations, conclude *“Change Agents were the main influencing factors amongst the behavioural and cultural variables. Without them, observed changes probably would not have started”* (p.350). Hesselbarth and Schaltegger (2014) define a change agent for sustainability as *“an actor who deliberately tackles social and ecological problems with entrepreneurial means to put sustainability management into organizational practice and to contribute to a sustainable development of the economy and society.”* (p. 26).

4.4.2 Leadership Behaviours and Tactics of Environmental Change Agents

Literature on environmental leadership presents a range of views on the leadership behaviours most likely to be demonstrated by environmental leaders (see section 3.6). While a common element of leadership literature is the ability to lead change, only a small number of studies have looked at the effectiveness of particular leadership behaviours in the success of environmental change initiatives.

Robertson and Barling's (2013) empirical study of leader-follower dyads in US and Canadian companies concludes that *“environmental specific transformation leaders can positively affect employees' pro-environmental passion and behaviours”* (p. 186). Workers can be motivated to engage in environmental behaviour by leaders sharing their environmental values and by their leaders voluntarily enacting pro-environmental behaviours. Similarly, Ramus (2002) found that employees were much more likely to engage in pro-environmental behaviours if they felt their managers were supportive. The supervisor behaviours found to have the greatest impact on behaviour are summarised in Table 4.9.

Table 4.9: Impact of Supervisor Behaviour on Employee Pro-Environmental Actions

Behaviour (in order of importance)	
1. Environmental Communication	Participative environmental management style, including use of a democratic, non-hierarchical approach to encouraging communication from employees
2. Environmental Competence Building	Encourages environmental competence building by employees, including allocating time and resources
3. Environmental Rewards and Recognition	Using daily praise and company awards to reinforce environmental success and problem-solving
4. Management of Environmental Goals and Responsibilities	Shares environmental goals and responsibilities with employees
5. Environmental Innovation	Shows openness to new environmental ideas and encourages employees to experiment to find solutions to environmental problems.

Source: Ramus, 2002

Quinn and Dalton (2009) used Van Velsor and McCauley's (2004) 'Tasks of Leadership' framework in order to analyse how leaders of the sustainability agenda in US companies operating at the leading edge of sustainability go about implementing and maintaining sustainable practises in their organisation. The framework identifies three tasks as key to success: 1. Setting direction; 2. Creating alignment; and 3. Maintaining commitment and focus on behaviour and practice rather than skills and attributes. Under each of these tasks Quinn and Dalton identifies themes that they suggest are key to implementing sustainability. Table 4.10 summarises their findings.

Gattiker and Carter (2010) look at influencing tactics used by environmental health and safety professionals and their success in bringing about change. The use of *rational persuasion* involves the linking of factual information to business goals (aligning with Quinn and Dalton's first task and the need to be able to issue frame discussed in 3.5.1) and was found to be the tactic most frequently used by EHS professionals. However, although positively associated with increased commitment from the individual targets, it was less effective than *inspirational appeals*. The use of appeals that demonstrate alignment between the environmental aspirations of a change and the individual target's own values or aspirations was found to be the most successful tactic. The value of stressing alignment is supported by Spanjol et. al. (2015) who identify the importance of high levels of cognisance between employee and organisational environmental values. However, Crane (2000) suggests that environmental champions may actively avoid the use of inspirational value based appeals in order to avoid

marginalisation and stigmatisation. Consultation tactics, that attempt to engage others and create a sense of ownership for the change through shared decision making, goal formation and execution, were also found by Gattiker and Carter (2010) to be positively associated with successful change.

Table 4.10: Tasks and themes in implementing sustainability in organisations

Task	Theme	
Setting Direction	Framing and delivery of the message	Positive and compelling delivery – focus on opportunities and positive outcomes rather than doom and gloom scenarios; use vivid examples, emotion and creativity in communicating the message
		Relating sustainability to language of business – use business language and emphasis financial factors and practicality
		Relating the message to employees' interest in meaningful work – tap into motivation to do the right thing, emphasising legacy, future generations and positive impact
	Initiating, implementing and advising	Roles of initiator (bringing the ideas into the organisation) implementer (building buy-in throughout the organisation) and advisor (working from the outside with initiators and implementers to teach the organisation what to do) can all be successful.
	Attending to timing and readiness	There is no right approach: start slow and let the idea grow or jump in and get started; bottom up or top down. Consider what is right for the organisation
	Focusing effort	Focus the message on all elements of the organisations activities. Focus on early adopter to maintain momentum; focus on naysayers and sceptics
Creating alignment	Putting internal business practices in place	Setting up appropriate structure – create a dedicated position, set up teams
		Implementing goals and measurement
		Effective and frequent communication – formal and informal mechanisms to provide a consistent and integrated message; feedback in recognition of effort
		Educating and informing – throughout the organisation
	Stakeholder engagement	Engage with stakeholders beyond the traditional boundaries of the organisation
	Incorporation into the physical building, products and services	Integrate sustainability into all elements of the organisation
Maintaining commitment	Employee treatment	Treating employees as assets
	Reputation building	Establish a reputation with external stakeholder for 'doing the right thing'
	Building networks through sharing	Build reciprocal external networks; share best practice, ideas and practices; constant communication

Source: Quinn and Dalton (2009)

Legitimisation in which the change agent appeals to sources of legitimate power such as job position and organisational rules and policies as well as external factors such as legislation and codes of conduct would also seem to be an appropriate tactic to use given the recognised impact of regulation as a driver for environmental engagement (see section 2.4.4). Gattiker and Carter's (2010) study however, found that although the second most frequently used tactic it was not significantly associated with gaining successful commitment. This may however, depend upon the target of the change. Indeed, Gattiker and Carter note that the success of change initiatives might depend upon whether the agent is able to match the right tactic to the target's attitude.

4.4.3 Self Identities, Values and Motivation of Environmental Change Agents

Coetsee and Flood (2013) note amongst their change leadership characteristic the need to be authentic and for leaders so stick to their values, while Kurland and Zell (2011) highlight the need to 'walk the talk'. The common theme in change management literature of creating a compelling and shared vision also implies the need for leaders to have a strong value system. For environmental leaders this would, therefore, suggest the need to have an environmentally orientated value system to be successful in bringing about environmental change (Kurland and Zell, 2011; Cantor et. al., 2013).

Values in turn will influence identity and motivation to drive change (Egri and Herman, 2000). In their work on the identities of sustainability managers in Australian corporations, Wright et. al. (2012) identify three self-identities assumed by their interviewees; 'Green Change Agent', 'Rational Manager' and 'Committed Activist' (see also section 3.4.2). These identities were viewed "*not so much as fixed positions for individuals, but rather as roles or characters that were adopted in particular circumstances and for particular audiences, dependent upon the 'distance' between their self-understanding and situationally dominant discourses*" (p.1461). Table 4.11 summarise the attributes, relations and activities associated with each.

Green Change Agents very much identified themselves as advocates for environmental sustainability with responsibility for embedding lasting change in their organisation. Action was motivated by a strong personal concern for the environment which managers believed allowed them to offer new insights to organisational problems that would support organisational differentiation. However, this 'identity' was often only successful where there was an existing corporate sustainability culture or the "*patronage of executives*" (p.1462), otherwise

sustainability managers have to be willing, and able, to cope with the consequences of being outside of organisational norms.

Table 4.11: Identities of Sustainability Specialists

Identity	Attitudes, relations and activities
Green Change Agent	<ul style="list-style-type: none"> • Environmental consciousness - personal concern about the environment • Passionate about environmental sustainability • Identifying as a change agent advocating environmental sustainability • Embedding environmental sustainability within the organisation and having a lasting impact • Satisfaction in own work in environmental sustainability • Resistance encountered to environmental change agenda
Rational Manager	<ul style="list-style-type: none"> • Not being perceived as green • Improved efficiency and reduced costs as rational for environmental sustainability • Being professional and objective • Presenting environmental initiatives as a business case • Promoting environmental sustainability as a way of preventing risks to corporate reputation and community goodwill • New opportunities for value creation • Effective change agency is about being practical and pragmatic
Committed Activist	<ul style="list-style-type: none"> • Engagement is related to personal values • Individuals see their engagement with environmental sustainability as a journey • Membership of community groups and engagement in environmental activity, including volunteer environmental work • Being part of a broader community of like-minded individuals concerned about sustainability • Individuals become demoralised and burn out within organisations that fail to support their change initiatives

Source: Based on Wright et. al. (2012)

Rational Managers, in contrast, saw themselves as more mainstream, playing down any personal environmental concern. They were more likely to pursue action by 'making the business' case and recognised the importance of efficiency, profitability and shareholder value alongside the environmental agenda. As noted above not all individuals held a single identity however, a rational manager approach was commonly identified as important because it was the best way to get engagement in a corporate setting.

The final identity of Committed Activist is characterised by a strong environmental value system that may leave individuals in conflict with the discourse of their organisation. The environment rather than the business case was identified as key, with action being driven by ‘taking a stand’ on issues. Often individuals would be strongly engaged in environmental action outside of work and stressed the importance of being part of a network of “*like-minded sustainability professionals*” (p. 1464).

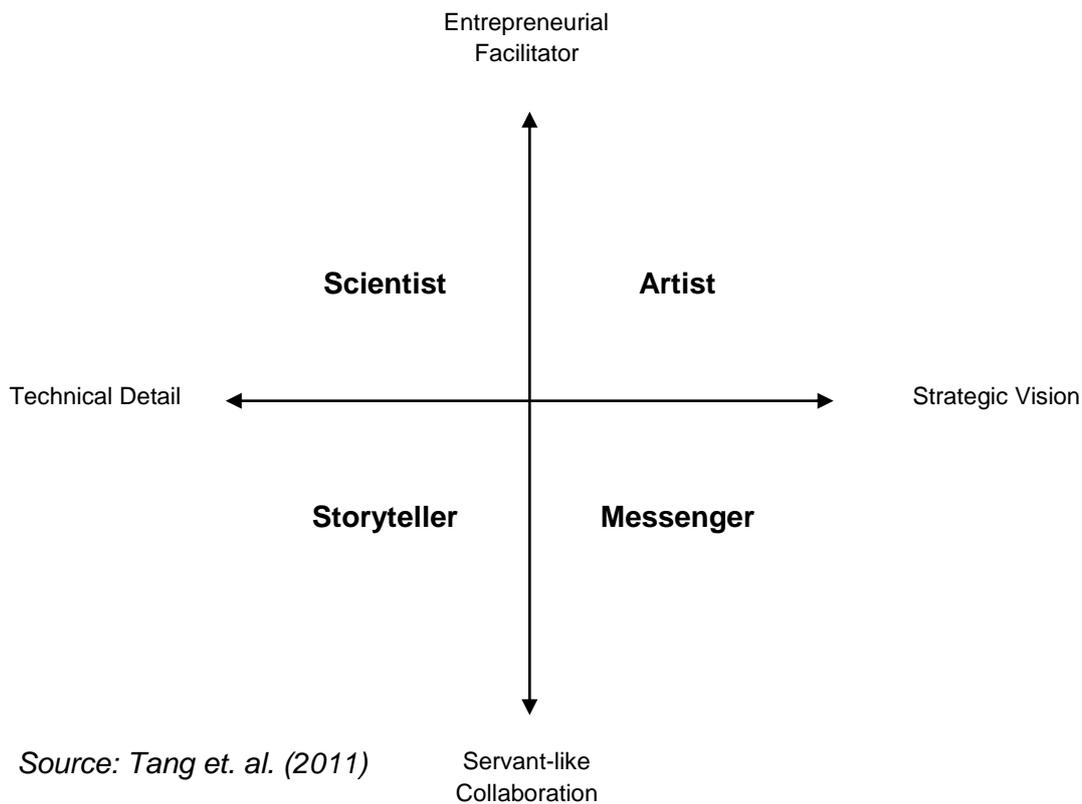
The work of Tang et. al. (2011) focuses on the motivations of sustainability managers as change agents. As well as confirming the importance of the role of sustainability managers in bringing about organisational change, they suggest that “*different types of sustainability manager represent different modes of change agency*” (p.1386). They identify four types of sustainability manager based upon how they derive meaning from their work, that is “*the mode of operating in which they felt most comfortable, fulfilled and satisfied*” (p.1379). The four categories are depicted in Figure 4.9 based upon interpersonal style (vertical axis) and contextual motivation (horizontal axis) while Table 4.12 summarises the key features of each typology.

Table 4.12: Features of the Four Types of Sustainability Manager

	Scientist	Storyteller	Messenger	Artist
Primary source of meaning	Specialist input	People empowerment	Strategic input	Societal contribution
Level of concern	Individual	Group or team	Organisational	Society
Source of work satisfaction	Personal development, quality of input	Staff development, effective facilitation	Organisational development, strategic change	Community development, social change
Skills	Technical, process	Managerial facilitation	Key players, future trends	Collaborative questioning
Knowledge	Specialist	Generalist	Key players, future trends	Community or macro needs
Legacy	Successful work projects	Staff or team’s achievement	Organisation or industry transformation	Sustainable environment and equitable society

Source: Tang et. al (2011)

Figure 4.9: Types of Sustainability Manager



Scientists may facilitate change via projects or system changes, through problem solving and by offering technical or specialist input. Success is measured by improvements in products or processes. Storytellers, in contrast, are more likely to use group learning approaches to change; training and team building are used to enhance knowledge and skills and to change attitudes. Messengers facilitate change by giving strategic direction, influencing top management and contextualising environmental issues for the organisation. Artists, in contrast, are motivated to drive change on a larger scale for the good of the environment and society as a whole, rather than to meet specific organisational needs, using collaborative and entrepreneurial approaches.

4.4.4 Skills and Competencies of Environmental Change Agents

Kurland and Zell (2011) sought to clarify the role of 'green' change agents by considering what sustainability managers do and what changes they need to facilitate. From a series of interviews, they distilled 10 activities (referred to as principles) that sustainability managers must undertake. Table 4.13 summarises their findings. The actions, they suggest, follow an approximate chronological order for change. Their work reinforces the need for an ecocentric personal value system and technical knowledge and skills alongside strong communication

skills to be able to frame the environmental message appropriately for various internal audiences as discussed in Chapter 3. Additionally, the ability to act as an advocate of the company's sustainability efforts with external audiences is demonstrated, suggesting the need for strong persuasion and negotiation skills.

Table 4.13 Activities for Sustainable Environmental Change

Activity	Description
Establish the company's green values	Sustainability managers should hold 'sustainability friendly' mental models that reflect concern for the natural environment. From core personal values they should help their company to clarify its green vision.
Formulate and execute green goals	Assist in formulating green goals in relation to operations, products and services. Champion and report upon efforts.
Establish sustainability metrics to ensure compliance	Understand what and how to measure progress towards green goals, including regulatory requirements. Collaborate with others to collect and analyse data.
Make the business case to go green	By able to make the business case for sustainability by demonstrating return on investment, operational efficiencies and strategic benefits.
Overcome resistance to change	Tailor the message to the audience. Provide education to ensure the message is clear. Publicly demonstrate personal commitment - " <i>walk the talk</i> ". Ensure changes are achievable and provide incentives.
Reinforce sustainability practices and values inside the organisation	Act as an internal consultant so that others understand the actions needed. Empower employees to contribute solutions. Establish formal and informal networks and provide training in order to disseminate the message and establish support.
Seek buy-in from suppliers	Engage the company's value chain by applying market pressure, establishing partnerships and encouraging innovation.
Engage with customers and competitors	Use outreach activities and education to engage customers. Build industry coalitions through collaboration with like minded professionals.
Engage with NGOs, regulators and the general public	Establish partnerships for mutual benefit.
Stay visible	Maintain high external visibility to enhance company sustainability reputation

Source: Based on Kurland and Zell (2011)

Doppelt (2010) similarly identifies the need for sustainability change agents to be skilled brokers and politicians able to “*negotiate disputes, develop agreements and overcome resistance*” (p. 134). Benn et. al. (2014) further expand by suggesting that in addition to effective communication skills, sustainability change agents need to be skilled at managing stakeholder relationships by, for example, networking, delegating, mentoring and team building.

Van der Heijden et. al. (2012) argue that embedding sustainability into organisational practice is an emergent change process in which sensemaking has an important role to play. Sensemaking is defined as “*a process of social interaction that shapes interpretations*” (p. 554). Based on Weick’s (2001) approach to organisational sensemaking, they identify three elements; communication, acting and building organisational relationships (p.538) which they use as a framework to consider sustainability sensemaking in a Dutch company from a change agent perspective. In relation to communication, both the use of ‘Natural Language’ (general verbal expression) and “*more specific language in the form of jargon*” for “*more detailed communication*” (p.539), are considered important. Benn et. al. (2014) support the need for appropriate language, identifying the ability to translate information into the everyday language of the workplace as an important sustainability change agent skill.

The idea that action is important in creating understanding (as opposed to understanding creating action) is central to the second element of Van der Heijden et. al.’s (2012) framework which considers the actions of change agents and the extent to which they feel they can influence change through these actions. The final element of the framework emphasises the importance of building relationships with others in creating shared meaning, and considers the approaches used by change agents to involve others. Their findings suggest that successfully embedding sustainability is highly context specific requiring “*very precise ways of communicating in the organisation and careful tuning of action to the local ways of working*” (p. 554). Like Kurland and Zell (2011), Van der Heijden et. al. therefore conclude that change agent success requires an ability to effectively translate the sustainability message for different context throughout the organisation. Other findings include the need for change agents to encourage bottom up initiatives, facilitate interaction and information exchange between people and for them to have authority and the ability to inspire others (p.554).

Crane (2000) identifies the value that external networks might have for individual environmental champions as a forum for interaction with other environmentally committed individuals, thus “*surfacing or re-surfacing individual environmental commitment which might otherwise be stifled*” (p. 684) in their workplace. Kurland and Zell (2011) identify a similar need with one of the participants in their study commenting “*People get together that are in*

environmental departments in different companies... it is nice to talk to other people in other environmental departments to hear what they are doing, and how they're doing it." (p. 55). Ballard (2005) identifies association as being one of three conditions for responding to the challenges of sustainable development (the others being awareness of the challenge and agency, or the ability to do something meaningful). He suggests that association helps to "support wavering willpower" bring a variety of perspectives and validate feedback on actions (p.144).

Hesselbarth and Schaltegger (2014) conclude from their work with MBA graduates that the "competence profile of a change agent for sustainability is not only more complex but possibly also more demanding in almost all competency fields than those of conventional managers." (p.34). From their work they identify the top 15 competencies considered most relevant by sustainability professionals (Table 4.14). Competencies were grouped into subject-specific, methodological, social and personal. It is notable in Table 4.13 that although knowledge of sustainability management was identified as the most important competency, softer skills dominate. It is notable also that the link is made by sustainability managers between change management and project management as discussed in section 4.2.1, a link also made by Benn et. al. (2014). A more detailed competency matrix for change agents derived from their study and applied to the various duties and activities associated with the role, is presented in Appendix 6.

Table 4.14: Key Competencies for Sustainability Management (in order of importance)

	Sub-competency	Type of sub-competency
1	Fundamentals of sustainability management	Subject-specific
2	Self-initiative	Personal
3	Motivational capabilities	Personal
4	Analytical skills	Methodological
5	Ability to cooperate	Social
6	Communication skills	Social
7	Self-management	Personal
8	Decision-making skills	Personal
9	Self-confidence	Personal
10	Presentation skills	Methodological
11	Strategic sustainability management	Subject-specific
12	(Self-) learning ability	Personal
13	Ability to handle conflict and criticism	Social
14	Project management	Methodological
15	Entrepreneurial thinking	Personal

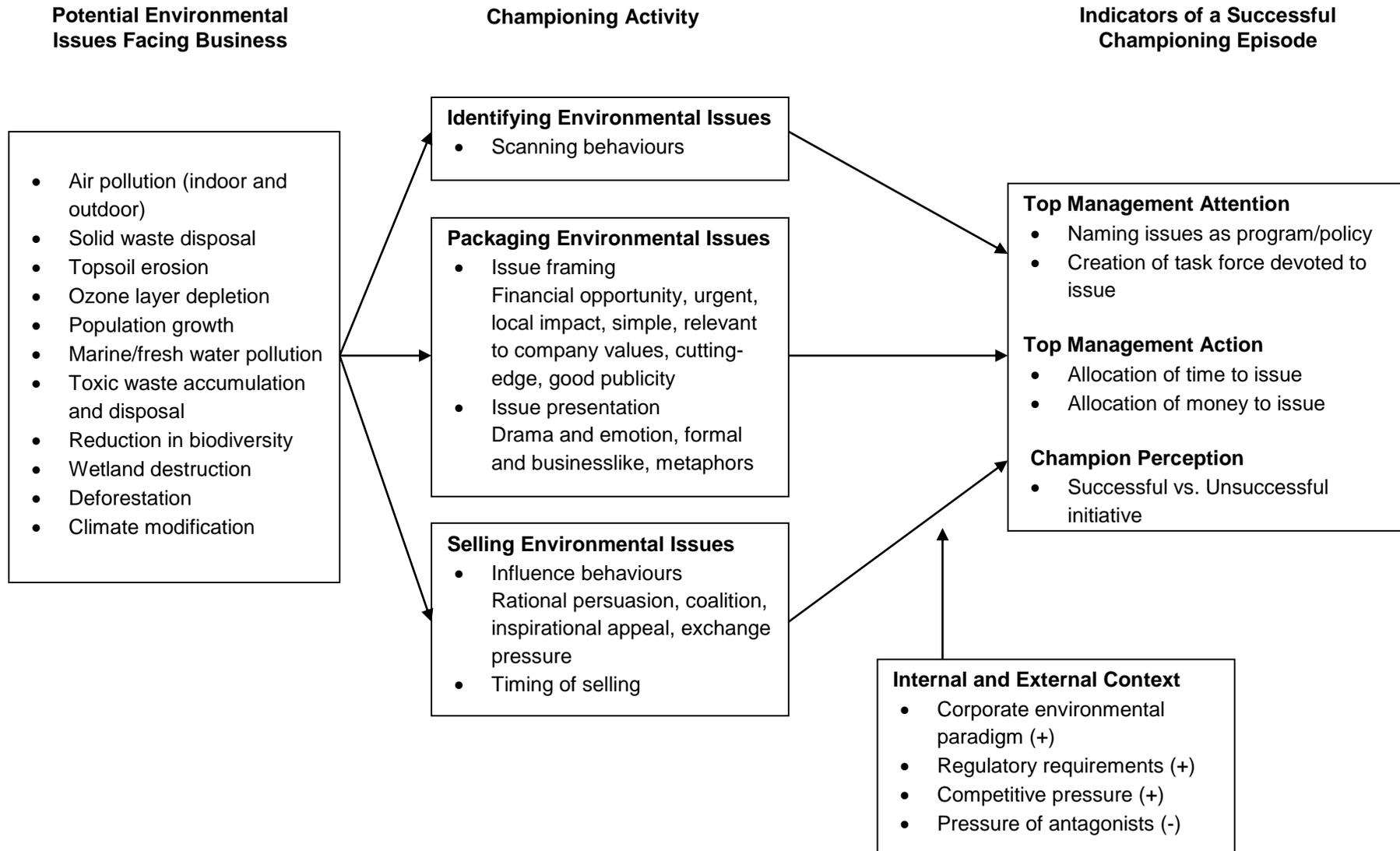
Source: Hesselbarth and Schaltegger (2014)

There is a growing literature that links entrepreneurship (number 15 on Hesselbarth and Schaltegger's list) to environmentalism and sustainable development, with terms such as 'environmental entrepreneur', 'green entrepreneur', 'enviropreneur' and 'ecopreneur' emerging (Keogh and Polonsky, 1998; Menon & Menon, 1997; Varadarajan, 1992). Most of the literature focuses on the role and motivations of such entrepreneurs in establishing new 'green' or socially orientated business, and acting as change agents in the economy and society as a whole (Walley and Taylor, 2002; Dixon and Clifford, 2007; Kirkwood and Walton 2010). However, a small number of authors have explored the role of environmental entrepreneurship (perhaps more appropriately referred to as intrapreneurship (Anderson and Bateman, 2000; Hostager et. al. 1998) in relation to environmental change within existing organisations.

Anderson and Bateman (2000) studied the role of environmental champions in US businesses, defining champions as *"individuals who, through formal organizational roles and/or personal activism, attempt to introduce or create change in a product, process or method within an organisation"* (p.549). They consider champions to be analogous with intrapreneurs or issue sponsors. The focus of their work was on how *"champions champion ideas"* rather than on the skills of the individuals per se. However, by understanding what change tactics work it is possible to make some assumptions about the behaviours and skills of an individual that may facilitate change agency. According to Anderson and Bateman championing involved three interrelated activities *"(1) identifying/generating an issue or idea, (2) packaging it as attractive, and (3) selling it to organizational decision makers"* (p.549). Their findings are summarised in Figure 4.10. Thus the skills of communication, interpretation and persuasion coupled with technical knowledge and an ability to inspire others are important.

Rothenberg (2007) identifies similar activities amongst environmental managers successfully leading change in manufacturing companies. She frames environmental managers as 'boundary spanners' interpreting and translating across a number of discourses (p.750). Such boundary scanners may also act as 'institutional entrepreneurs' when *they "sell a particular framing of institutional and technical pressures as a means to motivate change that is in their own apparent interest"* (p.750). The approaches used to instigate change are influenced, Rosenberg argues, by the internal and external context of the organisation. Strong stakeholder pressure provides the environmental manager with the power or authority to drive through change even when there may be a conflict between the environmental agenda and that of the organisation. When there is less conflict, this authority enables environmental change to be piggybacked on other business opportunities if the environmental change is carefully reframed in terms of business metrics more salient to the organisation. Without external stakeholder pressure, different tactics are needed. For example, where there is conflict but no manifest

Figure 4.10: Framework for Championing Natural Environmental Issues (Source: Anderson and Bateman (2000))



authority, environmental managers may need to use other tactics such as compromise or manipulation.

Keogh and Polonsky (1998) suggest that environmental entrepreneurship provides a model for championing environmental change by driving a shift in organisational values and culture. Environmental entrepreneurship they argue involves *“innovation, the identification of opportunities, and the exploration of seemingly disparate globalist perspectives and the inter-relationships”* (p.40). Drumwright (1994) uses the term *‘policy entrepreneur’* to encompass individuals that initiate other forms of socially responsible change as well as environmental. She also argues that policy entrepreneurs must be motivated by morality or ethics (p.4). Drumwright found that policy entrepreneurs possessed many of the characteristics of ‘business entrepreneurs’; tenacious and persistent with a high energy level, *“zealous”*, prepared to take career risks to further their ideas and *“undaunted by resisters and operational problems”* (p.4), able to accept rejection and failure, *“politically savvy”*, able to build consensus and adept in marking their case (p.5).

4.5 Conclusion

There is currently a lack of a coherent literature on the environmental change process in organisations. The approach used will be influenced by the type of change being orchestrated and the organisational culture. Siebenhüner and Arnold (2007) note the importance of change agents in this situation commenting that *“Individuals played a pivotal role in the absence of ready-made structures for the implementation of sustainable development in corporations. They exercise their influence through internal networks and can generate lasting impacts in particular within participatory styles of leadership.”* (p. 350). The work of Tang et. al. (2011) and Wright et. al. (2012) suggests that the individual identity and motivation of the change agent is also likely to play a part in the approach favoured.

The need for the successful change agent to possess a strong ethical stance, and in the case of environmental change agents, strong environmental values and an ability to demonstrate personal commitment by “walking the talking”, are identified as important. Change agents need to be able to communicate their environmental vision to others in order to create shared understanding and be authentic. Strong communication skills and interpersonal skills are, therefore, also essential.

The skills, competencies and leadership behaviours identified in the change literature complement and reinforce those identified in the more generic literature presented in Chapter 3 with few additional skills identified. Table 3.10 is reproduced here with the additional skills, attributes and behaviours identified from this chapter added in red text thus providing a complete overview of the characteristics of environmental managers as distilled from the literature (Table 4.15).

Table 4.15: Characteristics of Environmental Managers

Skills and abilities	<p>Interpersonal Skills:</p> <ul style="list-style-type: none"> • Communication • Cooperation, collaboration and team working and partnership • Negotiation and compromise • Emotional awareness, sensitivity to views of others, empathy • Assertiveness and persuasion • Political acumen <p>Leadership skills and abilities:</p> <ul style="list-style-type: none"> • Building support, networking (internal and external), affiliation, seeking views of others, collaboration, mentoring • Effective strategist • Exerting influence (individual and organisational) • Motivating and inspiring • Reconciling competing demands • Tolerance of ambiguity and uncertainty • Persistence, thinking in long-term timeframes • Tolerate and embrace diversity • Advocacy (including for the natural environment and for the organisation externally) • Change orientation <p>Other abilities:</p> <ul style="list-style-type: none"> • Dealing with complexity and contradiction and uncertainty • Anticipate and adapt, think critically • Issue framing, interpreting and reinterpreting • Conceptualisation and problem solving • Reflexivity • Dealing with conflict and criticism • Entrepreneurial thinking <p>Technical skills:</p> <ul style="list-style-type: none"> • Sector and organisation specific • Ability to measure and define progress • Project management • Presenting 	<p>Authors</p> <p>Friedman (1992); Egri and Herman (2000); Hanson and Middleton (2000); Boriel et. al. (2008); Hind et. al. (2009); Kakabadse et. al. (2009); McLean (2010); GACSO (2011); Pless and Maak (2011); Van der Heijden et. al. (2012); Laasch and Conaway (2015); Society for the Environment (nd); IEMA (2017a)</p> <p>Portugal and Yukl (1994); Catasús et. al. (1997); Crane (2000); Hanson and Middleton (2000); Egri and Herman (2000); Jacquera and Ordiz (2002); Ramus, (2002); Frenández et. a. (2006); Siebenhüne and Arnold (2007); Dalton (2009); Hind et. al. (2009); Gattiker and Carter (2010); GACSO (2011); Kurland and Zell (2011); Taylor et. al. (2012); Benn et. al. (2014); Laasch and Conaway (2015); Society for the Environment (nd); IEMA (2017a)</p> <p>Berry and Grodon (1993); Catasús et. al. (1997); Keogh and Polonsky (1998); Anderson and Bateman (2000); Crane (2000); Egri and Herman (2000); Hanson and Middleton (2000); Rothenberg (2007); Boriel et. al. (2008); Hind et. al. (2009); Kakabadse et. al. (2009); Quinn and Dalton (2009); GACSO (2011); Kurland and Zell (2011); Society for the Environment (nd); Hasselbarth and Schaltegger (2014)</p> <p>Friedman (1992); Egri and Harman (2000); Kakabadse et.al. (2009); Arnault et.al. (2012); Hasselbarth and Schaltegger (2014); IEMA (2017a)</p>
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Table 4.15 continued

<p>Leadership Approach</p>	<p>Transformational leadership characteristics:</p> <ul style="list-style-type: none"> • Visioning • Charismatic approach • Empathy • Sense making • Risk taking • Supporting and empowering others • Change advocacy • Self-sacrifice <p>Transactional leadership characteristics:</p> <ul style="list-style-type: none"> • Coordinating • Monitoring • Directing <p>Responsible Leadership</p> <ul style="list-style-type: none"> • Systemic thinking • Embracing diversity • Balancing global and local perspectives • Ethical decision making • Self-awareness • Self-regulation • Emotional awareness and empathy • Change agency • Stakeholder dialogue <p>Authentic Leadership</p> <ul style="list-style-type: none"> • Self-knowledge • Clarity of values • Honesty • Integrity • Credibility • Dependability • Self-awareness • Self-regulation 	<p>Authors</p> <p>Portugal and Yukl (1994); Hanson and Middleton (2000); Egri and Herman (2000); Jacquera and Ordiz (2002); Boiral et. al. (2009); Redkop (2010); GACSO (2011); Robertson and Barling (2013)</p> <p>Hanson and Middleton (2000); Egri and Herman (2000)</p> <p>Hind et. al., 2009; Pless and Maak, 2011; Laasch and Conway (2015)</p> <p>Coetsee and Flood (2013)</p>
<p>Personal values</p>	<ul style="list-style-type: none"> • Ecocentric belief system • Self-transcendence • Openness to change • Values learning 	<p>Fineman (1996; Catasús et. al. (1997); Egri and Herman (2000); Harris and Crane (2002); Janquera and Ordiz (2002); Durate (2010); Kurland and Zell (2011); Cantor et.al. (2013); Society for the Environment (nd)</p>

Table 4.15 continued

<p>Attributes</p>	<ul style="list-style-type: none"> • Self-efficacy • Self-discipline • Self-belief • Persistence, desire to succeed • Honesty and integrity • Courage • Open-mindedness • Long-term perspective • Enthusiasm, energy and drive 	<p>Authors</p> <p>Berry and Gordon (1993); Egri and Herman (2002); Hind et. al. (2009); Kakabadse et. al. (2009); GACSO (2011); Pless and Maak (2011); Taylor et. al. (2012); Hasselbarth and Schaltegger (2014)</p>
<p>Knowledge</p>	<ul style="list-style-type: none"> • Environmental sustainability • Organisational understanding • Legal requirements • Stakeholder requirements 	<p>Friedman (1992); Hind et. al. (2009); GACSO (2011); Taylor et. al. (2012); Society for the Environment (nd); Hasselbarth and Schaltegger (2014); IEMA (2017a)</p>

Chapter 5: Research Aims

5.1 Research Gap

Despite literature on the concept of environmental leadership spanning a number of decades, it still remains evolutionary in nature with little focus on the role of environmental managers in leading change in their organisations (Andersson and Wolff, 1996; Catasús et. al., 1997; Quinn and Dalton, 2009; D'Amato and Roome, 2009; Greenwood et. al., 2012). The skills and attributes needed to initiate and support organisational environmental change also remain ill defined (Quinn and Dalton, 2009; Van Velsor, 2009; Willard et. al., 2010; Christie et. al., 2013). Junquera and Ordiz (2002) assertion that *“the literature still does not offer a generally accepted definition of the characteristics and attributes of the successful environmental leader”* (p.36) while Redekop (2010) similarly notes that *“very little work has been done on this topic in the field of leadership studies.”* (p.2). Although the literature review reveals a broad agreement from both the academic and professional community that strong technical skills need to be mixed with business acumen and ‘soft skills’, the skills base identified is wide and varied and the balance between these broad categories imprecise. Additionally, the personal environmental values characteristic of a successful environmental manager remain contested by some authors (Fineman, 1997; Crane, 2000; Boriel et. al., 2009).

The important role that change agents play in instigating and sustaining environmental change initiatives is evident in the academic literature (Post and Altman, 1994; Siebenhüner and Arnold, 2007; Doppelt, 2010; Robertson and Barling, 2013). While this role is clearly linked in professional dialogue to the role of the environmental manager, there are still few academic studies on environmental change focused specifically on this group (Gattiker and Carter, 2010; Kurland and Zell, 2011; Tan et. al., 2011; Wright et. al., 2012) and the skills and attributes needed for success as an environmental change agent have yet to be clearly articulated. Van Velsor (2009) asserts that *“If new leaders and leadership capabilities are needed to move organisations in the direction of social responsibility and environmental sustainability, we need to know more about what practices really work”* (p. 6). Banerjee et. al. (2010) highlight a lack of *“quality qualitative empirical research”* (p.49) in the field and the need to focus on the reality of how managers manage, while MacLean (2011) notes that the traditional roles of the profession are in a state of flux and identifies the need for environmental professionals to actively engage in defining their roles, responsibilities and associated competencies. At the professional level work to define a clear competency framework is relatively new.

This research aims to fill these identified gaps in the academic literature by present an explicit environmental practitioner perspective and by synthesising and updating the divergent perspectives studied to date. At the same time, it seeks to contribute to the dialogue around skills and competencies for environmental management emerging from professional bodies.

5.2 Research Aims

The purpose of this study is to evaluate the diverse range of factors attributed in the academic and professional literature to the success of environmental managers as agents for environmental change in their organisations and to better understand how environmental managers act to bring about organisational change. The study purposely takes a holistic approach that is often lacking in other studies so that the relative importance of a diverse range of factors can be ascertained. Importantly it also gives environmental managers themselves a voice by providing them with the opportunity to articulate what they perceive to be the factors that contribute to their success. In so doing the research seeks to critically evaluate:

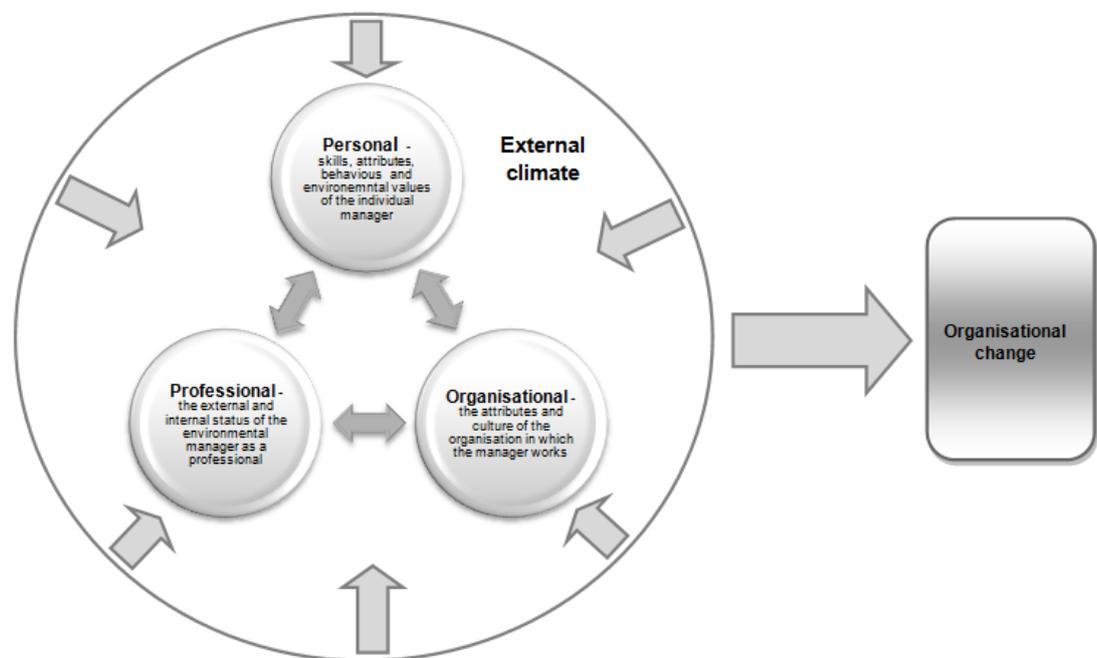
- the mechanisms used and actions taken by environmental managers to implement change in their organisations;
- the internal and external barriers and enablers for environmental change experienced by environmental managers;
- the personal skills, attributes, behaviours and environmental values they believe are needed to effect change;
- the value of professional status to environmental managers; and
- the interplay between these factors

5.3 Proposed Conceptual Model

The literature presented in Chapters 2, 3 and 4 demonstrates the wide range of factors that have been identified in research to date, however there has been little attention to the interplay that might exist between these factors. In order to bring some structure to this complexity, it is helpful to develop a conceptual model (Figure 5.1) that can form the basis of research. Factors identified in the literature have been grouped into three domains labelled; personal, organisational and professional. The personal domain encapsulates the skills, attributes, behaviours and environmental values of the environmental manager. The context in which the individual works is identified by the organisational domain; the characteristics of the organisation such as its size, sector and culture may enhance, hinder or alter the actions of the environmental manager. The final domain relates to the status of environmental management as a profession and the recognition and support that this association offers.

At any point in time these domains will be influenced by the external prevailing environmental policy climate. This in turn is influenced by the complex interactions that exist between the political, social, economic and cultural climates of the day and existing and emerging environmental issues (Roberts, 2004). These external drivers will act by, for example, altering the knowledge requirements of the individual and influencing the cultural stance and response of the organisation and other professions. Detailed consideration of the factors encapsulated in these domains is contained in the literature review and summarised in Tables 4.14 (personal) and 3.11 (organisational, professional and external context).

Figure 5.1: Proposed Conceptual Model



Chapter 6: Research Design and Methods

6.1 Introduction

The research design process involves a number of steps, each of which present the researcher with choices. Ultimately the aim is to utilise techniques that allow the researcher to address their research questions but it is highly unlikely that there is a single way to address a particular area of enquiry. The personal preferences and philosophical standpoint of the researcher will have a strong influence on the direction taken. This chapter presents and justifies the research design process adopted in this study.

6.2 Research Philosophy and Approach

6.2.1 Ontology and Epistemology

Ontology and epistemology are the foundations upon which research is built since they represent the core assumptions that underlie research work and inform the choice of methodology and methods (Grix, 2010). Ontology is derived from the Greek word 'onto' meaning 'being or that which is'. Debate about the meaning of being, or the nature of truth, therefore forms the central point, or core, of determining a philosophical basis to research. The philosophical arguments around this point lie on a continuum from the 'Realist' view that there is a single truth that exists independent of those who seek it, but that its existence can be tested by testing external reality, to the 'Nominalist' view which, in contrast, holds that there is no truth, truth simply being the construct of the understanding and meaning that we choose to attach to something (Easterby-Smith et. al., 2012). In a social context, realism postulates that the world is made up of tangible and immutable structures which are external to individual cognition. They exist regardless of whether we label them or are even appreciate their existence and will continue to exist independent of any single human being (Burrell and Morgan, 2000). Nominalists, in contrast, "*deny that there is anything knowable that is independent of mind.*" (Collier, 1994 p. 12). In other words, nominalists believe that the social world has no structure independent of individual cognition, being made up only of names, labels and concepts which we have assigned in order to create structure (Burrell and Morgan, 2000). Between these extreme views, a number of ontologies exist as summarised in Table 6.1.

Table 6.1: Ontology Spectrum

Ontology	Realism	Internal Realism	Relativism	Nominalism
Truth	Single truth	Truth exists, but is obscure	There are many 'truths'	There is no truth
Facts	Facts exist and can be revealed	Facts are concrete, but cannot be accessed directly	Facts depend on viewpoint of observer	Facts are all human creations

Source: Easterby-Smith et. al., (2012)

Since the basis of this research is the environmental manager and their real world experience, it would seem unreasonable to assume there is one 'truth' that can adequately capture the complexity of experiences of all environmental managers; each is likely to experience events in a different way and attach different meaning to them. Existing literature supports this view, suggesting that the varied experiences of environmental managers are the result of the interplay between multiple factors. Equally, from the researcher's personal perspective, with a background in the natural sciences, acceptance that there is no reality beyond human creation poses some challenges.

The relativist ontology provides a middle ground that supports the notion that there is not a single truth that can be determined but multiple perspectives on the same issues that result from the observer's individual circumstances. Thus, there can be many equally valid 'truths' (Easterby-Smith et. al., 2012). This ontology seems to provide an appropriate position for research that seeks to explore individual experiences.

Epistemology deals with how knowledge is acquired. Two contrasting philosophies underpin epistemology; positivism and social constructionism. The positivist philosophy holds that knowledge is gained through the observation of facts and that causal explanations and laws can be determined to explain what is observed (Easterby-Smith et. al., 2012). In social science positivists would seek to predict what happens by looking for causal relationships and patterns (Burrell and Morgan, 2000). Social constructionism, in contrast, holds that reality is socially, culturally and historically constructed (Reich, 2009) rather than objective and exterior, and therefore we should seek to explore and understand the different experiences that people have rather than seek to establish fundamental laws or seek regularities. There may be multiple different constructs since each person will interpret the world around them in a different way, thus there may be multiple different realities (Robson, 2002) and no one single true description of reality (Reich, 2009). To this extent, social constructionism can be considered subjective

and only understood from within (Burrell and Morgan, 2000), the research participants helping to construct reality with the researcher (Robson, 2002). Table 6.2 summarises the implications for research that arise from these contrasting positions. Strong positivism aligns with a realist ontology and strong social constructionism with a nominalist ontology. However, weaker versions of both epistemologies can be aligned with internal realism and relativism.

Table 6.2 Research Implications of Positivism and Social Constructionism

	Positivism	Social Constructionism
The observer	Must be independent	Is part of what is observed
Human interests	Should be irrelevant	Are the main drivers of science
Explanations	Must demonstrate causality	Aim to increase general understanding of the situation
Research progresses through	Hypotheses and deductions	Gathering rich data from which ideas are induced
Concepts	Need to be defined so that they can be measured	Should incorporate stakeholder perspectives
Units of analysis	Should be reduced to simple terms	May include the complexity of 'whole' situations
Generalization through	Statistical probability	Theoretical abstraction
Sampling requirements	Large numbers selected at random	Small numbers of cases chosen for specific reasons.

Source: Easterby-Smith et. al., (2012)

Since the researchers' declared ontological position is relativist, some further exploration of those philosophies that align epistemologically in the middle ground between the extremes of positivism and social constructionism is appropriate. Critical Realism and Pragmatism provide two such philosophies.

Critical realism is a philosophical position most associated with the works of Roy Bhaskar which combines elements of both positivist and constructionist paradigms. Grix (2010) explains this by suggesting that critical realism attempts to combine *“the how (understanding – which is linked to interpretivism and the ‘why’ (explanation – which is linked to positivism)”* (p.85). Thus, critical realism attempts to *“not only understand but also explain the social world”* (p.86). Starting from a realist ontology, critical realism is based on the belief that social phenomena

result from the action of generative mechanisms on structures (Bhaskar, 1989). “*We are only able to understand – and so change – the social world if we identify the structures at work*” (Bhaskar, 1989 p. 2). It recognises that social conditions have real impacts (which may or may not be observable) but that individuals both generate these conditions and are impacted by them (Fleetwood and Ackroyd, 2004). Although there is an independent reality, the only way which we can interpret it, is through our own subjective conceptual model (McLachlan and Garcia, 2015). This dynamic interplay between social interactions means that prediction of outcome using objective measures is not possible (Denicolo et. al., 2016) but this does not stop us being able to explain past events by interpreting the causal mechanisms (Robson, 2002).

Critical realism requires the researcher to look beyond what is observable in order to look for causal links through interpretation. Both human agency and setting are important, with both being causal factors which are mutually constitutive but can, for the purpose of research, be analysed separately. Importantly, critical realism considers only human agents (actors) as being capable of initiating action while social structures provide the setting within which the action takes place by either facilitating, constraining or otherwise influencing the actions which are pursued (and thus act only as material causes) (Lewis, 2002; Grix, 2010). Thus, in relation to this research project, both the environmental manager as agent and their setting in terms of the organisational and external context within which they work, are important if we are to understand environmental manager success.

Pragmatism provides an alternative philosophy that is positioned between internal realism and relativism but has many affinities and commonalities with constructivism (Reich, 2009). Early work establishing this philosophy is most associated with Charles Sanders Pierce (1839-1914), William James (1842-1910) and John Dewey (1859-1952) but Richard Rorty is attributed with establishing current concepts of pragmatism (Bauerlein, 1997). A key difference between the classic pragmatism of James and Dewey and the neo-pragmatism of Rorty, is a focus on language and hence communication in the latter rather than the experience of individual minds (Sundin and Johannisson, 2005). The concepts of ‘truth’ and ‘sensemaking’ are at the heart of pragmatism. The truth value of a statement is measured by how useful it is in enacting change rather than by how accurately it represents the external world (Baker and Schaltegger, 2015) thus, some statements are more ‘true’ than others (McKernan, 2007) and truth is linguistically mediated. Pragmatism holds that information is useful if it helps people to create a better world and the purpose of knowledge is to gain the understanding needed to deal with problems. Pragmatism is thus considered a practical philosophy (Wicks and Freeman, 1998; Sundin and Johannisson, 2005).

Sensemaking refers to the process by which individuals “*come to understand truth when engaging with the world*” (Baker and Schaltegger, 2015, p, 265). How individuals interpret and make sense of information and how this then affects their judgement, beliefs and actions is central to pragmatism. Sensemaking not only relates to how we develop understanding but it also changes the world around us; “*our environment, our organisations and our social relations exist as a result of the choices and meanings that we, as individuals and collectives, ascribe to them over time.*” (Baker and Schaltegger, 2015, p, 270). Pragmatism is focused on the individual and the meaning they attach to their experience. However, it does not preclude the exploration of regularities and similarities in the process of sensemaking (Allard-Poesi, 2005). Pragmatic research should focus on serving human purpose (Wicks and Freeman, 1998) by determining what is useful in bringing about change. By better understanding how individuals derive meaning from a particular situation, we may inform new possibilities and change (Baker and Schaltegger, 2015). Thus pragmatism, with its emphasis on sensemaking, human agency and change, resonates with the emphasis of this study on environmental managers as agents for environmental change.

6.2.2 Approach and Methodology

The research approach can be broadly divided into inductive and deductive. Deductive approaches start with a theory from which a hypothesis is derived. Observations are then gathered to test the hypothesis and the theory thus confirmed or rejected. Inductive approaches in contrast, start from specific observations and measures which are analysed to identify patterns from which tentative hypotheses can be formulated. This then allows general theory or conclusions to be derived. Deductive approaches are more aligned with a positivist philosophy while inductive approaches are more aligned with a social constructionist philosophy. Research into the skills, attributes, behaviours and values of environmental managers spans this spectrum with, for example, Egri and Herman (2000) and Junquera and Ordiz (2002) taking a deductive approach while Fineman (1997) and Crane (2000) take an inductive approach.

Although a review of the literature has been used to construct a conceptual model for this research, the lack of agreement amongst authors hinders the formulation of theory and hypothesis, pointing to an inductive approach being of greater value. Indeed, this approach better aligns with the critical realism philosophy. Williams and Schaefer (2012) agree, arguing that an inductive approach allows us to “*capture people’s own understanding of their engagement [with environmental issues] and motives*” (p.177). Crane (2000) justifies an

inductive approach on the basis that there is relatively little existing theory on the greening of organisations.

Methodology refers to the general way of undertaking research. Methodology is often divided into the broad categories of quantitative and qualitative. Robson (2002) refers instead to 'fixed' and 'flexible' design strategies. Fixed strategies, he notes, almost always deal with data in the form of numbers gathered from a tightly defined research design specified prior to data collection. Flexible designs, in contrast, evolve as the data is collected and typically collect non-numeric data, often in the form of words. Qualitative studies require the systematic collection, organisation and interpretation of data (Malterud, 2001). Flick (2009) identifies the value of qualitative research in a pluralised society since it is orientated towards "*analyzing concrete cases in their temporal and local particularity and starting from people's expressions and activities in their local contexts*" (p. 21) and Patton (2002) points to the value of qualitative research in deepening understanding. Georg and Fussel (2000) argue "*the process of greening an organisation is best studied in an interpretive, pragmatic and descriptive way*" (p.184).

Methodological approaches are derived from the epistemological position adopted since the data we gather, and the way in which we go about gathering it, depend upon our assumptions about knowledge and how it is acquired. Broadly, quantitative and fixed designs aligning with a positivist stance and qualitative, flexible approaches with social constructionism. Critical realism embraces both qualitative and quantitative approaches to data collection believing that both can offer relevant insight. Indeed, Fleetwood and Ackroyd (2004) note the need for creative combinations of both kinds of data. A pragmatic approach however, largely necessitates a qualitative research approach since it is focused on understanding the participants experience of the situation in question. A qualitative, flexible research design thus is appropriate for this research, which seeks to explore the experiences of environmental managers as they implement change in their organisations. This view is supported by Quinn and Dalton (2009) who arguing that the lack of a rigid methodology for sustainability, the still exploratory nature of the field of sustainability leadership and the complex nature of leadership in general means that qualitative approaches are more suitable. It also addresses the research gap noted by Banerjee et. al. (2010) who champion the need for qualitative and empirical research in the field of corporate greening.

A range of qualitative research designs exist each with their own epistemological and theoretical positions. However, there remains a lack of consensus in how to classify these various approaches (Patton, 2002) which is further complicated by the practice of combining perspectives. Patton's classification into 16 perspectives (Table 6.3) provides one such

classification but the author notes that this is not an exhaustive list and that the boundaries between perspectives are 'fuzzy'. There is no right or wrong framework; each has strengths and limitations.

Table 6.3: Variety in Qualitative Inquiry: Theoretical Traditions

Perspective	Central Questions
Ethnography	What is the culture of this group of people?
Autoethnography	How does my own experience of this culture connect with and offer insights about this culture, situation, event, and/or way of life?
Reality testing: Positivist and realist approaches	What's really going on in the real world? What can be established with some degree of certainty? What are plausible explanations for verifiable patterns? What's the truth insofar as we can get at it? How can we study a phenomenon so that our findings correspond, as much as possible, to the real world?
Constructionism/ Constructivism	How have people in this setting constructed reality? What are their reported perceptions "truths", expectations, beliefs and worldviews? What are the consequences of their constructions of their behaviours and for those with whom they interact?
Phenomenology	What is the meaning, structure and essence of the lived experience of this phenomenon for this person or group of people?
Heuristic Inquiry	What is my experience of this phenomenon and the essential experience of others who also experience this phenomenon intensely?
Ethnomethodology	How do people make sense of their everyday activities so as to behave in socially acceptable ways?
Symbolic Interaction	What common set of symbols and understandings has emerged to give meaning to people's interactions?
Semiotics	How do signs (words, symbols) carry and convey meaning in particular contexts?
Hermeneutics	What are the conditions under which a human act took place or a product was produced that make it possible to interpret its meanings?
Narratology/ narrative analysis	What does this narrative or story reveal about the person and world from which it came? How can this narrative be interpreted to understand and illuminate the life and culture that created it?
Ecological psychology	How do individuals attempt to accomplish their goals through specific behaviours in specific environments?
Systems theory	How and why does this system as a whole function as it does?
Chaos theory: Nonlinear dynamics	What is the underlying order, if any, of disorderly phenomenon?
Grounded theory	What theory emerges from systematic comparative analysis and is grounded in fieldwork so as to explain what has been and is observed?
Orientalist: feminist inquiry, critical theory, queer theory amongst others	How is X perspective manifest in this phenomenon?

Source: Patton (2002)

Applying this classification to the research aims of this study, a phenomenological perspective provides the best reference framework. The focus of this study is the environmental manager and their day to day experiences of doing the job, the barriers and enablers they encounter and the interplay between internal and external factors and their personal beliefs, skills and attributes. There are various interpretations of phenomenology but according to Patton (2002) they share a common focus on *“how human beings make sense of experience and transform experience into consciousness”* (p.104). A phenomenon may include a range of experiences such as an emotion, a culture, an organisation or a job. In this study the shared experience is the job of leading environmental change in an organisation. Phenomenological enquiry requires us to know what people experience and how they interpret those experiences so this requires access to people who have directly experienced the phenomenon (have *‘lived experience’*) as opposed to second hand experiences. Each individual’s experience is unique but Phenomenology also assumes that there are core meanings that are *“mutually understood through a phenomenon commonly experienced”* (Patton, 2002, p.106) and so requires analysis across participants to determine the basic elements of experience that are common.

6.3 Methods

Numerous methods of data collection exist each with strengths and weaknesses. The most suitable methods will depend upon the information required and the research design adopted (Robson, 2002). Interviews provide a common means of gathering data in flexible, qualitative research designs aimed at gaining insight into people’s experiences, and when exploring complex topics. They enable the researcher to explore the topic directly with the person who has the experience and to *“enter into the other person’s perspective”* (Patton, 2002, p. 341). This emphasis is crucial in phenomenological studies where the first-hand accounts of those experiencing the phenomenon are the focus of research. Interviews have the advantage of allowing researchers to study the natural language used by participants which can add richness to the data collected. Face to face interviews also allow non-verbal cues to be used to enhance understanding of verbal responses. A range of approaches exist from fully structured to unstructured interviews, providing the researcher with further flexibility in the approach to adopt. In all but the most structured interview, questions can be adapted as the interview progresses in order to clarify responses, explore points made in greater depth or follow a new idea or theme as it emerges. Open-ended questions allow the respondent to choose how to respond and create a rich source of information (Patton, 2002).

Interviews however, have disadvantages with lack of standardisation and reliability often raised as concerns (Robson, 2002). Bias, both in terms of the responses elicited from questions and in the interpretation of responses, may also be a problem. Use of open ended questions can go some way towards preventing bias during the interview and a rigorous and structured approach to analysis can help to ensure meaning is appropriately attached to the data. Interviewing can also be a time consuming means of collecting data that requires careful preparation to ensure meaningful data is obtained. The quality of the data obtained is, to a large extent, dependent upon the skills of the interviewer (Patton, 2002).

Taking account of these advantages and disadvantages, and the fundamental aim of this research being to understand the role of the environmental manager as change agent from their own perspective, semi-structured interviews were considered the best approach to use to gather data. This approach is consistent with that adopted by other authors studying environmental managers and leaders (Fineman, 1996 and 1997; Quinn and Dalton, 2009; Kurland and Zell, 2011; Wright et. al., 2012; Williams and Schaefer, 2013). A set of interview themes were derived from the literature for each of the four domains in the conceptual module (personal, organisation, professional and external). This served as an interview guide, ensuring a degree of consistency between the interviews but at the same time allowed the researcher the freedom to explore and probe areas of interest in more depth and to adapt questioning to accommodate new directions of exploration as themes emerged during the interview and the study progressed (Quinn and Dalton, 2009). All interviews were recorded and subsequently transcribed for analysis.

6.3.1 Study Participants and Sample Size

The selection of participant in qualitative studies is an important consideration. Flick (2009, p.318) suggest that the research group under study can be defined *a priori* where the intention is to consider different views that might exist within a pre-defined group whose perspectives might offer most insight into the topic. Data is collected in a manner that allows comparability between the participants by defining topics but remaining open to the emergence of new topics.

For this research, the study group was defined as people based in the North East of England who have responsibility for environmental management in their organisation, whether as the whole or as part of their role, including those addressing environmental issues as part of a wider sustainability role. Given the dilemmas around the range of job titles which may contribute to environmental management within organisations (see section 2.5), this definition of the study group is deliberately broad and defined by function rather than job title. The choice of the North East of England as the study focus was purely pragmatic as it allowed the

researcher to use existing networks and contacts to access potential participants and maximised the time available for interviews.

Since the characteristics of the population of environmental managers in the North East (or indeed nationally) is not known, statistical generalisation from the sample to the population as a whole is not feasible. Non-probability, or purposive sampling is therefore relevant (Robson, 2002). Predominantly studies to date have focused on environmental managers in a single sector (e.g. Fineman, 1996 – supermarket sector; Fineman, 1997 – automotive industry; Arnaut et. al., 2012 - food Industry). This emphasis may account for some of the variability in findings between studies. Although issues of generalisability are potentially exacerbated, maximum variation, or heterogeneity sampling allows some of the issues associated with single sector studies to be overcome. This approach aims to identify common patterns that emerge from a purposefully varied sample and in so doing, identify cross cutting themes and shared dimensions of experience and potentially allows internal generalisation for the study group (Patton, 2002). At the same time, it allows each participant case to be considered individually so that uniqueness is also captured (Patton, 2002). Thus, for this study, purposive sampling was employed where by the researcher's judgement and experience was used to identify a sample population of interest and relevance. Participants were selected, within the constraints of time and resources available, to ensure a range of sectors and organisation sizes were represented, along with a variety of role types within the broad role definition identified above. Thus, the sample population included participants from the health care, retail, manufacturing, insurance, public and service sectors, with small and medium sized enterprises through to global multinational organisations being represented. The individual participants held a range of roles that incorporated environmental management alongside other roles to varying degrees and included Environmental Managers, Safety Health and Environmental Managers and Corporate Sustainability Managers. Gender was not identified in the literature as an issue of particular note but participants were selected to avoid a predominance of a single gender. All had an environmental leadership role within their organisation and therefore were experienced environmental professionals rather than being new to the profession. Further details of the participants and their context emerging from the analysis of interviews is provided in Chapter 7.

Sample size is often contentious in qualitative studies (Boddy, 2016) since, unlike probability sampling where a population size to obtain a 95% confidence level in analysis is frequently taken as the threshold for representativeness, no such threshold can be logically applied in a purposeful study. The sample size will depend upon the purpose and rationale of the study (Patton, 2002) and partially upon the paradigm within which the study is undertaken (Boddy, 2016). For example, studies orientated towards positivism will require larger sample sizes

(Boddy, 2016). Sample size is often argued on the basis of saturation where no new insights are gained by adding additional cases. However, in heterogeneity sampling where the participants are purposefully selected to add variation, saturation may be difficult to achieve and a pragmatic decision based on time and resources available to continue sampling may have to be made. With limited resources a trade-off may need to be made between depth and diversity; do you seek to represent maximum diversity at the expense of depth or achieve greater depth at the expense of some diversity? Guest et. al. (2006) note that “*guidelines for determining non-probabilistic sample sizes are virtually non-existent*” (p.59) and found contradictory advice. For example, they cite Creswell (1998) as recommending between 5 and 25 interviews for phenomenological studies and 20 to 30 for grounded theory studies along with Kuzel (1992), who recommends 6 to 8 interviews for homogeneous samples and 12 to 20 for when studies are concerned with variations rather than similarities. Saunders (2012) suggest that a range of between 5 and 25 interviews is sufficient. From their own analysis Guest et. al. (2006) conclude that saturation, when using a standard set of interview questions with a homogeneously defined study group, occurs by 12 interviews and that 6 would be sufficient to “*enable development of meaningful themes and useful interpretations*” (p.78). Boddy (2016) however, concludes that where qualitative research is concerned with developing depth rather than breadth, and is conducted under a constructivist paradigm, a single case study involving a single participant can generate valid results. William and Schaefer’s (2013) study of managers’ environmental values used 9 interviews of 60 to 90 minutes while Quinn and Dalton’s (2009) study of environmental leaders used 17 interviews of a similar length. Kurland and Zell (2011) in contrast used a larger study group conducting 30 interviews.

Malterud (2001) suggests that the intended external validity for the study will also influence sample size. Where the intention is not to ascertain factors applicable to the population at large, rather to provide theories applicable within a specific setting as is the intention in this study, a smaller sample size may be acceptable. The issue of validity is explored further in section 6.5.

This study is based on a relativist paradigm and uses semi-structured interviews in order to explore internal generalisation amongst a study group which, although heterogeneous in terms of its make-up, is bounded by the common criterion of ‘Environmental Managers in the North East of England’. A sample size of 10 participants was therefore considered adequate. Interviews lasted up to 65 minutes and were digitally recorded then transcribed.

6.4 Data Interpretation and Analysis

Approaches to the analysis of qualitative data range from quasi-statistical methods that have the determination of word and phrase frequencies as the basis of analysis, to immersion approaches that rely on researcher insight and creativity to interpret data (Roberts, 2002). Quasi-statistical approaches such as content analysis have a stronger positivist epistemology while immersion approaches are aligned with a constructionist view. Between these extremes lie techniques that seek to make sense of the data by systematically seeking patterns in the data. The distinctions between these various approaches are not always clear but they vary in the extent to which *a priori* codes derived from the existing literature are used as the starting point for analysis, and the extent to which the researcher's creativity is used to achieve theoretical abstraction from the data. Such approaches are better aligned with the critical realism or pragmatic epistemology and include grounded theory and thematic analysis.

The grounded theory approach consists of a series of strategies for data collection and analysis which together enable the "*discovery of theory from data*" Glaser and Strauss (1967, p.1). It is a non-linear and iterative approach in which data collection and analysis occur concurrently. Concepts or themes emerging from one stage of data collection are compared to those emerging from the next stage of theoretical sampling until no new concepts emerge and saturation is reached. Theory thus emerges from the data rather than from prior assumptions.

Thematic analysis offers an alternative approach in which *a priori* concepts form the basis of initial stages of analysis but concepts may change or be added to as analysis progresses. It has the advantage of allowing individual cases to be considered in depth, thus preserving the meaning and relationships that each individual articulates within the topic being studied (Flick, 2011) as well as allowing the exploration of themes across participants. Flick (2011) suggests that thematic analysis should begin with a short characterisation of each case with respect to the research question.

Since a number of initial themes had been identified from the literature and formed the basis of the interview guide, and participants were pre-selected at the start of the study in order to achieve heterogeneity, thematic analysis rather than grounded theory presented the most appropriate analytical framework for this study. The phenomenological perspective adopted for the study emphasises both the value of individual experiences and the need to distil shared experiences of the phenomenon, thus again pointing to the value of thematic analysis. Braun and Clarke (2006) suggest that thematic analysis provides "*a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex account of data*" (p. 78). However, they also comment that it is a "*poorly demarcated*" method. In part this may be because of the flexible way in which it can be used, allowing equally for a detailed analysis of

one aspect of data or an analysis of the data set as a whole. It can be used inductively as well as deductively and can be used within different theoretical frameworks. A particular form of thematic analysis referred to as Template Analysis was selected for this study (King, 2012).

6.4.1 Template Analysis

Template analysis is a form of thematic analysis which “*balances a relatively high degree of structure in the process of analysing textual data with the flexibility to adapt it to the needs of a particular study*” (King, 2012 p. 426). The technique involves the development of a coding template to summarise the themes that emerge from the researcher’s evaluation of the data. Hierarchical coding is used to organise themes and sub-themes. Initial themes may be *a priori* but new themes will emerge as initial analysis progresses. Once the template is developed it is applied to the remaining data and modified if required. All data is then coded against the final template which serves as the basis for interpretation and write up of the analysis.

King (2012) identifies a number of advantages of template analysis. The technique when compared in particular to Grounded Theory, is less prescriptive in respect of the data collection and analysis procedures, thus giving the researcher the flexibility to better adapt the technique to the specific requirements of their study. Flexibility in the coding structure is seen as important. Although hierarchical, template analysis does not require a specific number of levels in the hierarchy, thus encouraging different depths of analysis to develop depending upon the richness of the data for each research question. Nor does it make an explicit distinction between descriptive and interpretive themes or where each is positioned in the hierarchy (King, 2012).

Template analysis allows both deductive and inductive analysis to occur. A small number of *a priori* codes specified in advance allows key themes or concepts from the literature or practice to be explored. However, King (2012) stresses that these must only be used tentatively and can be redefined or discarded as inductive analysis takes place to create a detailed template.

It is important to note that the creation of the template and applying it to the coding of text is not the end point of template analysis. The coded data still need to be interpreted. Braun and Clarke (2006) in discussing thematic analysis in general, caution against simply using the themes used in the interview guide and failing to consider patterning of responses across the data set. Analysis should go beyond the specific content of the data to extract meaning.

6.4.2 Template Creation and Data Coding in Template Analysis

Template analysis involves the construction of a template of themes against which data is coded. According to King (2012), a theme is “*the recurrent and distinctive features of participant’s accounts that characterise perceptions and/or experiences, seen by the researcher as relevant to the research question*” (p.431). Braun and Clarke (2006) note the active role that the researcher must play in identifying themes and creating links. King (2012) agrees, noting that “*themes are not independent from the researcher who defines them*” (p. 431). He also notes that a theme is not a single instance but is something that is repeated across several cases in the data, or several times within one case. Themes must be as distinct as possible from each other, although some overlap is inevitable.

Coding evolves attaching labels to segments of the data (usually a line or paragraph in the text) in order to relate them to a theme. Any given segment may be related to more than one theme; referred to by King (2012) as parallel coding. Template analysis uses a hierarchical coding system in which similar codes are clustered to produce higher order codes. The technique does not require a fixed number of levels in the hierarchy or that a consistent number of levels be employed for each theme. Integrative themes that cross cut other themes may also be identified, thus lateral as well as hierarchical links may exist within the template.

The process of template creation used in this study follows that outlined by King (2012) as depicted in Figure 6.1 and is consistent with the approach used in corporate environmental engagement studies by Banerjee (2001) and Williams and Schaefer (2013). *A priori* themes identified from the literature were used as the starting point (Table 6.4) to create an initial template.

Table 6.4: A Priori Themes

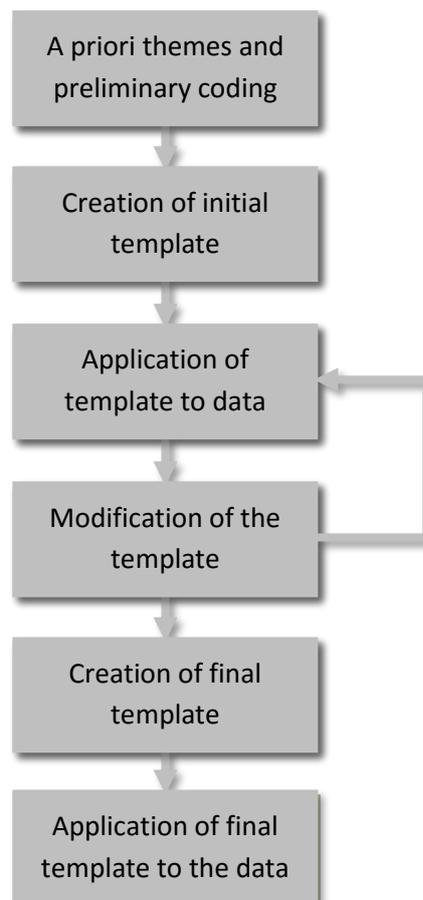
Theme	Sub-themes
Organisational environmental orientation and context	Environmental engagement, sector, response to barriers and drivers
Personal value system	Personal environmental stance, alignment with organisational culture, self-identity
Personal characteristics	Skills and abilities, attributes, behaviours and knowledge
Professional identity	Status, ownership of environmental change agenda, support
External climate	Barriers and drivers to organisational engagement
Change agenda	Approach to change, target for change (tangible, intangible), tools for change

The initial template is then applied systematically to the remaining data cases. Any inadequacies in the template revealed by this process are addressed by making changes to the template. This may involve insertion of new themes, deletion of previously defined themes, merging of themes that no longer appear to be distinct, and changes in the hierarchy of themes, either by repositioning themes or by adding or taking away levels. The template is then reapplied to the data and further modifications made.

According to King (2012) “One of the most difficult decisions to make when constructing an analytical template is where to stop the process of development.” (p. 444). Often the decision will be a pragmatic one based on time constraints but it is important to ensure that all segments of data of relevance to the study are able to be coded by the final template.

The final template used for analysis in this study is presented in Appendix 7.

Figure 6.1: Template creation



Based on King (2012)

6.4.3 Use of Qualitative Data Analysis (QDA) Software: NVivo

Software packages can be used to support qualitative analysis by facilitating data storage and retrieval, coding and comparison between interviews. One of the advantages identified for the use of QDA software is speed in searching data and attached codes. Storage, cross referencing, linking and filtering of data can also be facilitated as can the sharing of data analysis between researchers (Flick, 2009). Roberts (2002) also suggests that QDA software can help to develop a consistent coding scheme and forces all text to be considered in detail on a line-by-line basis. Criticism of the use of software in support of this process includes the time and effort required to become proficient in use, difficulties in changing the data structure once established and the danger that the software imposes a specific approach to data analysis (Roberts 2002). Ultimately, qualitative data analysis remains a creative process that must be undertaken by the researcher who must decide upon the themes, name them, work out how they fit together and what meaning to extract from the data (Patton, 2002).

NVivo (version 10) was used in this study in order to store transcripts and code data following establishment of the final template. NVivo is widely available and is not rigidly tied to a particular approach to qualitative data analysis, hence is suitable to support data analysis in this study.

6.5 Issues of Quality in Qualitative Research

Validity, reliability and generalisability are often cited as key criteria in defining the quality of a study (Easterby-Smith et. al., 2012). However, the meaning of these terms differs between research traditions as illustrated in Table 6.5. Guba and Lincoln (1989) suggest alternative criteria should be used in qualitative research, identifying credibility, dependability, confirmability and transferability as appropriate alternatives (aligning with internal validity, reliability, objectivity and generalisability respectively). Malterud (2001) suggests reflexivity should be added as an equally important measure. Patton (2002) suggests that the criteria used to judge quality will depend upon the particular philosophical and theoretical orientation of the research (p.542).

Table 6.5: Perspectives on Measures of Quality

Viewpoint	Strong Positivist	Positivist	Constructionist	Strong Constructionist
Validity	Do the measures correspond closely to reality?	Do the measures provide a good approximation to the variables of interest?	Have a sufficient number of perspectives been included?	Does the study clearly gain access to the experiences of those in the research setting?
Reliability	Has the design eliminated all alternative explanations?	Will the measures yield the same results on other occasions?	Will similar observations be reached by other observers?	Is there transparency about data collection and interpretation?
Generalisability	To what extent does the study confirm or contradict existing findings in the same field?	How probable is it that patterns observed in the sample will be repeated in the general population?	Is the sample sufficiently diverse to allow inferences to other contexts?	Do the concepts and constructs derived from this study have any relevance to other settings?

Source: Patton (2002, p. 542)

In all research, but particularly so in qualitative research, the idea of the researcher as a neutral bystander is disputed. The researcher's personal beliefs and background and presence as an integral part of the research process, will influence the outcomes of the research. Thus, two researchers might reach different but equally valid conclusions from the same study. Malterud (2001) argues this should be seen as a positive since multiple perspectives on complex phenomena can enhance understanding, but urges that the effects of the researcher be assessed at all stages of the study and shared. It is therefore important at this stage to reflect upon the researcher's personal position in relation to this study. As a former environmental manager, and someone who has maintained links with the professional practice of environmental management through involvement in professional networks in the region, it is impossible to maintain a neutral position in relation to the research topic. I inevitably have preconceived ideas of what the role entails and the challenges faced in implementing environmental change. This insight however, has the advantage of allowing me to enter into conversations with participants from the position of an empathetic fellow practitioner. It also reinforces my belief that the complexity of each individual's situation will influence the challenges they face and the approaches they take, and thus help to ensure that, in analysing the data, no preconceived idea of reality will be imposed.

Validity of a study can be considered both in terms of internal validity (does the study investigate what it is supposed to?) and external validity (in what context can the findings be applied?) (Malterud, 2001). The need for the researcher to declare their philosophical position and present an epistemologically congruent research design, is seen as essential in demonstrating the internal validity of qualitative studies (Symon and Cassell, 2012). Similarly, the steps taken to move from data to findings must also be transparently presented (Malterud, 2001; Braun and Clarke, 2006). The various decision making steps to ensure internal validity in the research design for this study have been discussed in the previous sections. However, it is important to reflect upon potential limitations.

Symon and Cassell (2012) point out that the validity of interviews as a means of discovering the reality of a particular situation is rarely questioned. Yet caution should be exercised in assuming that they are wholly trustworthy and provide a completely authentic representation of reality. It is possible that those interviewed carefully select how they wish to be portrayed and do not fully disclose information that they feel may cast them, or their organisation, in a negative light. Thus, it is important to exercise caution in interpreting and presenting interview data, not to make unwarranted truth claims. Of the participants in the study, some were known well by the researcher, others much less well and some not at all prior to the interviews. Pre-existing relationships may have influenced the participants' willingness to openly talk about their experiences but conceivably this may have made some more willing to disclose the truth and others less so.

It is important to recognise that there will always be a level of subjectivity in the design of the template for data analysis. In group research projects this can be mitigated to an extent by members of the research team independently coding the data and then using an iterative process to reach agreement on the final template design. Where this is not possible, King (2012) advocates the compilation of an 'audit trail' which documents the development of the template, recording the changes made and the reasons for them. The audit approach was adopted for this study with the various stages of template development presented in Appendix 8. It is relevant to note at this stage that the number of new themes added to the template diminished as new participants were added, suggesting that a further increase in sample size would not have resulted in a significantly different framework for analysis (Guest et. al., 2006). Braun and Clarke (2006) provide a checklist of criteria to ensure good quality in the conduct of thematic analysis (Table 6.6) which has been used in this study as a guide.

External validity raises questions of transferability or generalisability of the findings. To what extent can the findings of the research be applied beyond the study group and in what context? The answers to these questions will depend upon the purpose of the study and the sample

strategy applied. In many qualitative studies the purpose is not to produce findings that are valid for the population as a whole, and indeed may only be valid for individual cases. Patton (2002) identifies extrapolation as a middle ground, describing extrapolations as “*modest speculations on the likely applicability of findings to other situations under similar, but not identical condition.*” and as being “*logical, thoughtful, case derived, and problem oriented rather than statistical and probabilistic.*” (p.584). An extension of this idea is ‘*theoretical generalisation*’ (Roberts, 2002) where the theoretical insights from a study can be tested in later research. Flick (2009) suggests that whether or not the intended level of generalisation stated for the study has been achieved by appropriate processes, should be used as a measure of quality.

Table 6.6: Criteria for good thematic analysis

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for accuracy
Coding	2	Each data item has been given equal attention in the coding process
	3	Themes have not been generated from a few vivid examples (an anecdotal approach) but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
Analysis	6	Themes are internally coherent, consistent and distinctive.
	7	Data have been analysed – interpreted, made sense of – rather than just paraphrased or described.
	8	Analysis and data match each other – the extracts illustrate the analytical claims.
	9	Analysis tells a convincing and well-organised story about the data and topic.
Overall	10	A good balance between analytical narrative and illustrative extracts is provided.
	11	Enough time has been allocated to complete all phases of the analysis adequately without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim and you do, and what you show you have done – i.e. described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as active in the research process; themes do not just ‘emerge’.

Source: Braun and Clarke (2006)

In this study purposive, heterogeneous sampling was used in order to achieve variability in the participants studied with the explicit aim of identify cross cutting themes and shared dimensions of experience. The study therefore, should be judged on whether appropriate steps were taken to allow internal generalisation. Its value in a professional context will be judged, however, on the extent to which it is possible to present findings that can validate and/or inform the future development of competency frameworks and thus, some degree of extrapolation from the study is also important. Such extrapolation, however, can only be tentative and would need testing in further research.

6.6 Ethical Considerations

In all research it is important to reflect upon and address ethical issues from the outset. This is particularly the case when dealing with people and using techniques such as in-depth interviews which, by their nature, seek to get participants to disclose detailed information about themselves and their situation. It is, therefore, important to establish an ethical framework within which research will be conducted. Easterby-Smith et. al. (2012) provide a set of principles for research ethics which formed the framework for this study (Table 6.7).

Table 6.7: Principles in Research Ethics

	Criteria
1	Ensuring that no harm comes to participants
2	Respecting the dignity of research participants
3	Ensuring fully informed consent of research participants
4	Protecting the privacy of research subjects
5	Ensuring the confidentiality of research data
6	Protecting the anonymity of individual organisations
7	Avoiding deception about the nature or aims of the research
8	Declaration of affiliations, funding sources and conflicts of interest
9	Honesty and transparency in communicating about the research
10	Avoidance of any misleading or false reporting of research findings

Source: Easterby-Smith et. al., 2012

Ethical approval was sought in advance of data collection via the standard University approval procedures. Key considerations included:

- Informed consent from both individual participants and their organisations

- Anonymity of both participants and their organisations
- Protection of commercial and participant confidentiality
- Ability for participants to review transcripts
- Data security

Thus, all participants were informed about the broad nature of the study in writing when invited to take part. This was followed by a more detailed summary of the study in writing once participation was agreed, with both individual and organisational consent forms provided in advance of interviews taking place. This summary included information about anonymity, confidentiality and data security. A further verbal summary of the project intentions was provided prior to the interview and an opportunity provided for participants to clarify any concerns about the study.

All participants were given the opportunity to stop recording the interview at any point should they feel uncomfortable about a line of questioning. None took up this opportunity. In addition, all participants were given the opportunity to review the transcript of their interview in order to amend comments that they felt misrepresented their views, or to identify elements of the interview where they felt personal or organisational confidentiality might be of concern. Three participants took this opportunity but requested no changes to be made. All references to organisational names were removed during the transcription process and any other references which participants or the researcher felt might jeopardise confidentiality have been removed in the presentation of data.

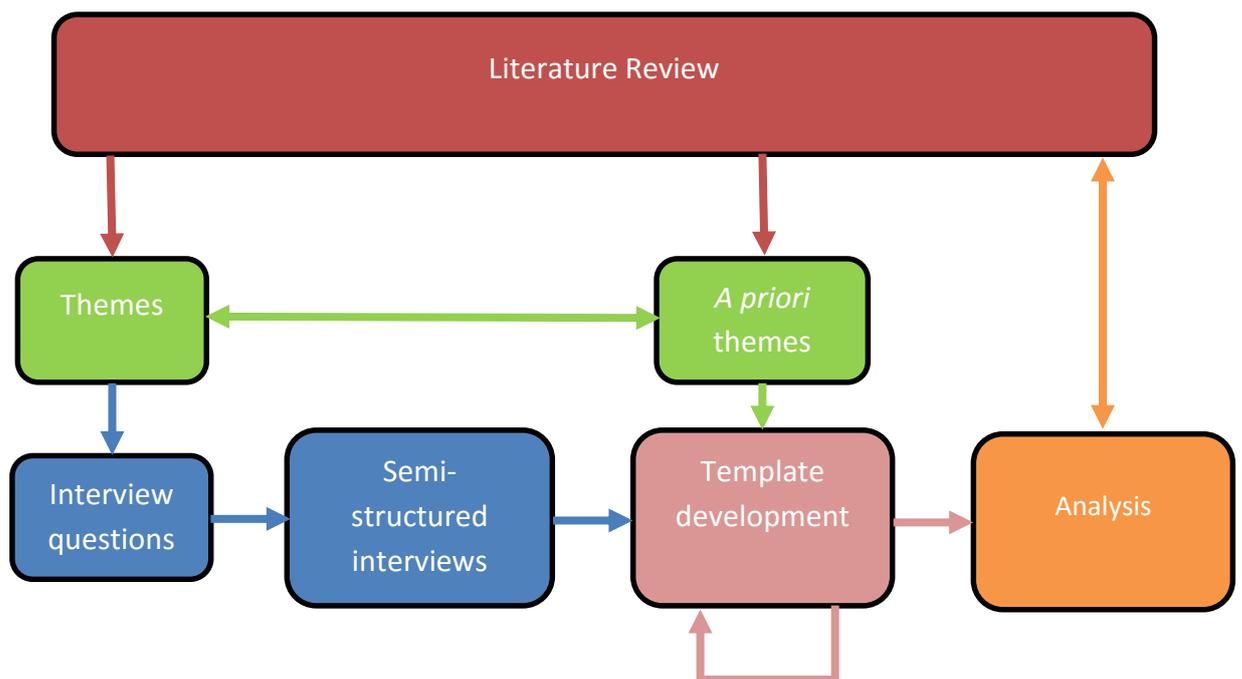
6.7 Summary

In the interests of clarity Table 6.8 summarises the key elements of the research design for this study while Figure 6.2 summarises the research stages adopted.

Table 6.8: Research Design Summary

Element		Summary
Philosophical positioning	Ontology	Relativist
	Epistemology	Critical Realism / Pragmatism
Approach		Inductive
Research framework		Phenomenology
Methodology		Qualitative
Methods	Data collection	In depth semi-structured interviews
	Sampling	Heterogeneous purposeful sampling
Study Group	Primary selection criterion	People based in the North East of England who have responsibility for environmental management in their organisation
	Secondary selection criterion	Sector, gender
	Size	10 participants
Analysis frame		Template analysis
Indented outcomes		Internal generalisation External extrapolation

Figure 6.2: Research Process and Stages



Chapter 7: Results and Discussion

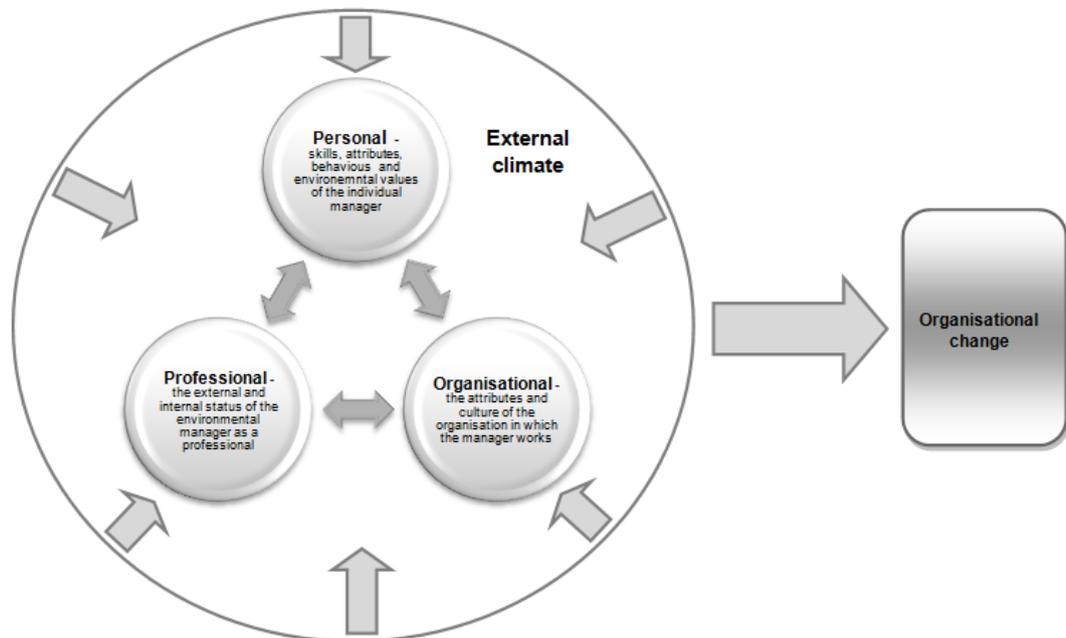
7.1 Introduction

The purpose of this study, as discussed in Chapter 5, is to evaluate the diverse range of factors attributed in the academic and professional literature to the success of environmental managers as agents for environmental change in their organisations. It seeks to explore these factors from the environmental managers' perspective by providing them with the opportunity to articulate what they perceive to be the factors that contribute to their success. In so doing, the research seeks to critically evaluate:

- the internal and external barriers and enablers for environmental change experienced by environmental managers;
- the mechanisms used and actions taken by environmental managers to implement change in their organisations;
- the personal skills, attributes, behaviours and environmental values they believe are needed to effect change;
- the value of professional status to environmental managers; and
- the interplay between these factors

This chapter presents the analysis of semi-structured interviews undertaken with a sample of environmental professionals based in the North East of England. Since purposive sampling was used in order to obtain a deliberately diverse range of participants, it is appropriate to begin with a summary of the participant group to provide context. Thematic analysis of the interview transcripts will follow, structured around the conceptual model presented in Chapter 5 and reproduced in Figure 7.1. Thus, the analysis will explore the organisational, personal and professional factors that influence how an environmental manager approaches the change process as well as the specific change initiatives and actions in which they engage. In Chapter 8 these findings will be drawn together to specifically address the research aims presented above.

Figure 7.1 Conceptual Model



7.2 The Participants

Flick (2011) suggests that thematic analysis should begin with a short characterisation of each case, thus Appendix 9 provides introductions to each of the participants in the study and their organisational context, with a summary provided in Table 7.1. In line with ethical considerations, the anonymity of each participant is maintained and only broad details of their organisational context are provided. Throughout the remainder of this chapter where quotations are used they will be attributed to individual participants by reference to the participant number shown in Table 7.1, so for example (1) refers to Participant 1, (2) to Participant 2 and so on.

Table 7.1: Participant context

Participant	Gender	Function	Sector	Ownership	Key organisational drivers
1	Female	Environmental manager	Environmental service	Private	Legal, public
2	Male	Environmental manager	Health Care	Public	Legal, sector policy, financial
3	Female	Safety, quality and environmental manager	Service	Private	Certification, reputation
4	Female	Environmental manager	Health Care	Public	Legal competition, public, reputation
5	Male	Sustainability manager	Manufacturing	Private	Corporate, customers, legal, financial
6	Male	Energy manager	Local authority	Public	Statutory responsibility, national policy, public
7	Male	Sustainability manager	Defence	Private	Legal, reputational
8	Female	Sustainability manager	Insurance	Private	Customers
9	Male	Environmental manager	Manufacturing	Private	Corporate, legal, financial
10	Male	Safety, health and environmental manager	Retail and manufacturing	Private	Legal, public, customers

7.3 Organisational and External Factors

The importance of organisational context in shaping the actions and behaviours of leaders is recognised. Redekop (2010), for example, comments “*leader behaviours, values and tasks will inevitably be shaped by the environment in which leadership is enacted*” (p.6). Thus, the organisation’s commitment to environmental change and the drivers and pressures it faces will impact upon how environmental managers undertake their role. An organisation’s response to the environmental agenda, as discussed in section 2.4, in turn results from a complex interplay of factors. Organisational culture, structure, personnel, size, sector, supply chain position and many more factors have been identified as influential in terms of the specific external barriers and drivers faced, resulting in a continuum of organisational responses to the environmental

agenda (Harris and Crane, 2002). This section begins by considering the levels of organisational commitment identified amongst the survey group before considering the organisational and external factors that environmental managers in this study consider to be key in influencing how they do their jobs.

7.3.1 Organisational Commitment to Environmental Change

Since all of the organisations in this study had taken the step of appointing an environmental manager, it can be concluded that there is at least some commitment to environmental engagement. However, there are clear differences in the depth of the commitment described by the environmental managers as the participant profiles in Appendix 9 begin to identify. Participant 2 explicitly identifies an organisational culture in which environmental issues are still to be embedded.

“I definitely wouldn’t say the sustainability and environmental improvements is, you know, engrained throughout the organisation. Not at all.” (2)

The other participants describe environmental issues as being part of the organisation’s ethos, vision or values. However, despite these claims, the depth to which environmental issues have been embedded is difficult to judge. Participants describe few elements of the themes of ecocentric organisational management summarised in Table 2.3; indeed, one participant described their organisations ethos as “lip-service”. The strength of emphasis on regulation as a driver (see section 7.3.2) might suggest a predominance of early stage commitment (in compliance and beyond compliance) (Kashmanian et. al., 2011). Organisation 5 appears to be the exception with Participant 5 describing a number of ecocentric actions that would suggest more advanced engagement, for example:

Conserving and Enhancing Environmental and Social Capital; Long term value creation:

“... we operate [a] model, which is very much about delivering a focus for joint environmental, economic and social value and that’s on the basis of delivering real benefit to society to live in real benefit from an environmental perspective but delivering real financial benefit to the business as well. So we see it as being, you know, a core business driver and we look very much to the real long-term impact that we’re having...” (5)

Enterprise Level Thinking; Openness and Transparency:

“... our governance structure at its top level, it’s not just involving some of our senior managers, it also involves a number of external interested parties, experts, stakeholders from a range of different backgrounds. And again, some of those, you know, have been intentionally selected to come from quite challenging backgrounds again to really help, challenge and shape our approach going forwards. (5)

Holistic Thinking; Enterprise Level Thinking:

“... that was a great example of where initially we got it wrong in terms with how we dealt with an NGO. But as a result of learning from that and actually structuring a relationship with that NGO or other NGOs to understand how we manage that going forwards, we’ve been able to, you know, reshape some of our own internal commitments and approaches to make a real difference in terms of our environmental impact but also restructure our approach in terms of how we work with some of those key stakeholders.” (5)

Organisational Learning; Empowerment:

“... we also run a number of, err, Family Days which are open to employees’ family and friends and effectively members of the local community that the bulk of our employees live in, within a couple of miles of the site. And they bring that kind of richness of context so we put a lot of effort into designing and structuring those so they are very engaging, you know, very much activity based, working with our key partners as well to structure up those key activities and bring some life to them, but really structuring them in a way that helps people understand, well, what is the benefit? (5)

Perhaps most revealing of the true extent to which environmental engagement is embedded within participant’s organisations is their views on the sustainability of their environmental actions. Participants on the whole were not confident that without input from themselves, their organisations’ actions would continue. Amongst the study group, the environmental manager role remains key in driving forward environmental initiatives.

“If it was honest, if I went under a bus tomorrow my organisation’s sustainability drive would dry up probably, if I’m being brutally honest. Definitely.” (2)

“If I wasn’t here, would they do it? I don’t know. Possibly not.” (3)

“... nobody has any ownership for it whatsoever, except for myself and my boss.” “It’s me that has to deliver this whole strategy.” (8)

Only participant 5 describes a more embedded ownership with evidence of other functions in the organisation beginning to share responsibility for environmental change.

“...the financial controllers are starting to take on much more interest now as they can see the real benefits and therefore a level of ownership and commitment. You know, we see it with the quality teams, we see it with the HR teams now as well, so it’s starting to evolve, but on a much more kind of shared and inclusive basis.” (5)

7.3.2 Internal and external barriers and enablers for environmental change

As noted in the introduction to this section, literature identifies a number of drivers and barriers to organisational environmental change, amongst which stakeholder pressure, economic benefits and regulation feature prominently. However, resource availability and reputational impact, sector, organisational size, governance structure, position in the supply chain and many other factors have been identified in the literature as influential as discussed in section 2.4.

Ormazabal and Sarriegi (2012) suggest that the importance of these various drivers may shift over time as an organisation's engagement with the environmental agenda develops, identifying regulatory pressure followed by economic benefits and finally green image and top management commitment as a likely sequence. Harris and Crane (2002) however, suggest that organisational diversity means that there is a need to guard against over simplification. Participants in this study noted a range of barriers and enablers but some consistent themes emerge.

The Regulatory and Policy Environment

The most prominent driver for environmental action identified by participants in this study was regulatory. The significance of regulation as a driver is similarly noted in previous studies (Studer et. al. 2006; Bey et. al. 2013; Ervin et. al. 2013; Williams and Schafer, 2013, Lozano, 2015). Without exception, participants identified this as a driver for their organisation's environmental actions but the extent to which this shaped all of the organisations actions differed. Participant 3, for example, identifies legal requirements as being minimal for her organisation but still suggests that future changes in legal requirements would be something that would drive change. In contrast, Participant 1, who works in a highly regulated sector, identifies legal requirements as the primary driver for action, thus aligning with the findings of Williams and Schafer (2013) who identified legal compliance as being a key motivating factor for more highly regulated sectors.

"I would say we are primarily legislatively driven, that is the key focus for a lot of what we do. Erm, obviously we have cost implications as well. But legislation is the key one because we are very heavily regulated and the impacts of that can be quite dramatic."
(1)

A compliance driven approach to environmental engagement is considered to be indicative of the earlier stages of organisational engagement with environmental issues (Lyon, 2004; Van Marrewijk and Were, 2003; Kashmanian et. al., 2011; Ormazabal and Sarriegi, 2012) and a trigger for initiating action (Bey et. al., 2013). According to Ormazabal and Sarriegi (2012)

additional factors come in to play as engagement develops and organisations move to 'beyond compliance' models (Kashmanian et. al., 2011). This pattern is evident amongst the study group.

"And we've started to reshape that quite significantly, particularly over the last three years. So, you know, we still understand and drive our kind of SHE compliance, but now looking very much at how we can accelerate the environmental sustainability improvement going forwards." (5)

"As a consequence of that, in the last five years, the majority of the environmental activity we've been doing has been about legal compliance. I would say, I would say legislation is probably 50 percent of it. Fifty percent of it is an internal willingness now." (10)

Related to legislation, the wider policy and political environment within which organisations operate was noted by some participants as influencing action. Participant 6, from a local authority, highlighted the challenges that policy and political structures can pose for long term environmental improvement, emphasising in particular the disparity between the long timeframes associated with environmental change (Taylor, 1992; Shrivastava, 1994, 1995; Hanson and Middleton, 2000; Rainey, 2006) and the short-term political cycles that drive day to day actions.

"I think in terms of the council overall we've always been working in short-term cycles. Because although we can have a long-term cap or plan, you know that the big decisions are planned around when the next general election is." "It is in some respects, it kind of makes it difficult for some of your, some of your, erm, longer-term environmental aspirations." (6)

They were, however, by no means the only organisation to identify policy and politics as important. Participants from across the sectors represented identified the challenges faced as a result of policy uncertainty and the lack of a strong external policy driver for the environmental agenda.

"There's not that support really from Government, you know, they are saying you can't landfill and do x,y,z and this is the tax for that but they are not coming out with a robust enough energy policy to support what the companies are trying to do. And that's a problem." (1)

"And I think that kind of clarity needs to be provided in a number of areas related to the E&ES area. And it's not being made because they're all into. "I've got a five-year term in office and I want to get the benefits of my five-year term in office. I'm not here to save the world." " (7)

Stakeholder Concern and Reputational Impact

Amongst the participants in this study, stakeholder pressure also featured strongly as a driver for action, with customer and public concern being the key stakeholder pressures identified. However, responses highlight organisational differences so these are by no means ubiquitous drivers. Findings therefore align with those of previous studies (Papagiannakis and Lionkas, 2012; Papagiannakis, 2014; Bey et. al. 2013; Ervin et. al. 2013). The service sector participants, for example, did not identify customer concern as an organisational driver. However, for the participant from the insurance sector, customer concern was the biggest driver for action as it was for the retail and manufacturing organisation. Addressing customer environmental concern is clearly linked to business benefits (as opposed to any altruistic motives), with participants making the connection to winning new business (8), being competitive in tendering exercises (4) and attracting investors (7).

“Our customers care about this. It helps us build relations with them, potentially win new business etc, so that’s probably my biggest driver...” (8)

Not unexpectedly, public concern is an important driver for the local authority participant (6). It is also identified as important for one of the health care sector participants (4) and the retail/manufacturing participant (10), who both link positive action to the reputational impacts of not being seen to be doing the right thing.

“I think our organisation is so heavily, we work very heavily with the public that actually we want to be seen to be doing the right thing.” (4)

For Participants 1 and 9, public pressure manifests itself as a more negative driver linked to concern and complaints that need to be managed or avoided.

“... now we are finding that we have a lot of pressure in the planning stage so as soon as anybody gets wind that there is going to be a new facility, the community tends to be up in arms about it ...” (1)

In line with previous studies (Studer et. al., 2006; Sienbanhüner and Arnold, 2007; Babiak and Trendafilora, 2011), reputational concerns more broadly emerge as a common theme amongst participants. For example, Participant 10 highlights his organisations desire to be *“keeping up with the front runners”*. A number of strategies are employed by participant organisations to demonstrate their credentials. Participants 1, 5 and 8 all highlight specific indices of environmental performance (e.g. FTSE for Good, United Nations Global Compact, Oxfam Behind the Brands) as being something to which their organisations subscribe to demonstrate

publically their environmental performance and drive internal change, while organisations 3 and 10 had made the decision to implement ISO14001 to demonstrate their credentials. Participants 1 and 6 highlight the importance of external awards for environmental achievement as a means of building stakeholder confidence in the organisation and motivating and rewarding staff.

"We use the Sunday Times Green Best Companies. We've achieved that accreditation and that helped us to drive some change through to the business and the way that we react and the level of participation that you get from your employees, but you have to keep, sort of, maintaining it and improving it all of the time erm, in order to keep that focus." (1)

"This is somebody coming in and holding our feet to the fire and saying, "Do you know what? Youse are really good at this!" So we can publically put it out there to say we're as good as everybody else." (10)

Economic Benefits and Barriers

Perceived impact on profitability (through cost savings and/or enhanced sales) is often cited as a driver for environmental action (Banejee, 2001; Dahlmann et. al., 2008; Murillo-Luna et. al., 2011; Babiak and Trendafilora, 2011; Lacy et. al., 2012; Bey et. al. 2013; Ervin et. al., 2013; Lozano, 2015). Economic benefit can be derived both from winning new business due to enhanced reputation as identified in the previous section, and by cutting operating costs. Participants in this study provided a number of examples where by they had been able to achieve financial savings by introducing environmental improvements, for example, in relation to carbon and energy, water, and waste disposal. As noted by Participant 2, being able to demonstrate cost savings acts as a clear motivator for action...

"... we're making changes with, now are making financial savings and it's just a no brainer because we're being more efficient, generating money, savings to be put elsewhere, so I'm flavour of the month because I'm asking for things that aren't costing money." (2)

...while Participant 6 stresses the need for there to be a solid financial case.

"I would never put an investment proposal in front of someone that was any more than, really, a five or six-year payback period. And I'd never put something in front of them right now that isn't going to give us financial payback." (6)

However, Participant 2 goes on to note that things will become more difficult once the change actions begin to require more significant investment before the savings are realised. Participant 1 similarly notes that implementing best practice (as opposed to legal requirements) can be challenging because of the cost implications and it is notable that of all the participants, it was

Participant 3 from the SME in the study who most strongly emphasised the barriers faced from lack of available funding, thus aligning with the findings of Studer et. al. (2006) and Williams and Schaefer (2013) who identified lack of resources as a major barrier for SMEs.

““There’s that amount of money or there’s that environmental issue, initiative, which... and they would look at money all the time.” “... we couldn’t get the funding for it because there’s no money available for that sort of initiative.” “...this is three times I’ve looked at it to sort of get some sort of push on it, but it’s the cost element that we actually struggle with because it’s a lot of money.” (3)

Cost can therefore act as both a driver and an enabler of change with a strong financial case being a prerequisite for acceptance of environmental change initiatives.

Senior Level Support and Organisational Structure

Senior level support for environmental action is both highlighted as important in previous studies (Flannery and May, 1994; González-Benito and González-Benito, 2006; Cherrier et. al. 2012) and emphasised by the majority of participants in this study; *“that really high-level sponsorship is worth its weight in gold.” (10)*. This support, or issue sponsorship, is important because it helps to ensure environmental issues are highlighted amongst senior level decision makers and helps to unblock barriers.

“the Director of Finance is good for kind of unblocking kind of, you know, kind of top-level issues that actually you need. He’s good at kind of going in and saying how it’s gonna be from the kind of the corporate angle if they do have issues” (4)

“And it’s absolutely important that around the political table, that you’ve got someone there who’s influential with their colleagues, who will get their colleagues on side. Because there’s so many conflicting priorities at that cabinet level that you really need somebody fighting your corner.” (6)

The amount of senior level support needed to effect action, however, may be influenced by where the organisation is in its environmental journey. Participant 2 suggests that in the early stages of change less support is needed, thus supporting Ormazabal and Sarriegi’s (2012) theory on the sequencing of drivers.

“at the minute, I’m managing to action change where I can, just me by myself, enough that I don’t need to go higher to then convince people to do other things. There will come a time when I’ll need to do that.” (2)

Literature stresses the importance of top managers’ pro-environmental values as being important rather than simply support per se (Carballo-Penela and Castromán-Diz (2014); Ervin et.al. (2013); Papagiannakis et. al. (2014); Cherrier et. al. (2012); González-Benito and

González-Benito (2006)). However, only two participants in this study comment explicitly on the environmental values of their senior leaders as being important.

“I am very lucky in that our Director of Finance who is my boss’s boss is a very big advocate of environmental management and is a greenie himself” (4)

“...the Chief Legal Officer and the Company Secretary ... he’s very, very interested and he will always help sort of champion it.” (8)

Similar to the findings of Harris and Crane (2002), Participants 1 and 6 identified the value of senior level support when trying to facilitate engagement more broadly in their organisation.

“... without the director and the cabinet member saying, “Yes, this is what we want to happen,” then we’d have been knocking on doors and been getting batted away, but actually once it comes from up there, then it really, really makes a difference.” (6)

Organisational structure can also be assumed to be important since this will influence ease of access to senior level decision makers and the more complicated the structure the more difficult or time consuming it may be to initiate change (Cordano and Frieze, 2000). Structural impacts identified in this study focus on the latter, emphasising the challenges of engaging with employees in the organisation rather than access to senior decision makers. These include the geographical dispersal of staff, global working, and shift patterns and thus were organisation specific. Barriers to engagement were in turn linked to the pace at which changes could be made.

“...there were, like, whole months where nothing happened because the people involved were on shift” (7)

7.4 Personal Factors

Literature presents a complex interplay between skills, attributes, values, and leadership behaviours with organisational context in the success of an environmental manager but consensus on precisely what these various personal factors are, and their relative importance, is hard to discern. This section will explore the values, skills, attributes and behaviours revealed by environmental managers in this study and relate them to the findings presented in the literature.

7.4.1 Environmental Values and Work Identity

Personal Environmental Values

Authentic, ethical and responsible leadership constructs emphasise the importance of a strong value based and moral component to leadership (Shamir and Eilam, 2005; Ladkin and Taylor, 2010; Gardener et. al., 2005) with responsible leadership including an explicit concern for the natural environment (Pless and Maak, 2011). Literature specifically on environmental leadership emphasises leaders' personal environmental value systems in both motivating their actions and shaping their vision for their organisation. The more ecocentric an individual's view point, the more likely they are to promote and enact an ecocentric vision within their organisation and be committed to meaningful environmental improvement. Although the majority of studies have demonstrated this link (Egri and Herman, 2000; Kurland and Zell, 2011) and have linked ecocentric views to successful change initiatives (Duarte, 2010; Cantor et. al, 2013), others have shown that this is not necessarily the case (Fineman 1997; Crane, 2000). Sector norms and career pathways may account for these differences.

All the environmental professionals in this study proclaimed to have some degree of moral environmental concern, although there were notable differences in the strength of this. Participant 2, 4 and 5 identified an interest in the environment from an early age with engagement with the natural environment particularly identified as having shaped their values. This same strong affinity with the natural environment was found by Kurland and Zell (2011) in their study of sustainability managers.

"I mean, I grew up in a rural environment and a lot of my childhood was spent outdoors engaging with not just nature but the environment as well. And I think as a result of that you start to value or understand that innate value of those assets and what they deliver." (5)

For Participants 2 and 4, this early engagement with the environment shaped their career choice.

"And it was really my childhood, that I wanted to do something that would be reasonably well paid, but actually I'd be out and about and I could do something positive and would protect kind of natural assets." (4)

Six of the participants in the study had chosen to pursue a career more or less exclusively in the environmental management field, seeing it very much as a vocation. All of this group declared themselves to be 'environmentalists'.

"I'm an eco-geek! Yeah, that is definitely what drives me and has done for over 20 years really..." "...my profession has always been in the environment sector and that drive has just got stronger every year." (8)

A strong environmental value set however, does not seem to be essential in the role with Participants 3 and 6 declaring an interest in environmental issues but not seeing themselves as having a strong personal stance. Notably Participant 7, who is an engineer by profession, comments ...

“Yeah, I wasn’t brought into that role or tapped on the shoulder initially because I was green and they felt I was the right person for that, they wanted somebody to take a structured look at it, be sensible and pragmatic about it like engineers are ...” “I don’t kiss pandas or hug trees...” (7)

However, he goes on to comment that as a result of doing the job he has become *“Massively more E&ES aware...” (7)*.

Personal Enacted Environmental Values

Cantor et. al. (2013) link levels of environmental behaviour to an individual’s level of environmental commitment, hence we might expect ecocentric values and personal enacted values to align. The environmental professionals declaring strong ecocentric values all provided examples of how they enact these values in their personal lives from recycling, choice of diet, purchasing decisions, energy conservation and designing off-grid properties, to membership of wildlife groups and voluntary conservation work.

Those with a weaker declared environmental value system however, showed less engagement in their personal lives.

“But I do, I do what I can and when I can...” “I try to. But then again it’s all down to cost at the end of the day.” (3)

“Probably not – erm, I do, but probably not as much as I should.” (6)

A number of participants emphasised the importance of ‘practising what you preach’, linking this to authenticity, respect and an ability to enthuse others about environmental issues.

“...you’ve got to lead by example whatever you’re doing.” “...if you’re not practising what you’re preaching, you’ll not get any respect and you’ll not have anybody holding you up as the example that you should be.” (2)

“Well, I think it gives authenticity to what we’re talking about.” (8)

“...if you don’t consider it yourself, how are you going to come into work and try to change people’s perception of the environment and improving the environment?” (3)

Value Congruence and Work Identity

Levels of alignment between environmental managers' values and those of the organisation in which they work have been linked in a number of studies with levels of job satisfaction and degree of isolation (Fineman, 1996; Harris and Crane, 2002; Spanjol et. al. 2015). Although Participants 1 and 9 in this study admitted to sometimes being frustrated by the lack of alignment between business and personal priorities, most participants were accepting of some misalignment.

"It's highly frustrating, it really is because at the end of the day, erm, the business priority will override whatever your concern is." (1)

"I think there's some people that you will never change their attitude and that used to really get me down. That there's always a really small portion that will never buy into something – I think it's, you can't take that personally." (4)

A number of participants commented on the stereo typing that appears to be attached to the job, but none seemed to see this as a personal concern or barrier, indeed in some instances they used it as a way into conversations and as a positive way of demonstrating authenticity as discussed above.

"... "you're not what I expected! I thought you were going to be like a Swampy person," and actually it's a real, people have got this real kind of, like, a real generalised perception that you're going to chain yourself to a tree or something". (4)

"...but I'm sure there is an element of, like there is in all aspects of life, like banter and wind-up that he's a tree-hugger, but I actively engage with that myself. So I tell people when I, you know, am trying to get them to do things, and this is the reason, I'm quite pragmatic with it ..." (2)

The idea of pragmatism comes through strongly from the managers interviewed. Much as Wright et. al. (2012) found in their study, participants were comfortable with the idea they would demonstrate a different identity at work than they perhaps would at home. The need to focus on the business case rather than adopting an 'evangelical' approach is often emphasised by those interviewed, thus aligning with Wright et. al's. (2012) 'Rational Manager'. This does not mean that the pragmatic approach is the only one to adopt. However, it would seem that acceptance of this approach is recognised as important amongst the more senior environmental managers that form the focus of this study, even when they hold strong ecocentric personal and enacted values.

"...it's difficult because you have to walk, like, a very kind of tight line between being a greenie and being an educated greenie, I always try and err on the educated greenie rather than kind of environmental protester, I tend to kind of at work go for the professional angle." (4)

“...if you are not mindful of others and you’re just trying to push on what you believe in, then you will only create barriers and you will not effect change.” (2)

“...if an individual in that environmental role takes a very – well, what’s the word I’m looking for – err, almost evangelic stand but without necessarily the kind of business rationale behind it, it can create a very negative environment and then it can be subsequently quite difficult to re-challenge that, reopen that and re-engage those parties that perhaps have been put off.” (5)

The concerned as opposed to ecocentric managers in the study, and those with more moderate enacted values, made no reference to the need for pragmatism. Perhaps they do not feel the need for pragmatism because they do not have as strong a sense of misalignment (what Wright et. al. (2012) refer to as “distance between their self-understanding and situationally dominant discourse” (p,1461)) or because they do not feel the need to drive environmental change as strongly and are accepting of their organisation’s current actions.

“...ultimately I’m implementing policies that are, that are set by, at cabinet level and across the council, so it’s [personal environmental stance] not a huge driver for me.” (6)

Participant 7, the convert, however demonstrated the strongest views on pragmatism and alignment with environmental action only perused when consistent with business priorities:

“... if your personal philosophy is strong enough on a green agenda that you’re banging your head against a brick wall then the options are you either change your personal philosophy or you get out.” “I have got strong views on things related to that arena, but they’re based on pragmatism and the practicalities of implementing, not as a green tree-hugger or whatever.” (7)

Table 7.2 summarises the value systems and work approach of participants in this study.

Table 7.2: Environmental values of participants

Participant	Personal declared environmental values	Personal enacted environmental values	Vocation	Work actions
1	ecocentric	Strong	✓	Pragmatic
2	ecocentric	Strong	✓	Pragmatic
3	concerned	Moderate	x	Accommodating
4	ecocentric	Strong	✓	Pragmatic
5	ecocentric	Strong	x	Pragmatic
6	concerned	Moderate	x	Accommodating
7	convert	Minimal	x	Businesscentric
8	ecocentric	Moderate	✓	Accommodating
9	ecocentric	Strong	✓	Pragmatic
10	ecocentric	Moderate	x	Accommodating

Motivations and Frustrations

Despite the pragmatism shown by the environmental managers in this study, the job is not without its frustrations. These frustrations are expressed in different ways by different managers, suggesting this is a personal/organisational rather than role specific issue. Participants 1 and 3 for example, expresses frustration at the slow pace of change while Participants 7 and 9 identify being challenged as the expert as a source of frustration. Participant 1 also expresses a sense of frustration at what she feels is the narrowness of the organisation's recognition of her role and lack of wider integration into business initiatives.

"...sometimes it can be very frustrating and it can demoralise you because you're, like, 'Well, you brought me in because I'm a technical expert – do you not believe me?'"
(9)

What motivates our managers however, is more consistent. A desire to make a difference is the key motivator.

"I'd like to think that actually I'm making a difference." (4)

"In actual fact it was one of the main reasons I left my previous job because I didn't feel as a consultant I was driving enough change and making enough of a difference."
(8)

7.4.2 Skills, Attributes and Behaviours

Literature suggests that the successful environmental manager will need a mix of 'soft' people skills and technical or methodological skills in order effectively implement change in their organisation (Friedman, 1992; Egri and Herman, 2000; Arnault et. al., 2012; Hesselbarth and Schaltegger, 2014). The balance between these broad groups of skills, and the precise skills needed within these broad categories, lacks clarity in the literature (see sections 3.5 and 4.4) and may be dependent upon the sector in which the environmental manager is operating.

Managers in this study also identified both technical and softer people skills when asked to identify the skills of importance in their role, but varied in their views about the relative importance.

"If you're going to lead and have the right policy results across the levels within a business, but across businesses within a global business, yeah, the people skills are massive. Massive." (7)

"I know Environmental Managers tend to come in two batches: we're either quite technical or quite airy-fairy, whereas I think you have to be quite technical otherwise you're not taken quite so seriously, you can come up with numbers and things, I think

that's much, people like to work in numbers, don't they, especially when you're trying to engage finance and things.” (4)

“I tell you, probably equal, but it depends on what you're trying to do.” (9)

Despite these mixed views, analysis reveals a long list of soft skills identified by participants but few in the way of specific technical skills. Those mentioned tend to be generic technical skills, all-be-it applied in an environmental context, rather than specifically environmental – auditing, tendering, time management, project management, data analysis. Discussion on technical skills also tended to drift into and become blurred with discussion about technical environmental knowledge.

“...I am going to go with my gut feeling and say that technical skills are more important because you can do the people skills badly, you couldn't do the tech-, you couldn't do the knowledge badly and have a successful project.” (8)

The lack of reference to specific technical skills may be a reflection of the position of these environmental managers within their organisations. In their leadership roles there is a sense that they are more focused on policy and procedure than technical implementation and hence, the importance of utilising technical skills is reduced. Having the technical knowledge, however, remains important in order to understand how best to utilise the resources available to the organisation – knowing how rather than doing.

“I think there's a level of technical skill you need further down the organisation.” (7)

“...we get people from different areas coming in ... They're the technical input. We kind of set the strategy and the policy” (6)

Considering then the softer skills identified by participants, communication skills dominated the discussion with all participants identifying the need for strong skills in this area. The change tools used by participants (see 7.6.2) often involve communication in various forms, highlighting the need for strong communication skills in the more technical sense, for example, the ability to deliver a presentation at a training session or produce a campaign poster. However, few participants mentioned these, with conversation instead tending to focus on the softer communication skills. The strongest of these was what Anderson and Bateman (2000) refer to as 'issue framing', with unanimity on the importance of being able to frame the environmental message in a variety of ways in order to ensure that the message is understood by, and 'sold' to, the various stakeholders; *“So essentially you have to be a bit of a salesman”* (10). Anderson and Bateman (2000) emphasise the importance of issue framing as a financial

opportunity, identifying this as the most successful strategy. Participants in this study certainly identified the need to be able to make the financial case.

“No, they would always want the cost. ‘What is it gonna cost us? And what are we going to save at the end of it?’ That’s the finance, the finance line is always ‘How much is it gonna cost? How much are we going to save?’” (3)

However, participants described a much more sophisticated approach to issue framing in which they use multiple arguments in order to build a robust business case for environmental change.

“...in any kind of business case for change, I think I would always try and highlight every benefit there was, because the chance of it then being funded or taken forward is better.” (4)

“I have to put together a business case for everything and that has to go to the board for everything. And I put a lot of effort into that, and they probably look at it for a few minutes, but you’ve got to really build a strong case...” (8)

The importance of this multi-message approach is explained in a number of ways. Participant 9 for example, explains the need for multiple arguments in order to address the various interests represented amongst senior decision makers when attempting to gain support...

“There is, and I guess it’s making, again, framing it in the right way because, I suppose, ultimately you’ve only got so much time and then it’s difficult because there’s probably ten people on the senior management team covering the different aspects of the site. Each will have their own agenda, what they want to do, what they want to achieve, what they can spend, what they can save, what they’re interested in and they, I mean, they differ and some are better than others, but they differ in different ways. So I suppose it’s understanding what’s the best way to get people interested or what’s the best way to apply pressure...” (9)

...while other participants emphasise the need to use different messages to engage effectively with staff at different levels and in different roles within their organisation, arguing that approaches which work at one level in the organisation may not work at other levels.

“...with the general managers we tend to use more of the legislative approach, the impact on reputation and financial implications for the business because ultimately they are responsible for the bottom line and that’s generally the way they see things.” (1)

Participant 4 suggested that financial framing “*doesn’t work at all*” with operational staff while, in contrast, Participant 9 identifies this as an appropriate approach with shop floor workers in his organisation. Participant 4 explains the lack of effectiveness of financial framing with operational staff as being the result of the wider organisational context at that point in time in which there is some staff animosity as a result of which they believe that “*all management are*

just trying to save money and kind of cut corners". For Participant 9, however, the organisation's staff bonus system provides a different context *"If you put that in there and we can save £10,000 a year if everyone did that, that's probably more hard hitting ... because what they see at the end of the day is that might affect their bonus"*. Organisational context therefore, is important. Unlike Crane's (2000) study however, these differences in emphasis appear to operate at the individual organisational level rather than at the sector level, although study size makes generalisation at sector scale difficult. Like Rothenberg (2007), Participant 2 notes that the arguments used may need to change over time as organisational drivers and context changes, and notes that it is about *"understanding your audience and making the argument for the work that you are trying to get them to do and improve the environment in their language [and] using examples they can relate to..."* (2). This highly context specific understanding needed for successful change communication aligns with Van der Haijden et. al.'s (2012) model of sensemaking for emergent organisational change when embedding sustainability (see section 4.4.4) and with Gattiker and Carter (2010) and Kurland and Zell's findings (2011).

Another justification of the multi-message approach that emerges from the data is that the environmental message alone is often insufficient, either because it is simply not of interest to staff, is not understood, or does not align with their priorities. Re-framing the environmental message to 'hide' it within another agenda helps to overcome these barriers:

"... we've perhaps had a tendency to put things on the table as environmental opportunities and they're seen as either being quite dry or people are not really understanding or engaging in them..." "We've found that pushing the environmental message in as a starter has very limited impact, so what we've done is, with everything we do, we look very much at the kind of "What's in it for me?" aspect in terms of how do we trigger that impact and what is the core, and it's different for different groups of people within the organisation, leverage the activities around that initially and then start to build in the environmental message behind that, and that's worked very, very well for us." (5)

"... but then when I started talking in her language about increased cold winter weather deaths or the impact on our services when it gets a lot colder or we have snow and stopping people getting to them, heatwaves, so suddenly the buildings are hotter and people are passing out ... "Oh, right, right." So she now comes to the Sustainability Working Group for the adaptation and mitigation element of it, whereas a year ago, nothing." (2)

Related to the theme of re-framing, participants also describe examples of 'translation', the re-communication of strategic environmental targets into alternative targets at more operational levels within the organisation. Again, participants stress the need for targets and actions to be meaningful to the staff member, and appropriate to their role, for successful action – what

Participant 5 describes as *'goal-alignment'*. Thus, findings here align with those of Gattiker and Carter (2010).

"Because if you cascade, for example, you know, energy use per ton down to an individual shop floor, so what? Whereas if they know actually if I do this when I'm cleaning the kit or if I do this when I'm running the kit, that makes a difference – if we track that, they can see the impact they're having in terms of that energy or water reduction as an example." (5)

"... as we, I suppose, step down the hierarchy, the message to the guy at the end, so the guy on the end of the tray wash or the Saturday girl in the shop who works four hours is, 'We have come up with this simple plan to manage something in our business. It fits with our SR objectives, so all you need to do is follow the rules, and the rules are do this and do that.'" (10)

Another theme inter-related with framing is that of *'relating to others'*. Successful communication is not just about being able to present the environmental agenda in an appropriate way but also about how that message is conveyed. Participants talk about the need to build rapport, influence and engage people in order to get the message across – you need to be *"...able to get on with everyone"* (4), *"You just have to be a nice person really."* (2) but this is not without its challenges

"I've got to go in in a suit to a Board-level meeting and tell them what we're up to and also tell people how to segregate their waste at the most basic of levels. And I think it's quite, it's difficult at times to be able to be those two people because people in a station see you as management and that sometimes creates a barrier so it's about knocking that barrier down. So, yeah, that is actually quite difficult at times" (4)

Participant 7 stands out from the others with a more hard-line stance based on negotiation rather than rapport building and gentle coercion, emphasising the related skills of compromise, diplomacy, and political acumen. Again, context may be key here since Participant 7, more than any of the other participants, was operating in a global setting with multiple different international contexts to accommodate.

"you have to be, erm, aware enough and intelligent enough to have the conversation and be able to do the trade-offs with them and win that argument. And, yeah, that's a bit of negotiation, but there's a bit of hard-nosed, "Look, we've reached the end of the line here, we need to put something on paper." And you have to have that conversation." (7)

"You have to, you have to be aware of structure, politics, erm, but you have to have the right communication skills, you have to be – yeah – you have to be a politician." (7)

Alongside the ability to relate to others, team working is identified in the literature as an important skill for the successful environmental manager (Frenández et. al. 2006; Junquera and Ordiz 2002). Although some of the environmental managers in this study identified the use of champions as important in their change initiatives (see section 7.6.2), there was little discussion about formal team working or team working skills, although the need to build relationships and trust with internal teams was emphasised by a number of the participants.

“how well you work with your partners, either strategic partners ... or your internal departments, how closely you work with them and build up that trust.” (6)

Moving then to the personal attributes which environmental managers consider to be important, four inter-related themes stand out from the interviews. Half of the managers interviewed talked about the need for passion. The importance of having a passion for the environment is explained in two contrasting ways. The first relates to the issue of selling the environmental agenda to others – the idea of delivering a compelling and authentic message (Kurland and Zell, 2011). In this respect passion is linked to confidence which is also identified as key in being able to make a compelling argument.

“...it’s quite clear when I deliver a presentation that it comes from the heart, if you like, that I’m very passionate about it, so I think that, that helps” (8)

“So I think to be able, its coming down to this confidence in communication to the guys, being able to use examples from the past to get your message across and for them to have that level of confidence that you know what you are talking about is quite key.” (1)

However, the need for passion is also explained in the context of resilience. Having a strong personal passion provides the resilience and conviction needed to deal with adversity.

“The individual does need a real level of enthusiasm and passion I think, because of the challenges you face, if you don’t have that, if you can’t kind of get back up when you are knocked down then you’ll struggle to make a real difference.” (5)

In turn resilience and tenacity are linked by participants, so not only do environmental managers need the resilience to be able to cope with the set-backs and criticism that they may face, they also need the self-belief and persistence to continue trying to make a difference.

“you’ll get knocked back, you know, 99 percent of the time.... you’ve got to be up for a challenge.” (3)

“a kind of steely determination that we all believe that what we’re trying to do is doing it for the right reasons.” (6)

Participants in the study make very little reference to behaviours that they feel to be important with the exception of authenticity. The importance of being seen to be doing the right thing and leading by example is emphasised, with authenticity being linked to personal ecocentric beliefs (see section 7.4.1) and passion for change.

7.4.3 Knowledge and Experience

Aragón-Correa and Rubio-López (2007) suggest that *“firms lacking environmentally qualified personnel will have difficulty in reaching high environmental performance standards.”* (p.372) prompting others to conclude that demand from business for graduates with the necessary skills and knowledge to support engagement is likely to grow (Hasselbarth and Schaltegger, 2014; Lozano et. al., 2015). Despite this, academic literature tells us very little about the specific knowledge or qualification needs of environmental professionals, while practitioner surveys reveal a multitude of backgrounds but emphasise the growing importance of formal, relevant qualifications. Friedman (1992) suggests that environmental managers must have understanding of environmental issues, ethics and the legal system while Taylor et. al. (2012) identify the need for excellent knowledge of the organisation and the industry in addition to environmental issue. Hanson and Middleton (2000) stress the need for continual learning.

The environmental managers in this study included both those following a vocation (see section 7.4.1) who had actively pursued environmental qualifications with an environmental career path in mind, and career changers who had begun their careers as engineers (5) (7), quality manager (3) or chemist (10) before becoming environmental managers. Level of qualification varies amongst participants, from undergraduate qualifications to PhD. Not surprisingly, the career changers were strong advocates for the skills and knowledge they had gained from their previous profession.

“The one thing that I’ve found of real benefit ... is being a chartered engineer, being able to bring that engineering and technical aspect has provided real value, so I can have, you know, very, I can engage with perhaps individuals who come from a pure environmental background, but also I can engage directly with very, kind of, technical engineering resources as well when I’m looking at, you know, how we make a particular project work”(5)

With the exception of an ability to understand legal drivers and compliance issues, which was emphasised almost unanimously by the managers in the study, no single area of knowledge emerges as key to undertaking the environmental manager role. The importance of context is highlighted by Participant 9 who describes himself as having a very generalist environmental background ...

“... there’s a lot of chemicals on site and it would be useful to have probably more of a chemical background. There are times more of an engineering background would be useful. So it’s very difficult on a site this big with what’s going on, what is the right background to have. So, there’s nothing wrong with my background, I don’t think, but there’s areas where I can’t really, from a technical perspective, I can’t assist as much as I’d like to assist. You’ve got to find an external resource.” (9)

...while Participant 7, a career changer, stresses the need for formal environmental qualifications, although justifies this as a badge of credibility rather than from a knowledge or skills perspective. Others stress the importance of knowledge in helping to formulate a convincing arguments and counter negative responses from ‘non-believers’.

“So I needed to, to do that role and to have credibility, yeah, to have had something which said I needed to cover E in some way, so I did the postgrad diploma ... in Safety, Health & Environmental Management.” (7)

“I think if you need to encourage someone who is a bit reticent to doing it or resistant to change or doesn’t want to or is a bit cynical, then you need to have knowledge to back up your case...” (2)

As well as subject knowledge, participants emphasised the need for organisational knowledge; understanding of the organisational structure, key players, operational procedures and internal politics. Having this knowledge was again linked to being able to frame arguments appropriately and to knowing who you need to communicate with in order to make progress. Organisational context is, in part, informed by external drivers so understanding the wider political and policy context within which the organisation operates was also identified as important, although perhaps less frequently than might be expected. Findings here, therefore, align with those of Taylor et. al. (2012).

All of the environmental managers in this study had held at least one previous role, some in more junior environmental roles, others in an alternative career. All therefore, had past experience to draw upon in their current role and identified this as a positive. Participants emphasised the breadth and context that having past experience offered, which in turn, imparts credibility as the expert.

One of the characteristics of the environmental agenda is its constant evolution as new issues emerge from fresh scientific discoveries and change is created by the constant interaction of humans and society with the environment. As an environmental professional there is therefore, a constant need to refresh environmental knowledge (Hanson and Middleton, 2000; Hesselbarth and Schaltegger, 2014). The need for sound organisational knowledge highlighted

above also means that learning must be an ongoing process.

“The sustainability agenda is just massive and changes constantly. And then the topics, or the risk topics that appear, change constantly as well ...” (10)

“And you can never be totally up to date, no matter what you do, you’ll always be delivering a presentation and somebody will say, “I saw on TV last night that such-and-such has just been announced,” and you, you’ve missed that one, but you’re gonna try your best.” (8)

Participants described a wide range of approaches to maintain knowledge, including web searches and e-bulletins, trade and professional publications, attending CPD and training events, conferences and networking (see section 7.5.2 for further discussion of the latter). Participants also highlight the value of ‘learning from doing’, particularly highlighting the softer skills as something that have to be development rather than being taught.

“I have learnt over time the softer skills needed.” (6)

7.5 Professional Factors

Although authors such as MacLean (2010) raise doubts about the status and coherence of the environmental management profession, recent years have seen an increased drive in the UK for professionalisation with the development of competency frameworks by professional bodies and the introduction of chartered status (see section 3.10). However, there remains little empirical evidence of the value that employers, or indeed environmental professionals themselves, place upon the professionalisation of the environmental manager role. Thus, this research sought to explore what, if any, value managers placed upon having a clear professional status and how, if at all, this assisted them in their work.

7.5.1 Status and Recognition

Out of the managers in this study, Participant 6 was the only manager who was not a member of a professional body and saw no value in membership. It is clear from the responses of the remaining environmental managers that professional body membership currently has greater importance to them as individuals than it does to their employers, with the comments of Participant 9, when talking about the importance of professional membership, being common *“It does to me but it means nothing really in the organisation”* (9). Participants 2 and 4 explain the importance of achieving a high level of professional status for their own personal reward and as an indication of their career development. A number of participants, however, did feel

that professional membership offered credibility and validity to what they were doing should they ever be challenged.

“... they can see that I’ve got that badge as well. So that means a bit to me, but how much it does to others, I’m not sure. If somebody wanted to pick faults with my knowledge or my abilities, then they might go and search that out. ‘Oh, he is chartered. Oh, well.’” (2)

However, whether there are any material rewards to be gained from achieving higher levels of professional membership is unclear, with participants having mixed views on how much concern employers have for professional status.

“I don’t know if I’m honest. I mean, I see jobs advertised, I haven’t seen it as an essential, it’s a desirable. I think, at the end of the day, if you’re the right person for the job, they would offer you the job whether you had it [chartered status] or not.” “I haven’t seen a change in status, there’s no magic pay rise. There’s no, “Oh fantastic! We’ve got a chartered environmentalist on site.” It’s, like, “So what?” unfortunately.” (9)

Participant 1 describes a more positive organisational response that links career progression and professional status, all-be-it she was actively involved in initiating the requirements, an approach also taken by Participant 2.

“And I have helped to instigate with our HR Department the erm, requirement for a professional qualification within my team, erm, and membership and they need to get up to chartered status within the team because there wasn’t anything formally written down.” (1)

Sector and role differences in the importance placed on membership and professional status are highlighted by Participants 8 and 9 who have moved from consultancy to in-house environmental manager roles during their careers.

“In consultancy it would be, you know, qualifications and professional memberships and so on. In an in-house role I got told to take letters off after my name on my e-mail signature...” “...nobody is interested really”. (8)

Despite these mixed organisational perspectives on professional membership, participants did feel that they were viewed as professionals within their organisations but, as Participant 4 identifies, respect needs to be earned from actions taken rather than simply being conferred by having a professional body membership.

“... I am treated as a professional and, but I think I’m treated on my own merit, rather than the profession. I’m treated on the, what difference I’ve made to the organisation and my input to the organisation rather than my profession...” (4)

7.5.2 Networking

The value of networking to environmental manager success has been highlighted by the work of Crane (2000), Quinn and Dalton (2009) and Kurland and Zell (2011) (see section 3.5.1). Participants in this study similarly identified networking as being important with professional networks, formal and informal sector networks and personal networks all identified. Sharing of knowledge and best practice were amongst the personal benefits identified from networking, with participants linking it to keeping up to date with knowledge and skills and continuing professional development. Participants also identified benefits of professional networks to their organisations through the identification of expertise that could be brought in to support actions.

“... I can recommend him because I know him professionally and I know that he’ll do a really good job.” (8)

Crane (2000) emphasised the importance of networking as a form of moral support for environmental managers, a view shared by Participant 4 in this study.

“And I think because a lot of us are lone people in organisations, that, I think it is good to kind of, it bolsters your spirits a bit when actually your latest project isn’t going particularly well and you’re not getting the buy-in and I think you have to kind of maintain context by kind of keeping up to date with other Environmental Managers.” (4)

7.5.3 The Future of the Profession

On the whole participants are optimistic about the future status of the environmental management profession. It is a young profession that still needs to raise awareness about appropriate levels of professional membership amongst employers and to shake off the “*have a go hero*” (5) image that remains in some quarters. The credibility and self-affirmation of personal development associated with professional membership is important to environmental managers but, with chartered status having only been introduced in 2004, there is still some way to go before this is recognised as important in the recruitment of senior environmental managers and in ensuring a consistent standard of knowledge and skills across the profession. In part, environmental managers themselves need to continue to work to promote this need within their organisations through influencing, for example, recruitment strategies, but above all, by acting in a professional manner that promotes awareness.

“... I know when I’ve spoken to a number of individuals who at first glance would purport to be real experts in their field, when you’ve scratched beneath the surface, they are quite light. So I think to have a level of professional accreditation is really

important in terms of being able to validate what we're doing and the approach that we're taking." (5)

"There's still a bit of, there's still a bit of understanding needed out there within recruitment around what, what level you would expect to be accredited to, to do your certain role. So I think we're a little bit away from having full member as accepted as, "Right, you're a real environmental manager." (10)

"I don't think the business would necessarily see it as important because we haven't made a case for it being important. But I think on the same basis we have with other chartered roles, you know, if there was a clarity of, well, this is what a chartered environmentalist thinks it means and what it would deliver for the business, the credibility that it would build, I think, very quickly it would be seen then as being a core, a core positioner." (5)

In reflecting on the future evolution of their role, there is optimism that things will change but different views on the pace at which this might happen.

"... I think we'll find that at some point in the near future, we're going to see almost an extreme tipping point where suddenly there'll be a recognition that we have to do something very significant and very swift" (5)

"Those coming out of college and university now, the people that started in education ten, fifteen years ago, they get it. They know why we're doing all this. But the grey beard sitting there, the majority of them will still struggle with it. So, things will get better, but they'll get better slowly." (7)

"I am still optimistic and positive that we will still make positive changes, you know, I think things are changing." (9)

7.6 Change Mechanisms and Actions

The central premise of this thesis is that environmental managers have a key role to play in introducing and sustaining environmental change within their organisations by acting as change agents. The final component, therefore, of the conceptual model that forms the basis of this study is the change initiatives pursued, the changes achieved and the views of environmental managers about their role in the change process. This section will consider these factors.

7.6.1 The Nature of Change

Halme (2002) and Lozano et. al. (2015) note that the most common assumption is that environmental change in organisations is driven by top management, a view consistent with the identification of top management commitment as a key driver for action (Flannery and May, 1994). Little attention has been paid to bottom up approaches initiated by employee interest, although Anderson and Bateman's (2000) work on environmental champions provides some insight. The importance of senior management support for change was discussed in section 7.3.2 but participants in this study also provided examples of where they had established support networks to sustain change. These approaches will be explored in section 7.6.2.

Literature identifies the importance of both incremental, or evolutionary, change (Georg and Füsell, 2000; Crews, 2010; Papagiannakis et. al., 2014) and transformational, or revolutionary, change (Korten, 1999; Heart and Milstein, 1999). Past studies have noted that environmental change initiatives often focus on tangible changes, such as introducing procedures, physical systems and technologies, rather than intangible changes in organisational values and culture (Lozano 2012; Mårtensson and Westerberg 2016). A number of authors have argued that to achieve lasting transformational change, it is essential to focus on the latter since culture pervades all levels and activities of an organisation (Galpin et. al., 2015; Galpin and Whittington, 2012; Doppelt, 2010; Harris and Crane, 2002).

The participants in this study predominantly talked about tangible changes they had made – the introduction of recycling schemes, smartmeters and solar panels, the use of standard operating procedures and the collection and analysis of data for environmental reports. They described initiatives designed to bring about incremental changes in the day to day operations of their organisations rather than an organisation wide change in culture or major shifts in direction. In this respect the environmental managers in this study seem to be following an approach that aligns with that noted in other studies (Dahlmann et. al., 2008; Lozano, 2012). However, some examples of revolutionary change are provided. Participant 1 notes the influence of a sector wide shift in thinking on her organisation's business model ...

“... but that's the way the industry is changing and the requirement for energy really and not disposing of the waste. We have to significantly shift the way the business operates and that is not just us, its industry wide.” (1)

...while participant 10 explains how his organisation has been able to challenge normal retail practice and put environmental considerations first, and participant 6 explains how a shift from financial to environmental based accounting has been made.

“All retailers had until recently, relatively recently, had an open door policy because the idea is that if you make it very hard for somebody to come in... there’s a chance your customer is going to go somewhere else. So there’s a feeling across retailers that, “We’ll keep the door open. It’s nice and easy. People know you’re open. You can see your goods, you can smell your goods.”” “We’ve been able to challenge that ... Even something as small as the general energy stuff of keep the door closed and you’re not wasting energy.... With something as small as that, that’s a real, that’s a real significant shift of business thinking.” (10)

“So what we’ve done as an organisation was say, “Right, we’re introducing this big change – and it really is a big change in thinking – that you no longer have a financial budget for that building, you have a kilowatt hour or a carbon budget because that’s what you can control.”” (6)

The importance of changing *“hearts and minds”* (4) is frequently noted by the participants but the process to achieve this seems to be predominantly via tangible changes rather than a focused cultural change strategy. The slow nature of cultural change is noted.

“... you need to convince everyone that it’s the right thing to do and they all need to change their behaviours and just do a little bit differently.” (2)

“We are seeing people have slightly better awareness of the environment, you know, which is encouraging, but it just takes a long time” (9)

Participant 5 was the exception, talking in contrast to the others about the process his organisation is using to change culture and the importance placed on individual learning, empowerment and partnership. He talks about, for example, the organisation’s volunteering activities, awareness events for employees’ families and friends and sharing learning with other organisations and community groups. This difference is consistent with the more advanced stage of the environmental journey that this participant’s organisation appears to have reached (see section 7.3.1), but whether this drive for cultural change has driven their more advanced engagement or is the result of having reached a higher level of engagement, cannot be judged but is worthy of further exploration. The emergent change model proposed by Papagiannakis et. al. (2014), which suggests a gradual integration of environmental thinking into the core business, would suggest the latter.

“... it’s being managed on the base of bringing in the learnings and then as people understand the benefits, then it’s starting to bring in the vision strategy above that.” “So if we can get them to understand the real benefits to them as individuals and to society at large and to the business, once, although it’s perhaps more difficult to get there, when you get there, this sustained impact is significantly greater.” (5)

“we also run a number of, err, Family Days which are open to employees’ family and friends and effectively members of the local community that the bulk of our employees live in, within a couple of miles of the site. And they bring that kind of richness of context so we put a lot of effort into designing and structuring those so they are very engaging, you know, very much activity based, working with our key partners as well to structure up those key activities and bring some life to them, but really structuring them in a way that helps people understand, well, what is the benefit?” (5)

Predominantly environmental managers describe their change initiatives as projects; none described a formal change management model that they have followed. Some of the projects described were discrete initiatives while others were part of a series of projects around a theme such as waste or carbon reduction. A number of participants (1, 5, 8 and 10) referred to an overall strategy that established the direction of travel for their environmental initiatives and within which multiple change projects may be initiated and run simultaneously, thus supporting Doppelt’s (2010) view of a multi-intervention model of change (see section 4.2.2).

“... we have a five-year environmental plan...” (10)

“But I think that’s probably been the biggest project where I could say we’ve made decent – well, started to make environmental change.” (4)

“And we’ve, I’ve identified probably a hundred or so projects between now and 2020 that for both estate and fleet, that will amount to that 30 percent, which is about 3,800 tons of CO₂.” (4)

“...but there’s lots of different change projects that go on all the time.” (2)

This relationship between change management and project management is noted by a number of authors (Carnall, 1991; Buchanan and Boddy, 1992; Hughes, 2010; Cameron and Green, 2015). Pádar et. al. (2011) describe a project as a predetermined “*temporary endeavour undertaken to create a unique product, service or result*” (p.254) and conclude that there is a clear overlap between some forms of change and projects. Participant 5 concurs with this view

“It would depend, being very honest, in terms of exactly what it was. So there would be some things, so for example if you looked at the PV project we’re doing at the moment, that is a technical project and it would be managed as such. A number of other things that we do are very much activities or approaches...” (5)

The approach adopted may also be determined by the stage of the change implementation process that has been reached. Again, Participant 5 notes that a predominantly project based approach may be used to initiate the change but a more embedded approach used to sustain it.

“... so out of the last three and a half years, it was probably only the first year where it was kind of a project. Since then it’s been very much an approach, it’s just the way we do things.” (5)

7.6.2 Tools and Techniques for Environmental Change

Camerson and Green (2012) suggest that engaging individuals through conversation and dialogue is essential to achieve both tangible and intangible change. Indeed, the need for effective communication is a key requirement throughout change management literature. In the context of overcoming barriers to sustainability, Doppelt (2010) also highlights the importance of communication but in addition identifies the need to develop transition teams, implement governance changes, facilitate and reward learning and innovation and ensure alignment of system, structure, policies and procedures (see Table 4.5). Kurland and Zell (2011) add collecting and analysing data, establishing networks, providing training and establishing partnerships to the actions required for environmental change (see Table 4.12). Ramus (2002) similarly highlights competence building as a key requirement for environmental change while Robertson and Barling (2013) demonstrate the importance of leaders sharing their environmental values and enacting pro-environmental behaviours. Examples of all of these change management tools and techniques were provided by managers in this study.

Communication and Training

Participants described the use of a wide range of communication tools to encourage participation in environmental change initiatives, including posters, stickers and photographs, and the circulation of internal newsletters. In addition, participants described a range of more structured approaches including awareness raising presentations and stakeholder consultation events, formal training activities targeted at staff on induction, and targeted training for particular groups of staff.

“... when I first launched the idea of a carbon management plan and what it would mean, I did, like, an internal stakeholder event where we got anyone that was even vaguely related to environmental management or that area, so fleet and operations and finance, and got them all in a room and kind of went through what it actually meant, so what the financial savings would be, kind of where we were now, what we needed to do to get there and I think people were really engaged by it.” (4)

“I wrote an e-learning course for all of our employees, all 3000 have to do it, it’s a mandatory course, so all employees must do it and it’s an introduction to sustainability.” (8)

“And we didn’t just set them loose, we produced a big building managers pack – it had a bunch of tool kits in – we done loads of training with them, we got them online energy monitoring software, so smart meters, and we taught them how to get into this system.” (6)

Participants highlight the importance of these communication approaches but also the importance of content being appropriate for the target audience in order to be effective. (The importance of issue framing is explored in section 7.4.2). The importance of drawing upon personal experience and values in communicating the need for change is also highlighted.

“... so you’ve got to bring in all levels of personal experience or initiatives that you have done so that they can see that you are really this committed person who knows what they are talking about and you are not just banging the corporate drum” (1)

Reward for learning does not feature strongly as a tool used by participants. However, recognition, either through informal feedback or formally via an appraisal scheme or an annual award event, are identified by two of the participants as mechanisms to reinforce formal and informal awareness raising activities and, above all, are linked to empowering employees to believe that they can take action that makes a difference.

“... so you can get photos and send that back to the portering management who can then see, they can chastise the guys if they find that there’s cardboard and recycling in there, or they can complement them and say, “Well done. We’re still confidently baling all the cardboard that we generate and we’re also putting the recycling away.” ” (2)

“... we run a carbon awards event every year and we, err, one of those awards is for Staff Member of the Year who is basically someone who’s really stood out reducing energy and carbon.” (6)

The importance of leaders sharing their environmental values and enacting pro-environmental behaviours as a means of encouraging change (Robertson and Barling, 2013), is also identified in this study and is linked to the importance of authentic behaviour as noted in section 7.4.2.

Governance structures and champions

Doppelt (2010) identifies having the right people involved as one of the keys to success of any change process. Participants in this study, in describing their change activities, often referred to the governance structures in place within their organisations, or the changes they have made to these structures, in support of their activities. The importance of high level support from an ‘issue sponsor’ is often identified (see section 7.3.2 for further discussions) along with a formal committee structure (‘*Governance Group*’ (2); ‘*Environmental Management Working Group*’ (4); ‘*Carbon Management Board*’ (6); ‘*Sustainability Committee*’ (8)) that adds weight and legitimacy to activities. However, participants also recognise the value of bottom up

support with the majority having actively recruited environmental champions to help support local level change and provide a “*bottom up structure*” (4). As expected when it comes to governance, organisational context is important. Participant 3 from the SME notes ...

“I don’t think we’re big enough for environmental champions. If I want to say something to somebody, I just walk across the room and say it.” (3)

... while Participant 4 reflects on her contrasting experiences as an environmental manager in different organisations.

“I’ve got quite a few Champions now but I think it is a, it’s gonna be a long haul. I don’t think it’s gonna be an overnight solution whereas in my previous role, it was the other way round. I had millions of Champions that all wanted to do really good stuff, but actually it was really difficult to engage the senior management team. Whereas the senior management team are totally on board with it and want to see more and more and more, whereas actually it’s, it’s the workforce that’s got a bit of a downer on the organisation.” (4)

Policies and Procedures

Although Harris and Crane (2002), Doppelt (2010) and Mårtensson and Westerberg (2016) all concur that change to the culture of the organisation (intangible change) is essential. Doppelt (2010) also notes that to ensure change is sustainable, all messages and factors that influence organisation performance must be consistent. This includes the instructions, guidance, policies and procedures that staff encounter on a daily basis. Alignment of policies and procedures to the environmental message is, therefore, important. Participants in this study frequently referred to the drafting of a plan, rules, standards, and operating procedures in their quest to change behaviour, but it is notable that often these approaches seem to be targeted at operational staff.

“...we did produce a booklet which went through everything that we captured and provided guidelines on it...” “*It drove the right behaviours in most areas.*” (7)

“the message to the guy on the end of the tray wash or the Saturday girl in the shop who works four hours is, “We have come up with this simple plan to manage something in our business. It fits with our SR objectives, so all you need to do is follow the rules, and the rules are do this and do that.” It sounds quite dictatorial, but, I suppose, compliance with any kind of activity, whether it’s safety & health, or whether it’s environment and food safety, is very much around, across the whole of the estate, is very much around a simple set of steps that you have to take at any stage in the hierarchy. So we will simplify and be a lot more dictatorial at that level.” (10)

It is notable also that many of the participants talked about the importance of conducting audits and collecting data in order to evidence the need for, and impact of, change initiatives. Target

setting and performance measurement are used as tools for tracking performance of change initiatives and for motivating action by providing feedback.

“I wanted to have baseline data so I didn’t want to introduce it in drips and drabs, I wanted to go in and have a data on how much black bag waste we were getting rid of in that area to start with, and then I could show improvements after implementation so I knew certain dates.” (2)

“So that’s about understanding which activities have the biggest influences on those KPIs and measuring the delivery of those activities.” “... if they know actually if I do this when I’m cleaning the kit or if I do this when I’m running the kit, that makes a difference – if we track that, they can see the impact they’re having in terms of that energy or water reduction...” (5)

“... we really put people against each other, we publish tables about who’s reducing the most energy and when you put a bunch of leisure centres against each other, they’re sporty people, they’re just competitive by nature and they hate it – X hates it when Y beat them etc.” (6)

7.6.3 Change Agency

Although there is some dispute in the literature regarding the importance of change agents in the change process, there seems to be consensus in the, all-be-it more limited, environmental change literature on the centrality of the change agent (Post and Altman 1994, Siebenhüner and Arnold 2007; Gattiker and Carter, 2010). The importance of change agency is also a feature of professional dialogue (see section 3.10) and is increasingly identified as a key part of the environmental professional’s role. If we take Caldwell’s (2003) definition of a change agent as being someone who is responsible for *“initiating, sponsoring, directing, managing or implementing a specific change initiative, project or complete change programme”* (p.139), then there is no doubt that the environmental managers in this study are acting as change agents, although the extent to which they identify themselves with this label is variable. Participant 4 is clear about her role as a change agent.

“I would say an Environmental Manager is a facilitator for change.” (4)

However, Participant 2 admits to the dialogue around change management being new to him yet still goes on to identify the central role which he feels an environmental manager holds in driving change, a view shared by other participants.

“Well, change and change management isn’t really, hasn’t been in my vocabulary” “... you need somebody to effect that change and then positively reinforce the work that they are doing to keep that going...” (2)

“... every organisation needs somebody to drive things forward.” (3)

“...if you're gonna drive real behavioural change, typically it's consequence driven and typically people will respond positively into an outcome that's positive, immediate and certain; if it's negative, future and uncertain, then it's very unlikely they've going to do something about it and unfortunately the bulk of our environmental challenges fit in that second category. So I think because of that, it's important that we have individuals who have that understanding, but have that real energy and enthusiasm to move it forwards”. (5)

As noted in section 7.3.2, the majority of participants in the study identified the importance of having senior level support for their change initiatives and reflected upon the fact that success would only come from wider engagement in the change process from across the organisation.

“We probably were the change managers, or the change champions, but we couldn't have done it ourselves. We needed, that came from the director level.” (6)

“... you don't want to have loads of people out there doing green things or being green managers, you need to convince everyone that it's the right thing to do and they all need to change their behaviours and just do a little bit differently.” (2)

Wright et. al. (2012) attempted to categorise environmental change agents on the basis of their self-identities and preferred ways of working. As noted in section 7.4.1 the environmental managers in this study align strongly with Wright et. al.'s 'Rational Managers' (see sections 3.4.2 and 4.4.3), adopting the pragmatic approach of making the business case for change rather than a strongly environmental case, despite in many cases holding strong personal environmental values. However, as noted in section 7.4.1, they also emphasise their passion for environmental protection and desire to make a difference, thus also showing alignment with the 'Green Change Agent' identity, with many also demonstrating a strong engagement with environmental action outside of work characteristic of the 'Committed Activist'. Wright et. al. (2012) note that holding multiple identities depending upon context is not uncommon.

“So, yes, definitely, a tree-hugger at home.” (2)

“But, yeah, I mean, outside of work, then, yeah, I'm involved in, you know, getting outside, wildlife, the outdoors, erm, I'm in a small conservation group, I do some work for them.” (9)

7.7 Conclusion

Critical realism emphasises the importance of the interplay between human agency and setting in shaping the social world (Lewis, 2002; Gix, 210) thus pointing to the need to study both the environmental manager as an agent, and the organisational and external setting in which they operate, in order to fully understand the environmental manager role as a change agent. Situation is also important in the pragmatic paradigm since its focus is on how individuals derive meaning from a particular situation in order to inform change (Baker and Schaltegger, 2015).

This chapter has presented thematic analysis of interview transcripts starting from broad *a priori* themes as presented in Table 6.3 and the elements of the conceptual model presented in Figure 7.1. Analysis has moved beyond these themes to explore in depth the professional, organisational and external factors that influence environmental managers and thus, the context within which they operate. It has also explored the personal values, characteristics behaviours and knowledge of participants that they draw upon in initiating and sustaining environmental change. Analysis has focused on highlighting common patterns that emerge from a purposefully varied sample and, in so doing, has attempted to identify cross cutting themes and shared dimensions of experience. At the same time, individual and organisation specific contexts within these themes have been highlighted.

The complex interplay between factors is evident. For instance, personal environmental values are linked to both authenticity and passion. Authenticity, in turn, allows environmental managers to lead by example and frame a compelling environmental argument. Passion also assists with confident framing and selling of the environmental message but, in addition, supports resilience and tenacity, enabling environmental managers to continue driving change despite set-backs. The networking opportunities provided by professional bodies and associations allow environmental managers to maintain and expand their environmental knowledge, which in turn allows them to frame credible arguments. The arguments that are credible are organisation specific and influenced by internal factors such as the audience, financial situation and sector, as well as external drivers such as regulation and stakeholder pressure. In Chapter 8 the analysis presented in this chapter will be drawn together to explicitly address the research aims of this study.

Chapter 8: Conclusions and Contribution

8.1 Introduction

Despite literature on the concept of environmental leadership spanning a number of decades, it still remains evolutionary in nature with little focus on the role of environmental managers in leading change in their organisations (Andersson and Wolff, 1996; Catasús et. al., 1997; Quinn and Dalton, 2009; D’Amato and Roome, 2009; Greenwood et. al., 2012). The skills and attributes needed by environmental managers to initiate and support environmental change remain ill-defined (Quinn and Dalton, 2009; Van Velsor, 2009; Willard et. al., 2010; Christie et. al., 2013). Junquera and Ordiz (2002) assertion that *“the literature still does not offer a generally accepted definition of the characteristics and attributes of the successful environmental leader”* (p.36) while Redekop (2010) similarly notes that *“very little work has been done on this topic in the field of leadership studies.”* (p.2). However, the demand from business for graduates with the necessary skills and knowledge to support engagement with the environmental agenda is likely to grow (Hasselbarth and Schaltegger, 2014; IEMA, 2014; Lozano et. al., 2015). MacLean (2011) highlights the need for environmental professionals themselves to actively engage in defining their roles, responsibilities and associated competencies while Brady et. al. (2013) note the importance *“that the profession gears itself to provide a management development process that produces people of the requisite capability and education”* (p.555). To do this the profession needs to understand what is important and education providers need to assist by ensuring their programmes develop the knowledge and skills needed. This study has sought, via a series of semi-structured interviews, to explore the seldom studied perspective of environmental managers own experiences in order to identify the factors they considered most important in their day to day job.

Specifically, this study aimed to explore what environmental managers perceive to be the factors that contribute to their success as agents for organisational environmental change and in so doing to critically evaluate:

- the internal and external barriers and enablers for environmental change experienced by environmental managers;
- the mechanisms used and actions taken by environmental managers to implement change in their organisations;
- the personal skills, attributes, behaviours and environmental values they believe are needed to effect change;
- the value of professional status to environmental managers; and

- the interplay between these factors

This chapter brings together the findings from this study to address each of these aims in turn before summarising the success factors and the contribution made by the research project to both professional practice and knowledge, before finally identifying areas for future investigation.

8.2 Internal and External Barriers and Enablers for Environmental Change

The case for organisational change was explored in Chapter 2 with a range of drivers and barriers for change noted. What emerges is that each organisation's journey towards more ecocentric management is likely to be different as a result of the combination of internal and external drivers and barriers experienced, and their current position on a continuum of responses that these factors may influence (Harris and Crane, 2002; Ormazabal and Sarriegi, 2012). Equally, the end point of this journey remains ill-defined (Ramus, 2002; Crews, 2010), although an emerging set of themes and sub-themes, as presented in Table 2.3, provides some direction. It follows then that the role of the environmental manager, and therefore to some degree the skills, attributes and behaviours for success, will be context specific.

Despite the complex mix and lack of consensus on the relative importance of drivers and barriers identified in the literature, this study reveals a high degree of consistency in the factors which environmental managers identify as important, although with some variation in the strength and direction of impact (Table 8.1). For example, when considering the financial implications of environmental change, most of the environmental managers in this study focused on the benefits to be gained from environmental actions through costs savings, while the participant from the SME predominantly talked about the barriers that lack of money created for organisational engagement and thus, findings here align with those of previous studies (Studer et. al., 2006; Williams and Schaefer, 2013). All participants identified regulatory compliance as important but for the participant from the highly regulated Environmental Services sector, ensuring compliance was the key focus of her work and the dominant driver for action in her organisation, thus aligning with the findings of Williams and Schaefer (2013). Unlike regulation which was identified as a driver for action, the wider policy climate was generally discussed as something that failed to offer support, with the short term nature of political cycles and lack of clarity in policy direction being particularly noted.

Table 8.1: Organisational and External Factors Important in Organisational Environmental Change

Factor	Influence
Regulatory climate	Acts as a strong motivator for action.
Policy climate	Uncertainty and/or lack of clarity in environmental policy can hinder progress. Short term policy cycles may prevent the setting of longer term environmental goals.
Stakeholder concern	Can influence action when linked to competitiveness, winning new business, attracting investors and reputational enhancement. Public complaint/concern and reputational impact can also act as drivers for action.
Economic factors	Financial savings from environmental action can act as a strong driver. Lack of available funds can be an obstacle to change.
Senior level support	'Issue sponsorship' at a high level helps to unblock barriers at the senior table. Facilitates engagement throughout the organisation.
Organisation structure	Influences ease of staff engagement and pace of change.

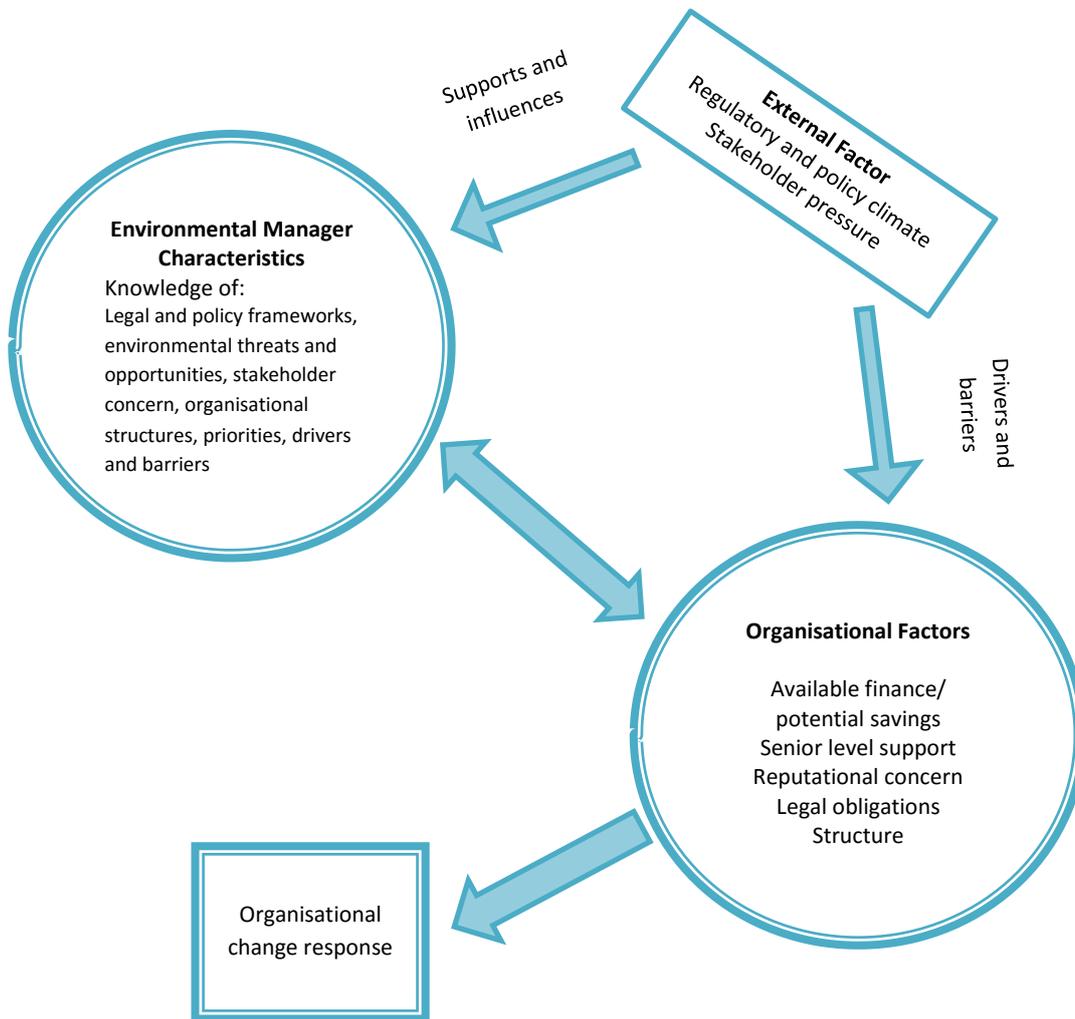
Stakeholder concern also emerges as a key driver with customer and public concern being most often identified. Stakeholder concern is linked to winning business, being competitive, attracting investors, complaints and reputational impact, with organisation specific variations in the importance of these associations. Although previous studies have identified sector as a key contributing factor to variations in stakeholder concern (Banerjee, 2002), there are no consistent sector differences apparent in this study, although this may simply be a function of the sample size. Senior level support was considered important by the majority of participants, both in promoting environmental actions at the top table, and more widely across the organisation. Again, findings here support those of previous studies (Flannery and May, 1994; Harris and Crane, 2002; Gonzalez-Benito, 2006; Cherrier et. al., 2012). However, unlike previous studies, environmental managers in this study placed less emphasis on the pro-environmental values of that senior level sponsor, although it is reasonable to assume that they must have some level of environmental interest in order to be a supporter. Again, there is evidence that organisation specific context may influence the relative importance of senior manager support and that specific organisational structures present unique opportunities and barriers that environmental managers must navigate in order to engage staff in environmental change initiatives.

Ormazabal and Sarriegi (2012) suggest that the importance of the various drivers for change may shift over time as an organisation's engagement develops, suggesting a sequence of regulatory pressure followed by economic benefits and finally green image and top

management commitment as a likely sequence. There is little evidence of this sequence applying as a norm in this study group with all of these factors being identified by participants as important. However, organisational differences were again apparent. For example, Participant 2 identified little need for senior level support to make the changes he had implemented to date, but notes the likely need for this in future (thus aligning with Ormazabal and Sarriegi's sequence). Participant 4, in contrast, describes how action prior to her appointment as the organisations first environmental manager, had resulted from top level commitment. The responses would suggest that organisational diversity makes it dangerous to suggest that a simplified sequence of change drivers would apply in the same way to all organisations, and that a different combination of factors may be important in initiating and sustaining change in each (Harris and Crane, 2002; Papagiannakis et. al. 2014).

All of the organisations in this study had taken at least the first steps on a journey towards greater environmental engagement as they had appointed a member of staff with responsibility for environmental change. It is not, therefore, possible to draw any conclusions about the very early initiation stage of engagement with the environmental agenda. However, beyond that point, the factors identified as important show a high degree of consistency between organisations in the study. The relative importance of each of these factors, as demonstrated above, will be organisation specific which means that environmental managers need to have a comprehensive understanding of their organisational context and likely response to external drivers for change (Figure 8.1). They need to be able to use external drivers to build the case for environmental action in organisation specific ways and understand how to draw upon internal support and structures, and navigate internal politics, to overcome barriers for their change initiatives.

Figure 8.1: Organisational and External Factors in Environmental Change



8.3 Change Mechanisms and Actions used by Environmental Managers

If we consider the definitions of a change agent (Buchanan and Huczynski, 2004; Siebenhüner and Arnold, 2007; Hesselbarth and Schaltegger, 2014) it is clear that the environmental managers in this study were acting in this capacity by initiating, implementing, promoting and delivering change initiatives, with the centrality of their role in the change process highlighted by the view of many that action would cease, or at least momentum be lost, if their role did not exist. Consistently, managers in this study highlighted ‘making a difference’ as being the key personal motivator in their job. This is important since they also highlight the challenges faced

in driving change. However, not all of the participants readily identified themselves as change agents and none discussed the use of formal change management models; in fact, some of the participants admitted to the whole language of change management and change agency being new to them. How much difference a strong change management literacy would make to the success of environmental managers in driving change initiatives is not possible to ascertain from this work, but would be worthy of further study.

It would seem that despite the lack of a shared change agency language, some common change agency behaviours are used by environmental managers. In this study managers overwhelmingly identified a rational and pragmatic approach to change as being most likely to achieve results. Making a strong business case and relating action to an individual's key priorities is much more likely to bring success than an evangelical appeal to protect the planet. The use of 'rational persuasion' in this fashion aligns with the findings of Gattiker and Carter (2010) who identified this as the most frequently used tactic amongst their study group. For environmental managers this means they need a broad understanding of organisational context and agenda, the knowledge and skills to be able to translate the environmental message across multiple business agendas, and the ability to reconcile any ambiguity between their personal values and professional context.

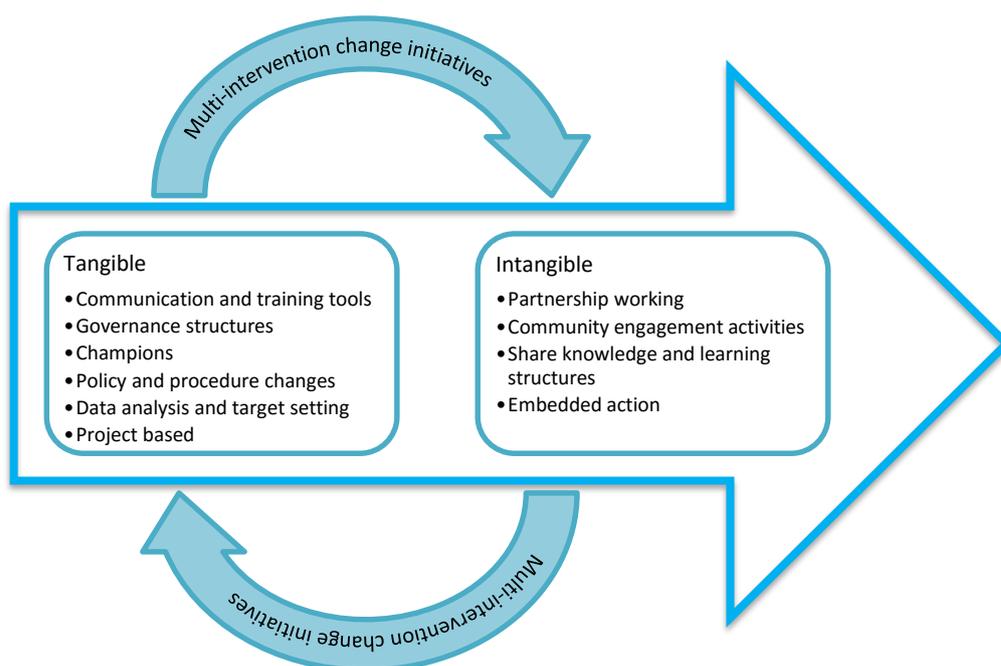
A range of change actions employed by Environmental Managers are revealed in this study. The establishment of environmental governance structures, such as committees and working groups, usually with a high level sponsor, is a common tactic along with the establishment of a networks of champions or volunteers at a local level. However, for small organisations such approaches may be unnecessary. Participant 2 explains how she can easily talk to all staff in the organisation making champions unnecessary. However, Participant 8 identified local level champions as essential to the management of environmental initiatives across globally dispersed sites. Formal and informal communication mechanisms, however, seem to be universally used with environmental managers providing numerous examples. For many, formal policies and procedures were also used to ensure appropriate action along-side data collected to both evidence the effectiveness of change initiatives internally and externally and to establish formal performance measures. All of these approaches are consistent with an emphasis on tangible change and thus align with previous studies (Dahlmann et. al., 2008; Lozano, 2012; Mårtensson and Westerberg, 2016). Both incremental and revolutionary changes were noted in these tangible changes.

Participant 5, however, was notable in that he talked additionally about the process his organisation is using to change culture and the importance placed on individual learning,

empowerment and partnership, with examples of actions such as volunteering activities, awareness events for employees' families and friends and sharing learning with other organisations and community groups. As noted in section 7.3.1, Organisation 5 demonstrates progress against a number of the themes of ecocentric management in the actions taken and strategies pursued. The results, therefore, suggest that the tools employed by environmental managers may be influenced by the engagement stage in addition to organisation specific factors. As organisations progress in their journey towards ecocentric management and begin to embed a cultural change, the environmental manager needs to bring a wider range of tools into play (Figure 8.2).

As noted above, none of the environmental managers in this study talked about the use of recognisable change management models. Instead they predominantly described their change initiatives as projects, either singly or as a linked series of projects, often initiated and run simultaneously in a multi-intervention model of change (Dopplet, 2010). This link between change management and project management is noted by other authors (Carnall, 1991; Buchanan and Boddy, 1992; Hughes, 2010; Pádar et. al., 2011; Cameron and Green, 2015) but there is evidence in this study that as organisations tackle cultural change initiatives and progress towards greater ecocentric business engagement, project management of change becomes less important. This again is an area of environmental change management worthy of further study.

Figure 8.2 Environmental Change Tools Used by Environmental Managers



8.4 Personal Skills, Attributes, Behaviours and Environmental Values for Effective Change Management

For some environmental professionals, this is a vocation rooted in long held ecocentric values, often stemming from early engagement with the natural environment. For others, the environmental management role has resulted from a conscious career change, indeed a recent IEMA practitioner survey identifies career changes as accounting for 42% of respondents (IEMA 2015), a similar proportion to this study (4 out of 10 participants). It would seem that although a strong ecocentric value set is not a prerequisite for entering the profession, at least some level of environmental concern is important in undertaking the role of environmental manager, thus aligning with the findings of Kurland and Zell (2011); Duarte, (2010); and Cantor et. al, 2013. The study reveals three broad groups of environmental manager:

- Vocational environmental managers with long held ecocentric beliefs
- Career changers with strong ecocentric beliefs
- Careers changers with environmental interest

Since this study has not attempted to measure degrees of success in bringing about change, it is not possible to conclude whether one set of characteristics will be more successful than another, but it does serve to demonstrate the diversity of routes into the profession, with a range of previous careers represented amongst the study group.

Although some organisation specific frustrations were identified, and there still seems to be a stereotyping of environmental managers as “tree huggers”, participants in this study seemed to have accepted the need for a pragmatic, rather than evangelical, approach to driving change in their organisations, thus aligning with Wright et. al.’s (2012) ‘Rational Managers’, or they did not identify any misalignment between their values and the organisational change they were pursuing. The tensions resulting from misalignment between personal and organisational environmental values reported in previous studies (Fineman, 1996; Harris and Crane, 2002; Spanjol, et. al., 2015) do not as a result, manifest with this group of environmental managers who seem to be comfortable holding multiple self-identities (characteristics of Wright et. al.’s Green Change Agent and Committed Activist were also evident). The fact that as a group they hold more senior environmental management roles (since the study group were defined as the leaders of environmental change in their organisations), and have a number of years of experience in the role, may account in part for this; if they were struggling with misalignment they are unlikely to still be in the role.

The dominant skills set identified for environmental managers is that of the softer people centred communication skills that enable them to sell the environmental agenda to all levels of

their organisation. There is strong alignment between the findings here and those of previous studies in this respect (Catasús et. al., 1997; Anderson and Bateman, 2000; Crane 2000; Rothenberg, 2007; Kakabadse et. al., 2009; Quin and Dalton, 2009; Kurland and Zell, 2011). Framing and delivery of the environmental message to engage interest at all levels of the organisation is identified as a key skill. This requires

- Passionate, confident and enthusiastic delivery
- Framing of the message in business language that delivers a pragmatic, multi-faceted business case
- Re-framing and translation of the message in multiple audience and organisation specific ways

Environmental managers, therefore, must have the environmental and organisational knowledge to tailor their message and be skilled at both matching the message and the means of delivery to the audience (Gattiker and Carter, 2010; Van der Haijden et. al., 2012; Benn et. al., 2014). Other 'people skills' are identified, with environmental managers in the study stressing the need to be good at relating to others, using rapport building, influence and persuasion but also negotiation, compromise and diplomacy skills. Some level of political acumen is also important.

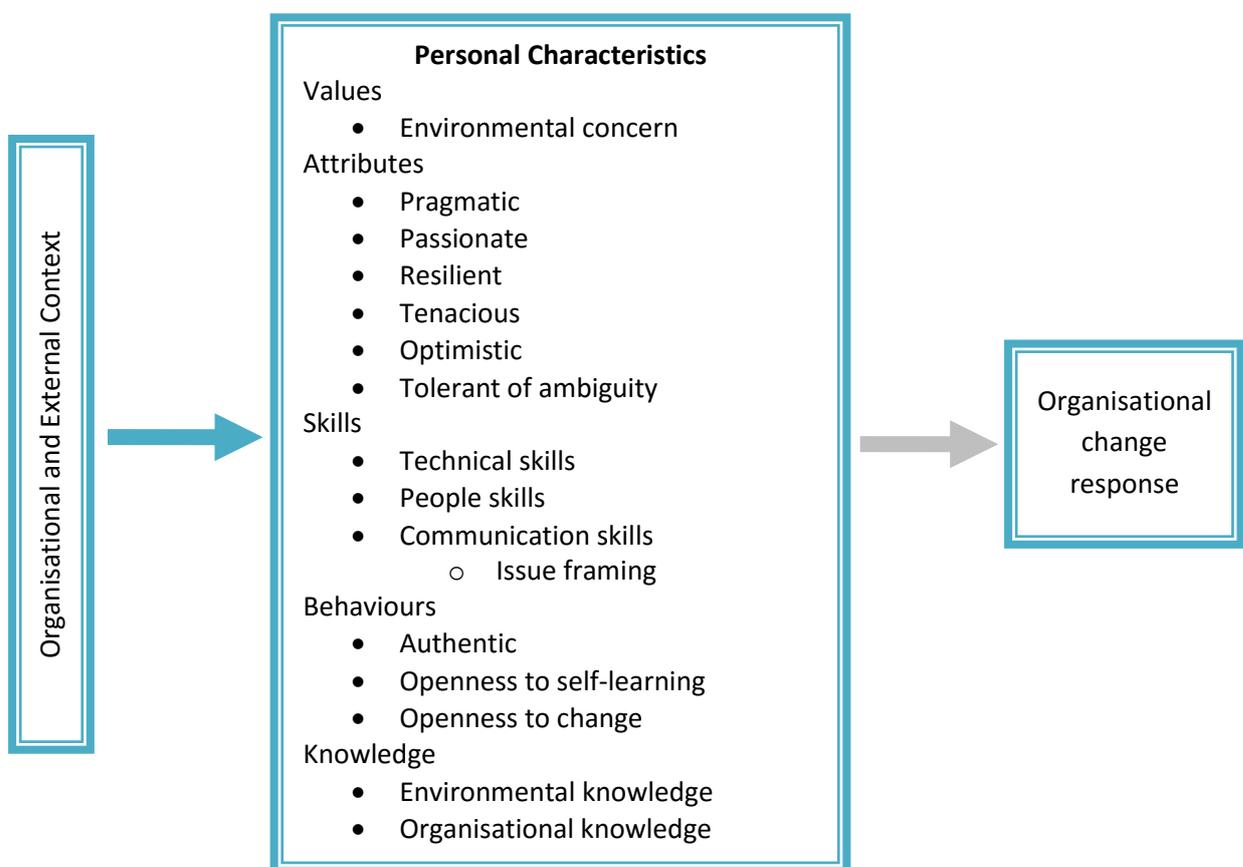
Technical skills are identified less frequently by the environmental managers in this study, but those mentioned show a high level of alignment with those identified by Hasselbarth and Schaltegger (2014) in their study (referred to as methodological competencies) as being important for sustainability change agents; for example, project management, auditing, data analysis and presenting.

The task of initiating and sustaining environmental change is not always easy, so environmental managers must be resilient to set-backs and have the tenacity and persistence to follow their belief in what is right. This is helped by having a strong personal ecocentric belief to fuel both passion and tenacity and to lend authenticity to the message delivered. Personal engagement in environmental activities also adds authenticity. Participants in the study are motivated by 'making a difference' and demonstrate a strong sense of optimism about the future importance of the environmental agenda in organisations, characteristics which will also support resilience and tenacity. Up to date knowledge and understanding of the environmental agenda, alongside understanding of legal drivers and compliance issues, is critical. However, just as important is the need for organisational knowledge; understanding of the organisational structure, key players, operational procedures and internal politics, alongside organisation

specific drivers as noted in section 8.2. A willingness for self-learning to maintain knowledge is essential with participants identifying a wider range of formal and information approaches to doing this.

This mix of personal values, skills, attributes, behaviours and knowledge will together influence how the environmental manager responds to organisational challenges and the external drivers and barriers it faces (Figure 8.3).

Figure 8.3 Personal Characteristics in Environmental Change



8.5 The Value of Professional Status to Environmental Managers

Recent years have seen an active drive for professionalisation in the environmental management field with the development of competency frameworks by leading professional bodies and associations such as IEMA and GACSO and importantly, the development of competencies for chartered status. As noted in Section 3.9, professional competency frameworks and academic literature show a strong alignment in the skills and abilities identified for success. MacLean (2010) suggests that such developments are critical for the survival of

the profession but there is little empirical evidence of the value that employers, or indeed environmental professionals themselves, place upon such developments. This study provided the opportunity for exploratory analysis.

Interviews reveal that environmental managers value professional body membership but at the moment professional recognition and development frameworks are serving primarily to support the environmental manager's own sense of personal achievement. Outside of the consultant role, the value of professional membership and chartered status that is commonly used by employers as a benchmark for competence in other professions, is yet to be recognised for the environmental manager. However, there is evidence amongst the study group of these senior environmental managers taking active steps to build awareness within their organisations, along with a recognition that personal merit must accompany any professional badge.

Professional body membership additionally provides access to professional networks which, alongside sector specific networks, are identified as an important means of supporting the personal development of environmental managers by offering opportunities to access knowledge and share best practice. Professional bodies and associations are thus important in supporting the self-learning needs of environmental managers.

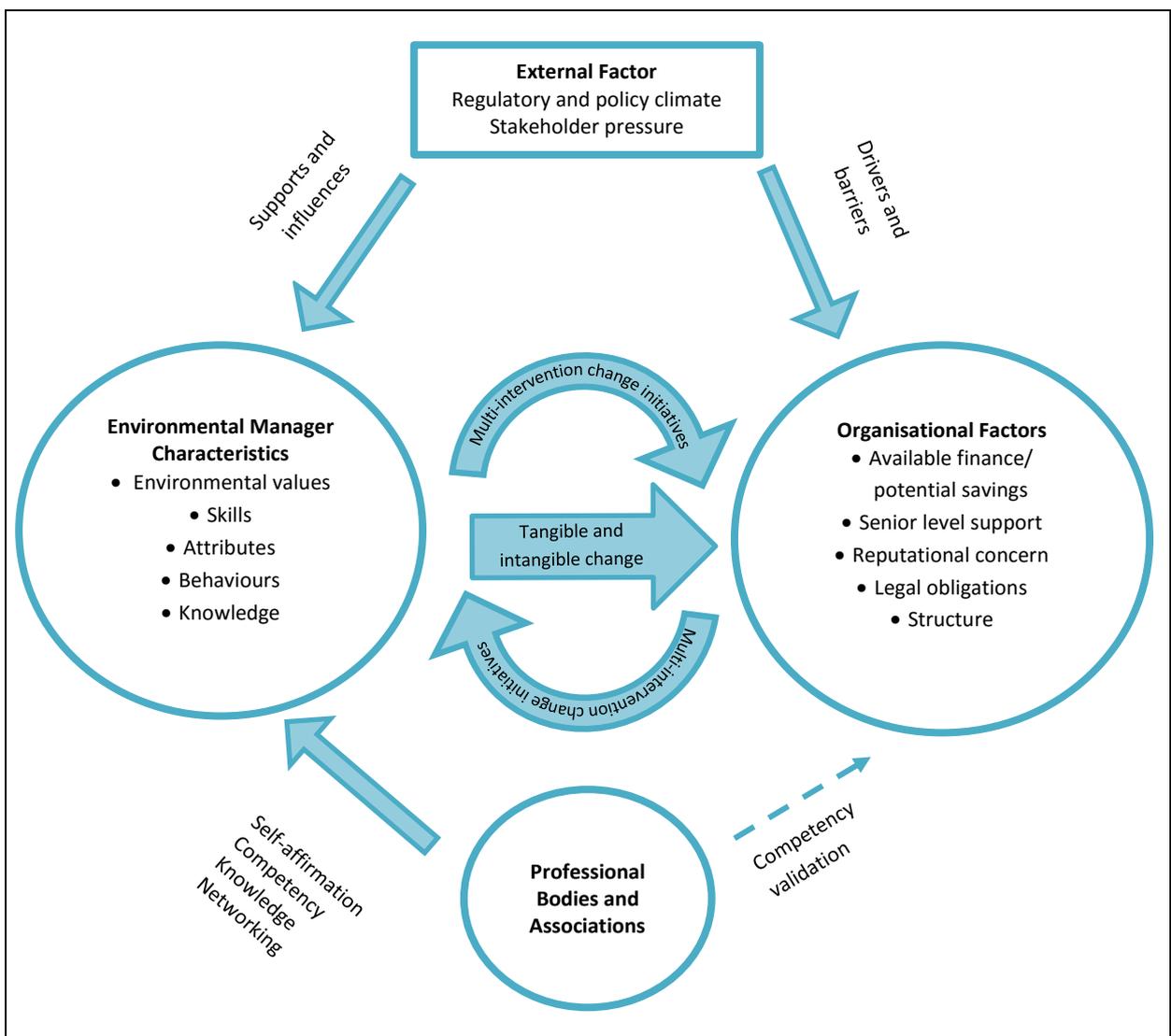
8.6 Success Factors for Environmental Managers – Towards a Model of Environmental Change Agency

Based on a relativist ontology that supports the notion that there is not a single truth that can be determined but multiple perspectives on the same issues that result from the observer's individual circumstances, this study was designed to ensure that context differences would not be lost. Purposeful heterogeneity sampling ensured a diversity of sectors and organisational sizes were included in the study. The aim was to identify common patterns that emerge from a varied sample and, in so doing, identify cross cutting themes and shared dimensions of experience, potentially allowing internal generalisation for the study group. It follows, however, that extrapolation beyond the study group should only be done with caution.

This study clearly demonstrates the context specific nature of environmental change as discussed in the previous sections. However, the degree of consistency in broad themes to emerge from the study allows a tentative model for environmental managers as change agents

to be proposed. The original conceptual model emerging from the literature identified the likely interaction of external context, organisational context, professional context, and personal factors as being relevant in initiating and driving change, but made no assumptions about the strength or direction of interaction between these. From the key findings presented in the preceding sections, Figure 8.4 refines the original conceptual model and summarises the factors that this study has identified as key in environmental change agency. Table 8.2 then provides a summary of the personal skills, attributes, behaviours, knowledge and values of an environmental manager identified as important in this process.

Figure 8.4: Model for Environmental Change Agency



Environmental change in organisations proceeds via a series of tangible and intangible change initiatives that drive gradual, emergent change with the occasional revolutionary shift. Tangible changes may include the creation of a governance structure for environmental management, the recruitment of environmental champions, policy and procedural changes and the collection

and analysis of data to measure progress against targets. Intangible changes may include partnership working, community engagement and knowledge sharing initiatives. In this multi-intervention model, a number of initiatives run simultaneously to bring about change, each feeding back into new initiatives as the organisation proceeds through its' change journey. An organisation's responsiveness and response to the environmental agenda is influenced by the interaction of external and internal factors. Environmental managers play a central role as change agents in this process, using external drivers such as regulation and stakeholder pressure to support their actions. They leverage change in their organisations by interpreting, reframing and translating the environmental message into organisation and audience specific messages, aided by senior level supporters. This requires sound environmental and legal knowledge, but understanding of organisational context is also vital, enabling appropriate financial and reputational levers to be used. A strong personal environmental value set aids this process by adding authenticity and passion to the environmental manager's message. Strong communication and people skills are vital. Professional bodies and associations support skills and knowledge development for environmental managers, and in some sectors may provide competency validation to employers, but above all, they provide self-affirmation of personal competency for environmental managers.

Table 8.2: Environmental Manager Profile

	Key Characteristics	Comments
Environmental Values	Environmental concerned	Enables authentic leadership and adds credibility. Fuels passion and resilience.
Skills	Ability to communicate effectively with a range of audience	Able to communicate to a range of audiences using a variety of communication tools to enhance engagement.
	Ability to frame and translate the environmental message	Able to reinterpret the environmental message to build a strong case for action and to provide meaning for a range of audiences.
	People Skills: Ability to relate to others by building rapport, influencing, negotiating, compromise, diplomacy, employing political acumen, team and partnership working	Able to convey the message in a way that others will respond to; reaching shared understanding and agreement on action; and building trust. Working collaboratively with internal and external partners.
	Technical skills: Ability to manage projects Ability to gather and analyse data Presenting	Able to management change projects, audit and measure performance and evidence the effectiveness of change initiatives both internally to enhance support and externally to build reputation. Able to present information to a range of audiences.
Attributes	Pragmatic	Willing to use a range of non-environmental arguments and accept indirect approaches to achieving environmental goals.
	Tolerant of ambiguity	Able to reconcile misalignment between personal values and professional constraints. Able to move between self-identities.
	Passionate	Enables a compelling argument and selling of the environmental agenda to others
	Resilient	Able to deal with adversity, set-backs and criticism and maintain personal conviction
	Tenacious	Persistence in the face of obstacles to continue trying to make change
	Optimistic	Remain positive about future change

Table 8.2: continued

	Key Characteristics	Comments
Behaviours	Authentic: Enact personal environmental values	Demonstrate environmental behaviours to others via personal actions
	Change orientated	Motivation to seek environmental change and make a difference
	Self-learning orientated	Willingness to continue to update personal knowledge and skills Willingness to share knowledge with others via professional networks and associations
	Act as an advocate for the profession	Act in a professional manager Promote the value of professional competencies
Knowledge	Strong organisational knowledge	Understanding of organisation specific drivers and barriers. Understanding of the financial priorities of the organisation. Understanding of organisational structure, players and internal politics.
	Strong environmental knowledge	Understanding of legal and policy frameworks with respect to the environment. Understanding of the environmental threats and opportunities specific to the organisational setting. Understanding of stakeholder concerns with respect to the environment Understanding of how tools such as auditing and project management can be used in an environmental context Understanding of how change management processes can be used in an environmental context.

8.7 Contribution to Professional Practice

The skills gap faced by many organisations in meeting the environmental challenges ahead has been identified by IEMA (2014) while authors such as MacLean (2010) and Brady et. al. (2013) note the need for a clear set of competencies to support the profession and call for “a *management development process that produces people of the requisite capability and education*” (Brady et. al., 2013 p.555). However, as Christie et. al. (2013) and Hasselbarth and Schaltegger (2014) note, there is still limited research into the profile of the future environmental manager and how the profession prepares for the next generation of recruits. The United Nations Principles for Responsible Management Education (PRME) (UN, 2007) call for conceptual and empirical research to advance understanding of sustainable social, environmental and economic values and for interaction between the academic community and managers and business corporations in order to better understand the challenges in meeting social and environmental responsibilities. By specifically focusing on environmental managers own experiences, this study addresses this call, creating a model for environmental change and a characteristic profile for an environmental manager that contributes to professional discourse and can be tested in future empirical studies. The following sub-sections summarise the contribution that this study makes to professional discourse on the future development of the profession.

8.7.1 Environmental Knowledge Alone is Insufficient

This study demonstrates that a sound knowledge of environmental science and the legal and policy frameworks for environmental protect within which organisations operate, is insufficient if environmental managers are to be successful in driving organisational environmental change. Although it identifies stakeholder interest and the legal and policy climate as common external factors, their strength and direction of influence is organisation specific. So too are internal factors such as organisational finance, the influence of senior level support and organisational structure. Environmental knowledge, therefore, must be coupled with knowledge of how organisations work and core business processes so as to enable the identification of opportunities and the credible framing of the environmental agenda in business language. This study also identifies the important role that environmental values play in enable authentic leadership and fuelling the passion and resilience needed by environmental managers for success. It is additionally important, therefore, that the delivery of environmental knowledge is not simply an add-on to traditional business programmes. Participants must be engaged with the natural environment in a meaningful way in order to nurture and develop an environmentally centred value system.

A simple search on the University and College Admissions Service (UCAS) course search engine reveals 56 higher education institutions in the UK delivering undergraduate programmes in environmental science and environmental management. Although a growing number of these offer a placement year that provides a welcome opportunity for students to obtain work experience, and undoubtedly some include a small number of business orientated modules, the search reveals only 6 providers delivering integrated environmental and business management programmes (Environment and Business – Leeds University.; Environmental Science with Business Management – Queen Mary University London; International Business and Environmental Sustainability – University of Dundee; Business with Sustainability – Huddersfield University; Environmental Management with Business – Kingston and Southampton Universities). A similar pattern is found at postgraduate level. The challenges associated with delivering this kind of integrated provision are many and varied, not least being the need to work across discipline boundaries within institutional frameworks that often appear designed to prevent, rather than facilitate interaction. However, if the challenges of achieving ecocentric management are to be met, these barriers must be overcome so that a more holistic approach to the delivery of education for the future generation of environmental managers is achieved.

In addition to integration of business and environmental thinking at the formal education level, professional bodies must ensure a sufficiently robust continuing professional development (CPD) framework to enable environmental managers from traditional environmental management and science programmes to acquire business management knowledge, whilst also facilitating the development of the environmental knowledge that the career changers in this study identify as important for personal credibility and confidence. The ever changing environmental agenda also means that environmental managers from all backgrounds need to continually update their knowledge.

As noted in Section 3.9, recent years have seen a growing discourse around competencies and change management led by environmental professional bodies and associations such as IEMA, GACSO and the Society for the Environment in the UK. It is notable also that IEMA and CIEEM have recently launched accreditation criteria for degree programmes. Although not the full 'certification and licensing processes' that MacLean (2010 p.106) calls for, this does provide the first steps towards encouraging a consistent knowledge and skills base for those planning a future in the profession. It is notable also that the competency framework provided by IEMA (2017a) spanning all levels of membership, contains both knowledge of the 'fundamentals of sustainability' and 'principles and issues of business governance' at its centre.

8.7.2 A Broad Skills Mix is Needed for Success

This study identifies the need for environmental managers to have a broad mix of technical, people management and communication skills. Technical skills such as project management, auditing and data collection, data analysis and presenting, should be comparatively easy to develop with appropriate CPD. Project management training in particular would be beneficial for environmental managers given the frequency of reference made by participants in this study to the management of change initiatives as projects. The softer people centred and communication skills are harder to teach with managers identifying these as things they have developed over time. Awareness of their importance, however, could be raised via CPD and promoted via competency frameworks.

Although environmental managers in this study were undoubtedly acting as change agents, there was little evidence of formal change management approaches being used and indeed, the language of change management and change agency rarely featured in the discussions. How much difference a strong change management literacy would make to the success of environmental managers in driving change initiatives is not possible to ascertain from this work but intuitively, better understanding of how and why change occurs in organisations would help facilitate success. The literature specifically focused on environmental change is still thin but with growing interest from professional bodies, there is an evident need for further dialogue and the development of a common understanding around success factors for environmental change. This study provides a model that can form the basis for this dialogue.

8.7.3 There is a Need to Further Raise the Profile of the Profession with Employers

It is evident from this study that professional body membership is currently of more value to the individual as a means of self-affirmation of skills and knowledge than it is to their employers. This point is particularly striking since all of the organisations involved in this study had already taken the step of employing an environmental professional. The extent to which the lack of a clear benchmark of competence is acting as a barrier to other organisations taking the initial step of employing someone, is impossible to tell. Indeed, we could speculate that for some organisations there may be a total lack of awareness that such a role exists. The status of Chartered Environmentalist does not yet carry the same weight as other chartered professions, although there are signs of some change and evidence that environmental managers themselves are actively engaged in awareness raising. The introduction of a graduate membership level by IEMA, followed by a structured career path to chartered status, may have some impact in coming years but progress is likely to be slow. The existence of multiple

environmentally related professional bodies and associations complicates the picture further. There is, therefore, an urgent need to raise the profile of the profession at all levels if we are to continue to recruit suitably qualified individuals to meet identified future skills gaps (IEMA 2014; UNEP 2008 and 2011). The importance of a strong environmental value set means it is important that the environmental profession is not just promoted as a career route to those entering higher education, but that engagement with the natural environment and awareness of environmental issues is nurtured from a young age. Professional bodies, therefore, need to consider how they work beyond their members to raise awareness.

8.8 Contribution to Knowledge

This research aimed to present an explicit environmental practitioner perspective on the topic of organisational environmental change and, in so doing, fill an identified gap in the academic literature (Banerjee et. al., 2010; Willard et. al., 2010). By employing a qualitative methodology, the study provides insight into the day to day lived experiences of practitioners and allows us to understand their engagement, motives and practice (Williams and Schaefer, 2012), thus providing deeper understanding of what is still an exploratory field of research (Quinn and Dalton, 2009).

The study synthesises and updates the divergent perspectives on the skills, attributes, values and behaviours identified in previous studies as important for successful environmental leadership. One of the challenges in compiling a clear profile of an environmental manager from the literature results from the study groups used in research to date. Studies have often focused on single sectors (for example Automotive Industry – Fineman, 1997; Environment Sector – Egri and Harman, 2000; Food Industry – Arnaut et. al., 2012) and have been conducted in numerous different countries (for example, Brazil – Duarte, 2012; Arnaut et. al., 2012; North America – Egri and Harman, 2000; Anderson and Bateman, 2000; Kurland and Zell, 2011; Spain – Janquera and Ordiz, 2002; Holland - Van der Heijden et. al., 2012) with limited reference to a UK context. Using purposeful sampling to obtain a heterogeneous sample, this study provides a multi-sector view thus enabling the exploration of common factors between sectors. It also adds to the limited literature thus far offering a UK perspective.

Another feature of the literature to date has been a tendency to focus on a limited range of variables of environmental leadership such that Frenández et. al. (2006) highlight the need for research that analyses *“the interdependences among the diverse dimensions of an environmental manager’s profile.”* (p.271). This study has addressed this research gap by

taken a holistic view in order to identify a wide profile of the values, skills, attributes and behaviours needed by an environmental manager and by examining the interactions between these variables as well as external and internal influencing factors. This has revealed the highly context specific nature of the environmental management role but, with cautious extrapolation, has also produced a common profile for an environmental manager.

The study also incorporates the role of professional bodies and associations as a factor in the environmental change process which has largely been excluded from previous studies. This has identified the important role that professional bodies and associations have to play in supporting self-learning and self-affirmation for environmental managers, but also highlights the limited impact that they have had, as yet, on employer recognition of the need for 'professionalisation' of the environmental manager role.

Although change is a constant theme running through environmental management literature, there is a disjuncture between literature focusing on change agency and that focusing on environmental management skills and attributes. Work focusing explicitly on environmental managers as change agents is limited (Sharma, 2002; Gattiker and Carter 2010; Visser and Crane, 2010). By framing this study around how environmental managers manage change in their organisations, it addresses this gap and offers an explicit focus on the skills, attributes and behaviours needed by environmental managers to act as change agents. It is clear from the study that environmental managers are acting as change agents in their organisations and have a central role to play in both initiating change initiatives and driving action. Without their constant input, change initiatives might falter and would proceed more slowly. However, success as a change agent needs a pragmatic approach, a strong communication skills set and strong organisational as well as environmental knowledge.

8.9 Research Quality

It is important in any research activity to reflect upon the quality of the outcomes. Section 6.5 explored some of the issues associated with quality in qualitative research and thematic analysis. The researchers personal position in the context of the research was declared at this stage and the 'audit trail' for template development provided. Table 6.5 presented a checklist for good thematic analysis which was followed throughout the design and analysis stages of this study. However, it is still important to reflect upon issues that may have impacted upon the quality of the results presented.

Sample size is an important consideration in any study and as noted in section 6.3.1, is particularly contentious in qualitative studies (Boddy, 2016). Justification for the sample size selected was presented in section 6.3.1 but its adequacy should also be judged from the outcomes of the study. In line with the relativist ontology, validity of the study should be judged by whether a sufficient number of perspectives have been included that gain access to the experiences of those in the research setting (Patton, 2002). The study should also be judged on whether appropriate steps were taken to allow internal generalisation and tentative extrapolation beyond the study group that can be tested in future research, and by the reliability of the conclusions reached as judged by the transparency of data presentation such that similar conclusions might be reached by others (Patton, 2002). Throughout the analysis of the data, the context specific nature of findings has been highlighted. Internal generalisation has been achieved by focusing on the themes that show the strongest consistency across participants. The fact that a number of consistent themes do emerge indicates that the sample size used was appropriate for the declared aims of the study. Tentative extrapolation in the form of a proposed model for environmental change agency (Figure 8.4) and an environmental manager profile (Table 8.2) has been made from these internal generalisations, creating a basis for further research as suggested in section 8.10. Conclusions reached have been illustrated throughout using extracts from the participant transcripts in order to enhance transparency.

One factor not transparent in the presentation of findings is the timeframe for the study. Participant interviews were spread over a number of months due to both the availability of the researcher and the participants. External climate changes for example, may therefore have influenced some of the findings but these impacts were minimised by asking participants to reflect upon their wider experience rather than an emphasis on present actions. Within the timeframe for organisational change, the data collection timeframe, however, remained small.

8.10 Future Research Directions

As noted above, any extrapolation from the findings associated with this study group can only be made tentatively. It would, therefore, be appropriate to test the findings through wider studies. Although the justification for the multi-sector approach of this study has been given, in depth studies of individual sectors would be of merit. The findings of this study identify some differences between sectors because of the different drivers and barriers faced. How these constrain and support action could be further explored. There is also evidence in the study that different approaches may be appropriate in SMEs compared to larger organisations. Again further study would help to identify the extent of these differences.

The long time frames associated with ecocentric management (Taylor, 1992; Hanson and Middleton, 2000) and the emergent nature of environmental change (Hanson and Middleton, 2000; Ryan et. al., 2012; Van der Heijden, et. al., 2012) suggest that longitudinal studies might be of value. Although this study did not find evidence of Ormazabal and Sarriegi's (2012) sequence of organisational change drivers, there is a suggestion that drivers do change over time for organisations and thus, may influence what environmental managers do and the skills set they need. This study has provided only a snap shot in time and, therefore, presents the factors environmental managers consider important in the current policy, regulatory and economic climate. Longitudinal studies would help to determine what adaptations to the environmental manager profile presented are needed as the challenges faced by organisations change.

Findings from this study also suggest that the tools employed by environmental managers may be influenced by the engagement stage an organisation has reached. As organisations progress in their journey towards ecocentric management, and begin to transition from tangible to intangible changes, the environmental manager may need to develop a wider skills set. These differences may be identified by purposefully selecting organisations for study that demonstrate different levels of engagement with the environmental agenda.

Finally, this study has explicitly focused on environmental management rather than the wider construct of sustainable development for the reasons stated in the introduction. As Van Velsor (2009) notes, there is a need to better understand the practices and capabilities associated with moving organisations towards social responsibility as well as environmental sustainability. Existing literature suggest a high degree of commonality yet Greenwood et.al. (2012) note that environmental managers are "*underestimated and underutilized*" (p.59) in the capacity of sustainability change agents in their organisations. Future studies that consider the value and transferability of environmental management capabilities and skills in assisting organisational change towards social responsibility would be of value.

Appendix 1: Continuum Environmental Management Models

Source	Model stages or categories				
Hunt and Auster (1990 p.9)	Stage 1 Beginner	Stage 2 Fire Fighter	Stage 3 Concerned citizen	Stage 4 Pragmatist	Stage 5 Proactive
Greeno 1993 p. 17	Stage 1 Problem solving	Sage 2 Managing for compliance		Stage 3 Managing for assurance	
Newman 1993 p.32	Reactive		Proactive		Innovative
Muller and Koechlin 1992 p. 172	Inactive Ignore 'ostriches'	Reactive Respond 'chicken lickers'	Proactive Anticipate 'green hornets'		Hyperactive Provoke 'Robin Hood'
Roome 1992 p. 18	Non-compliance	Compliance	Compliance plus	Commercial & environmental excellence	Leading edge

Source: Hass, 1996 p. 61

Appendix 2: Society for the Environment - Chartered Environmentalist criteria

Competency A

Application of knowledge and understanding of the environment to further the aims of sustainability

A1 Have underpinning knowledge of sustainable development principles in the management of the environment.

This normally includes the ability to:

- Critically analyse, interpret and evaluate complex environmental information to determine sustainable courses of action.
- Understand the wider environmental context in which the area of study or work is being undertaken.
- Understand the importance of maintaining and enhancing natural cycles and biodiversity in achieving sustainability.
- Reformulate and use practical, conceptual or technological understanding of environmental management to develop ways forward in complex situations.

A2 Apply environmental knowledge and principles in pursuit of sustainable environmental management in professional practice.

This normally includes the ability to:

- Conceptualise and address problematic situations that involve many interacting environmental factors.
- Determine and use appropriate methodologies and approaches.
- Critically evaluate actions, methods and results and their short and long-term implications.
- Actively learn from results to improve future environmental solutions and approaches, and build best practice.
- Negotiate the necessary contractual and agreed arrangements with other stakeholders.

A3 Analyse and evaluate problems from an environmental perspective, develop practical sustainable solutions and anticipate environmental trends to develop practical solutions.

This normally includes the ability to:

- Analyse and evaluate problems, some complex, from an environmental perspective working sometimes with incomplete data.
- Demonstrate self-direction and originality in tackling and addressing problems.
- Demonstrate a critical awareness of current environmental problems and anticipate the impact of future environmental trends.
- Critically analyse and embrace new environmental information and seek new knowledge, skills and competences in the field of environment based on the most recent scientific, social, economic, cultural and technical developments and understanding.

Competency B

Leading Sustainable Management of the Environment

B1 Promote behavioural and cultural change by influencing others in order to secure environmental improvements that go beyond minimum statutory requirements.

This normally includes the ability to:

- Develop good practices [best practice] by actively learning from results to improve future environmental solutions and approaches.
- Help, mentor and support others to understand the wider environmental picture
- Advocate sustainability concerns and environmental issues, encourage others to actively contribute to environmental protection and sustainability

B2 Promote a strategic environmental approach

This normally includes the ability to:

- Demonstrate self-direction and originality in developing strategies for sustainable development and environmental improvement.
- Actively collaborate and engage with other disciplines and stakeholders and encourage multi- and inter-disciplinary approaches to environmental challenges
- Identify constraints and exploit opportunities for the development and transfer of environmentally appropriate technology.
- Identify areas of uncertainty and risk including health and safety, environmental, technical, business and reputational.

B3 Demonstrate leadership and management skills.

This normally includes the ability to:

- Exercise autonomy and judgement across environmental and sustainability issues.
- Motivate and influence others to agree and deliver environmental objectives.
- Identify individual needs, plan for their development, assess individual performance and provide feedback.
- Reflect on outcomes, identify and pursue improvements on previous practice.

Competency C

Effective Communication and Interpersonal Skills

C1 Communicate the environmental case, confidently, clearly, autonomously and competently.

This normally includes the ability to:

- Deliver presentations to a wide spectrum of audiences.
- Lead and sustain debates.
- Contribute to and chair meetings and discussions.
- Identify, engage with and respond to a range of stakeholders.

C2 Ability to liaise with, negotiate with, handle conflict and advise others, in individual and/or group environments (either as a leader or member).

This normally includes the ability to:

- Understand the motives and attitudes of others and be aware of different roles.
- Influence decision-making.
- Seek the opinions and contributions of others
- Promote development opportunities and activities.
- Champion group decisions and manage conflict for the achievement of common goals and objectives.

Competency D

Personal commitment to professional standards, recognising obligations to society, the profession and the environment

D1 Encourage others to promote and advance a sustainable and resilient approach by understanding their responsibility for environmental damage and improvement

This normally includes the ability to:

- Inform and encourage others to consider environmental sustainability issues and the consequence of their decisions and actions.

D2 Take responsibility for personal development and work towards and secure change and improvements for a sustainable future.

This normally includes the ability to:

- Recognise the value of CPD to the profession.
- Have a strong desire to learn.
- Value and actively pursue personal professional development.

D3 Demonstrate an understanding of environmental ethical dilemmas.

This normally includes the ability to:

- Understand the nature of professional responsibility.
- Identify the environmental ethical elements in decisions.
- Address and resolve problems arising from questionable environmental practice.

D4 Comply with relevant codes of conduct and practice.

Appendix 3: IEMA Skills Map, Knowledge and Competencies – Managerial Level



Source: IEMA (2017a)

Demonstrate understanding of:	Show Competency by:
<p>Fundamentals of Sustainability</p> <ul style="list-style-type: none"> • Global mega-trends and how they drive a need to transform the world to sustainability • The UN's Sustainable Development Goals and how they create a framework for action • The way environmental limits and the equalities agenda maintaining economic growth and creation of sustainable capital • The five sustainable capitals and their interdependencies between them • The ways current economic activity can produce unintended environmental and social consequences from the local actions and global consequences • The need for sustainability skills and how they can overcome internal and external challenges in pursuit of sustainable outcomes • How ongoing review and innovation at an individual and organisation level maintain progress towards the goal of sustainability. • Explaining how a lifecycle perspective and a collaborative approach can address unsustainable practices • The challenges in balancing interactions between social, environmental and economic factors in the context of sustainable development 	<p>Leadership for Change</p> <ul style="list-style-type: none"> • Demonstrating use and application of change management principles • Educating, influencing and challenging organisational culture to improve sustainability performance • Adjusting existing business models, or adopting new ones to innovate and deliver better products or services • Leading teams and managing people effectively to produce more sustainable outcomes
<p>Principle and Issues of Business Governance</p> <ul style="list-style-type: none"> • Sustainable business behaviours and models, with examples of how they are driving the transition to a sustainable economy • Sustainable business practises and how organisations benefit in moving toward net, or net positive performance • The importance of safe operating space in relation to social floor and environmental limits, and to what extent do they impact on your organisation, and on business • Ethics and how they influence individual and organisational decision making • Concepts such as corporate responsibility, corporate sustainability and sustainable business, how they vary in application and practise 	<p>Analytical Thinking</p> <ul style="list-style-type: none"> • Analysing information to obtain understanding and insight • Using information and knowledge to propose and support strategic decisions • Adapting information and knowledge for different audiences

Demonstrate understanding of:	Show Competency by:
<p>Issues and Principles</p> <ul style="list-style-type: none"> • The importance of natural cycles, ecological systems and environmental limits and their influence on their organisation, its products and services • The impact of human interventions upon natural ecological systems, habitats, species and individuals • How taking a socio-economic approach to problem solving can create or offer opportunities for improved and more sustainable products and services • The importance of equality (incl: gender equality), inclusivity, cultural context and engagement in their role 	<p>Problem Reframing and Resolution</p> <ul style="list-style-type: none"> • Identifying short, medium and long term trends, threats and challenges to achieving sustainability • Creating and prioritising opportunities to create more sustainable products and services • Taking action to develop and implement solutions to problems
<p>Policy, Regulation and Legislation</p> <ul style="list-style-type: none"> • The key trends in their regulatory and policy landscape, their impact on their sector and how they either hinder or enhance delivery of sustainable products and services • How key policy and regulatory issues link to national and international sustainability issues • The role particular stakeholders play in influencing issues and development of policy 	<p>Effective Communication</p> <ul style="list-style-type: none"> • Communicating positive sustainability practices • Presenting in ways appropriate to the audience • Understanding the viewpoints and interests of stakeholders and using that insight to communicate and promote sustainable practices appropriately
<p>Innovative and Leading Practices</p> <ul style="list-style-type: none"> • Innovation in their field and the way it supports the development of sustainable products and services • Success factors in innovation and how they can be replicated in a relevant context 	<p>Relationship Development</p> <ul style="list-style-type: none"> • Identifying stakeholder needs and expectations, and responding accordingly, to deliver improved and sustainable practise, products and services • Building and maintaining the relationships needed for collaboration and cooperation • Enabling and facilitating networks within and beyond organisations, leveraging the skills and expertise needed to deliver sustainable product and services

Demonstrate understanding of:	Show Competency by:
<p>Management and Assessment Tools</p> <ul style="list-style-type: none"> • Tools relevant to their field to work, outlining their advantages and disadvantages, and explain how they facilitate improved sustainable outcomes • How relevant tools, techniques, systems and practices are applied to manage sustainability across the value chain • Lifecycle thinking, its benefits and challenges, and its application in decision making • The roles different people play in producing or delivering sustainable products and services, and their interactions • The role of review and audit has in driving improved sustainability performance of products and services 	<p>Resilience, Risk and Continual Improvement</p> <ul style="list-style-type: none"> • Adopting a whole life cycle approach in the application of tools, techniques and systems • Identifying barriers to the delivery of strategy, and putting steps in place to overcome them • Using systems thinking to maximise sustainability benefits and opportunities, and to either minimise or mitigate negative impacts • Using tools, techniques, systems and practises to drive continual improvement
	<p>Delivering Sustainable Solutions</p> <ul style="list-style-type: none"> • Delivering and translating a vision for sustainability into a range of projects, programmes and processes that deliver sustainable products and services • Applying performance management techniques to monitor delivery of a vision for sustainability • Making the business case for sustainability, demonstrating positive financial, social, and environmental return on investment • Using contracting and procurement as a component of sustainable production and consumption

Source: IEMA (2017a)

Appendix 4: GACSO Sustainability Competencies and Attributes

Competence	Indicators
Expert knowledge	<p>Has a profound command of the overall sustainability agenda, particularly the Big 5 issues of poverty, consumption, carbon, wellbeing and reforming economics, tracking their evolution and the interplay between them.</p> <p>Ability to analyse and interpret how the Big 5 and lesser issues could, and will, influence the core business and product offer of their company. Keeps fully informed about latest developments in sustainability thinking.</p>
Leading people	<p>Promotes excellence in sustainability thinking and works to raise the bar with key players and the organisation</p> <p>Creates compelling vision that generates excitement and commitment and fosters innovation.</p> <p>Demonstrates creative ways to build and sustain a positive climate for engaging on sustainability matters.</p> <p>Shapes efforts of self and others towards common purpose of delivering sustainability strategy and programme.</p> <p>Acts to reinforce sustainability vision and ensure people, processes and practices are aligned accordingly.</p> <p>Articulate and creative communicator internally as well as externally to achieve recognition of organisation's thinking, vision and achievements.</p>
Results orientation	<p>Creates environment in which current thinking, processes and methods of working can be challenged.</p> <p>Can focus energy and intellect of self and others on an issue or underperforming part of organisation</p> <p>Identifies and overcomes barriers to major change in thinking and processes within the organisation.</p> <p>Identifies and overcomes barriers to major change in thinking and processes within the organisation.</p> <p>Develops stretching proposals but with workable plans to take the organisation out of Business as Usual into transformation territory.</p> <p>Demonstrates entrepreneurial flair with drive, passion and energy to succeed.</p>

Acting independently	<p>Demonstrates self-belief and resilience to enable existing thinking and processes to be challenged before being asked to.</p> <p>Prepares self and own team for challenges ahead based on own vision.</p> <p>Will take action to reposition self and other key roles to deliver transformational thinking as part of wider process of creating change in strategy or approach.</p> <p>Able to hold firm to belief or decision that is right for the organisation even in face of potential personal cost.</p> <p>Demonstrates high level of resilience in the face of challenges and setbacks.</p>
Impact and influence	<p>Demonstrates extremely strong ability to persuade, convince and influence others. Evidence of using differing approaches to win support, gain co-operation or overcome objections and barriers.</p> <p>Skilled at networking and using alignment strategies to secure support ahead of decision points and securing ownership and “buy in”.</p> <p>Uses in depth understanding of others to develop engagement methods in change – politically savvy.</p> <p>Acts to shape and steward other functions within the organisation rather than implementing projects in isolation.</p>
Teamwork and collaboration	<p>Effective within “virtual” teams with high levels of ambiguity.</p> <p>Demonstrates support for efforts of matrix teams working across organisational boundaries to deliver new thinking and sustainability programmes.</p> <p>Identifies and involves the best talent in the organisation to achieve specific objectives – seen as the best virtual team to be in by others.</p> <p>Challenges silo mentality within the organisation.</p> <p>Builds teams within the organisation to drive change and operationalise sustainability outside of sustainability function.</p>

<p>Focused thinking</p>	<p>Understands business areas/functions from an alternative sustainability perspective and provide a commercial angle to integrate sustainability thinking/acting.</p> <p>Conducts “breakthrough” thinking to bringing a totally new perspective to sustainability issues that are of significance to the organisation.</p> <p>Builds new models to explain situations, issues or to resolve complex problems.</p> <p>Creative about opportunities to align product or services with future sustainability challenges and can articulate these to others.</p> <p>Able to think through impacts of critical forces shaping the organisation, its external environment and current sustainability challenges and be prepared to develop radical proposals.</p> <p>Understands complexity of decision making within own organisation and able to use these or alternative methods to achieve a viable and commercial end goal.</p>
<p>Information seeking</p>	<p>Has a strong external focus, building and maintaining good knowledge of political/economic/environmental/social/legislative forces and trends in operating sectors and geographies.</p> <p>Seeks out and clarifies complex and conflicting data to provide self and others with better understanding of sustainability challenge in language organisation recognises.</p> <p>Identifies commercial risks and opportunities in the sustainability agenda and communicates these commercially within the organisation.</p> <p>Actively networks internally for strategic information and externally for latest thinking and data on sustainability matters.</p> <p>Seeks out and brings to business breakthrough thinking and technologies to reshape the organisation.</p> <p>Looks to work collaboratively with like-minded organisations and policy makers to shape industry wide initiatives.</p>

<p>Organisation awareness</p>	<p>Understands and makes best use of power and political relationships within the organisation identifying key alliances and rivalries.</p> <p>Understands and recognises reasons for long term organisational issues (past practices, culture, changing values, myths).</p> <p>Comfortable not being restrained by organisational politics, recognising influencers and choosing how to act accordingly.</p> <p>Understanding current strategic direction and able to harness this and blend it with sustainability thinking to improve organisation's performance.</p> <p>Demonstrates in depth knowledge of organisation's operating environment but also able to capatilise on strategies and change from other sectors.</p>
<p>Commercial awareness</p>	<p>Demonstrates in-depth understanding of the commercial impact of the overall sustainability agenda.</p> <p>Acute awareness of the financial and commercial impacts, both long and short term, of the organisation's evolving sustainability strategy.</p>
<p>Developing people</p>	<p>Creating conditions and programmes for the next generation of sustainability thinkers and leaders to be developed within the organisation.</p> <p>Enabling an "edge" to future sustainability leaders is honed by providing external challenges and experiences.</p>

Source: GACSO, 2011

Appendix 5: Skills and Attributes of Change Agents

Hussey D, 1998 p.92	Margulies and Raia, 1972 cited in Paton and McCalman, 2008 p.229	Tearle, 2007 cited in Paton and McCalman, 2008 p.231	Buchanan and Boddy, 1992 cited in Senior and Swailes, 2010 p.341
<p>Skills</p> <ul style="list-style-type: none"> • Analytical • Coaching • Communication • Conceptualization • Counselling • Empowering • Listening • Questioning • Situational leadership • Team building <p>Knowledge</p> <ul style="list-style-type: none"> • Competitors/customers • Corporate goals • Own function • Role and function of others • The business <p>Attributes</p> <ul style="list-style-type: none"> • Determination • Flexibility • Integrity • Empathy • Energy • Judgement • Courage 	<ol style="list-style-type: none"> 1. Personality – awareness and sensitivity to social issues, ability to get on well with people, listen, show empathy, people skills 2. Analytical and diagnostic skills 3. Client-related experience – ‘been there, done that’ 	<ul style="list-style-type: none"> • Common sense and the courage to use it • Credibility and trust – ability to work at all levels in the organization • Wide range of business knowledge • Knowledge of change management • Ability to work with teams of people inside and outside the organisation • Ability to do very unstructured work • Creativity • Self-confidence offset by humility • Facilitation skills • Design skills • Coaching skills • Love of innovation and new ways of doing things • Sense of humour and fun • Spirit of caring • Ability to inspire people 	<p>Goals</p> <ol style="list-style-type: none"> 1. Sensitivity to changes (key personnel, market conditions) and impact on goals 2. Clarity in specifying goals 3. Flexibility in responding to change in project goals <p>Roles</p> <ol style="list-style-type: none"> 4. Team building and delegation 5. Networking skills 6. Tolerance of ambiguity <p>Communication</p> <ol style="list-style-type: none"> 7. Communication skills 8. Interpersonal skills 9. Personal enthusiasm 10. Stimulating and motivating commitment in others <p>Negotiation</p> <ol style="list-style-type: none"> 11. Selling plans and ideas to others 12. Negotiating (resources and conflict resolution) <p>Managing up</p> <ol style="list-style-type: none"> 13. Political awareness 14. Influencing skills 15. ‘Helicopter perspective’ – taking a broader view

Appendix 6: Competency Matrix for Change Agents for Sustainability

Job duties & fields of activity	Subject specific competencies	Methodological competencies	Social competencies	Personal competencies
Identify and develop the Business Case for Sustainability	<ul style="list-style-type: none"> Understand economic terms, definitions, theories, concepts, tools and the differences between traditional and sustainability economics Understand the drivers for corporate sustainability Understand the principles of Sustainable and Social Entrepreneurship 	<ul style="list-style-type: none"> Apply methods of complex problem solving, decision making, systems thinking and forecasting 	<ul style="list-style-type: none"> Ability to identify strategic partner Ability to inspire others 	<ul style="list-style-type: none"> Visionary and anticipatory thinking Courage to challenge the status quo and take unconventional paths
Present attractive solutions to gain top management commitment	<ul style="list-style-type: none"> Anticipate market trends and develop innovative sustainability products and services 	<ul style="list-style-type: none"> Use interdisciplinary work to develop innovative solutions Apply creativity techniques Presentations methods 	<ul style="list-style-type: none"> Ability to inspire others Power of persuasion 	<ul style="list-style-type: none"> Self-confidence Show compassion and engagement Tenacity Frustration tolerance
Participate in strategy development	<ul style="list-style-type: none"> Analyze risk and opportunities and develop sustainable corporate and competitive strategies Identify and structure strategically relevant sustainability issues (climate change, human rights, biodiversity etc.) 	<ul style="list-style-type: none"> Knowledge of analytical, planning and forecasting methods and software tools 	<ul style="list-style-type: none"> Ability to identify strategic partners Ability to inspire others 	<ul style="list-style-type: none"> Visionary thinking Decision-making ability Strong commitment to principles and values Ability to reflect ethical questions
Integrate sustainability aspects into core business and core processes	<ul style="list-style-type: none"> Understand the basic principles and interconnectedness of social, environmental and economic systems Recognise the relevance of ecosystem services and societal embeddedness of corporate success Knowledge of principles of sustainable development Understanding business processes and models Linking CSR to core business Understanding complex supply chain and approaches to improve its sustainability performance 	<ul style="list-style-type: none"> Use interdisciplinary work, methods of systems thinking and collaborative tools for fruitful discussion and innovative solutions 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary and intercultural contexts 	<ul style="list-style-type: none"> Ability for self motivation and self-management Self-confidence Self learning skills Perceived self-efficacy Strong commitment to principles and values Tenacity Critical thinking, ability to reflect ethical questions
Design and direct Sustainability Management Systems	<ul style="list-style-type: none"> Knowledge of relevant standards, requirements and steps to implement and maintain a management system following the Plan-Do-Check-Act cycle 	<ul style="list-style-type: none"> Knowledge of relevant software tools Project management 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary contexts Ability to build teams 	<ul style="list-style-type: none"> Self-confidence Self-learning skills Decision-making ability Tenacity
Conduct sustainability audits	<ul style="list-style-type: none"> Familiarity with standards, framework and sustainability programmes Understanding objectives, auditor's role and steps of internal and external audit 	<ul style="list-style-type: none"> Project management Knowledge of methods to prepare an audit, gather evidence and prepare audit reports 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary contexts Mediate and resolve conflict 	<ul style="list-style-type: none"> Self-confidence Ability to reflect ethical questions Show personal responsibility
Measure sustainability performance	<ul style="list-style-type: none"> Linking monetary and physical, internal and external information Understanding the concept of eco-efficiency Develop relevant sets of indicators 	<ul style="list-style-type: none"> Apply methods and software tools of sustainability accounting 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary contexts 	<ul style="list-style-type: none"> Self learning skills Tenacity
Support managers and teams to improve	<ul style="list-style-type: none"> Knowledge of relevant drivers, concepts and tools for corporate divisions, departments, and functional areas 	<ul style="list-style-type: none"> Use interdisciplinary work, moderation 	<ul style="list-style-type: none"> Ability to inspire and empower other 	<ul style="list-style-type: none"> Show compassion and engagement Visionary thinking

sustainability performance	<ul style="list-style-type: none"> Identify attractive solutions and viable options 	techniques and collaborative tools	<ul style="list-style-type: none"> Empathy and solidarity Ability to build teams and act flexibly as leader and follower 	<ul style="list-style-type: none"> Self-confidence Ability to reflect ethical questions Show responsibility
Networking with various stakeholders	<ul style="list-style-type: none"> Categorize stakeholders and develop adequate stakeholder management strategies Identify win-win situations 	<ul style="list-style-type: none"> Ability to use moderation, conflict solving and negotiation techniques 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary and intercultural contexts Mediate and resolve conflicts Ability to identify strategic partners, develop alliances and act reliably in networks and coalitions 	<ul style="list-style-type: none"> Self-confidence Strong commitment to principles and values Ability to reflect ethical questions Empathy and ability to change perspectives
Communicate sustainability performance credibly	<ul style="list-style-type: none"> Understanding the challenges for credible sustainability communication Knowledge of approaches to reduce asymmetric information Knowledge of communication framework, guidelines and international standards 	<ul style="list-style-type: none"> Presentation methods Information and media literacy 	<ul style="list-style-type: none"> Ability to communicate in interdisciplinary and intercultural contexts Power of persuasion Empathy and solidarity 	<ul style="list-style-type: none"> Strong commitment to principles and values Reflexivity Show responsibility
Key competencies				
<ul style="list-style-type: none"> Strategic competence Systems-thinking competence Anticipatory competence Normative competence Interpersonal competence 				

Source: Hesselbarth and Schaltegger, 2014

Appendix 7: Final Template

Individual Domain

Theme		Sub-theme – Level 1	Sub-theme – Level 2	Description
Skills	Soft skills	Communication	Presenting	Formal presentations
			Framing, persuasive talking , Influencing , rapport	Framing the message in such a way as it is understood by the audience/attractive to various stakeholder. Making connections for the audience. (Internal and external)
			Relating to others	Relating to people at different levels/ in different roles
			Negotiation	Working between competing interests
		Translating	Translating strategy into meaningful action/goals	
		Empowerment	Delegation	Assisting others to take ownership
		Collaboration/cooperation	Team building	Working with others, build relationships
	Networking		Working with others internal and external to the organisation	
		Compromise, diplomacy, tact, political acumen	Reaching a position that is acceptable, understanding different stances and how to deal with them	
	Technical skills	Technical		Environment specific technical skills e.g. auditing
			Analytical	Ability to analyse data
			Project management	
			Time management, prioritising	
	Other	Strategic decision making		Ability to think strategically
			Ability to deal with complexity	

Knowledge & understanding	Subject knowledge	Expert	Knowledge that gives authority
		Qualifications	Formal subject knowledge
		Self development /CPD	Informal subject knowledge, keeping up to date
	Organisational knowledge	Politics	Knowledge about how the organisation works, politics of the organisation
	External political environment		Understanding the political environment external to the organisation
Experience	Expert		Experience that gives authority
	Type		Specific types of experience that are useful
	Career		Experience derived from previous roles
Attributes	Confidence		(linked to expert knowledge)
	Commitment, passion, energy, enthusiasm		To the environment
	Adaptability	Solutions	Able to find other solutions and directions
		Change	Dealing with changing agenda
	Resilience, seek and take advice		Ability to take criticism, ability to seek and take advice, not let things get on top of you
	Tenacity, persistence, determination		Up for the challenge, hold firm to belief, keep working at it
	Honesty, integrity,		Honest in dealings with others
	Bullish		Can be 'hard nosed' if needed
	Self motivation		
Curiosity, insight		To be able to question and innovate	
Behaviours	Visibility		Being seen as the lead
	Strategic decision making		Knowing which battles to fight
	Mindfulness		Being mindful of others
	Lead by example, credibility		Being seen to be doing the right thing, credibility

Self identity	Philosophical position	Private moral position	Personal philosophical position on environmental issues
		Enacted morality	Personal actions linked to environment
		Philosophical alignment	Relationship between personal and professional norms
	Value of stance	Authenticity	The value placed upon holding that philosophical position by self and others
Feelings/motivations	Frustration		Things that present personal frustrations
	Making a difference		Desire to make a difference

Organisational Domain (incorporates external climate)

Theme	Sub-theme – Level 1	Sub-theme – Level 2	Description
Organisational commitment	Status	Level of priority	Status of environmental issues on organisation agenda – priority level, mainstreaming
		Integration	Degree of integration with other policy areas
	Senior level support	Sponsorship	Sponsorship of environmental agenda at senior level
		Structure	Degree of access to senior support
Environmental manager role		Centrality of the role in ensuring environmental action	
Stakeholder influence	Public concern		Degree of public/community concern
	Customer concern		Degree of customer concern
	Parent company		Parent company pressure
	Employee		Employee desire/concern
	Stakeholder partnership		Working with stakeholders to determine action
Sector	Sector predisposition	Competitor/sector performance	Degree to which sector approach influences organisation
	Regulatory pressure		Degree of regulatory control experienced
	Policy /political environment		External policy or political environment within which organisation is operating
Resources	Financial	Priorities	Willingness/ability to allocated financial resources.
		Availability	Availability of funds
Transition			Transition in drivers over time
Reputation			Importance of reputation as an environmental leader
Organisational structure			Overall organisational structure, degree of geographic dispersion

Professional Status

Theme	Sub-theme – Level 1	Sub-theme – Level 2	Description	
Networking	Knowledge		Value of networks generally for knowledge maintenance	
	Support		Value of networks generally for support	
	Sector networking	Knowledge		Value of sector networks for knowledge maintenance
		Competition		Competitor interaction through networking
		Status		Need to be seen to be there – personal and organisational status
	Professional networking	Knowledge		Value of professional networks for knowledge maintenance
		Support		Value of professional networks for support
Expertise			Value of professional networks to bring expertise to the organisation	
	Personal		Personal contacts	
Professional status	Personal value	Professional development	Personal value of professional status of environmental manager	
	Organisational value	Sector	Organisational value of professional status of environmental manager, sector differences	
Role recognition	Visibility		Degree of recognition of the importance of the role (generally rather than as a profession)	
	Personal frustration		Personal feelings about recognition	
Role conflict			Conflict between environmental role and other roles in organisation	

Change Strategies

Theme	Sub-theme – Level 1	Sub-theme – Level 2	Description
Type	Evolutionary		Incremental change
	Revolutionary		Directional change
	Top down		Driven from management downwards
	Bottom up		Emerging from staff upwards
	Reactive		Dealing with things reactively
	Proactive		Making proactive changes
Target	Tangible		Dealing with tangible changes e.g. procedures, schemes
	Intangible		Dealing with cultural change, values
Drivers	Internal		Driver for change internal to the organisation (link to organisation)
	External	Legislation	Driver for change external to the organisation (link to organisation)
		Stakeholders	
		Recognition	
Barriers	Financial		Barriers to change (link to organisation)
Tools	Communication		Communications tool such e.g. presentations, newsletters,
	Management	Training/educating	
		Systems, operating procedures	
	Strategic		KPIs, awards, plan/strategy, evidence – data
	Structural	Governance	formal committee, governance framework, building teams in order to get buy in
		Champions	Use of champions to support action
	Partnership		Using external partnerships to develop/enhance change
Empowerment		Accountability, recognition, reward	
Change model	Project		Change activities envisioned as a project
	Programme		Change activities envisioned as a programme (series of linked projects)
	Core activity		Change activities core to operations

Appendix 8: Template Audit Trail

Stages	Notes
Coding from analysis of transcript 1	Initial <i>A Priori</i> themes converted into themes and two levels of sub-theme under the domains from the conceptual model
Coding changes from analysis of transcript 2	<p>4 additional level 1 sub-themes added to individual domain</p> <p>1 additional level 1 sub-theme added to organisational domain and 1 additional level 2 sub-theme</p> <p>1 additional theme and 1 additional level 1 sub-theme added to professional domain</p> <p>1 additional theme added to change strategies</p>
Coding changes from analysis of transcript 3	<p>3 additional level 1 sub-themes added to individual domain and knowledge theme split into 2 level 1 sub-themes (subject and organisational)</p> <p>1 additional theme added to organisational domain</p> <p>Level 1 sub-theme (Management) split into 2 level 2 sub-themes in change strategies</p>
Coding changes from analysis of transcript 4	<p>1 additional level 1 sub-theme added to individual domain</p> <p>1 new theme added, 1 additional level 1 sub-theme added and 1 additional level 2 sub-theme added to organisational domain</p> <p>2 additional level 2 sub-themes added to professional domain</p> <p>1 additional level 1 sub-theme added to change strategies</p>
Coding changes from analysis of transcript 5	<p>2 additional level 1 sub-themes added to personal domain</p> <p>1 additional level 1 sub-theme added to organisational domain</p> <p>1 additional level 1 sub-theme added to change strategies</p>
Coding changes from analysis of transcript 6	<p>1 additional level 1 sub-theme added to individual domain</p> <p>2 additional level 1 sub-themes added to change strategies</p>
Coding changes from analysis of transcript 7	<p>4 additional level 1 sub-themes and 2 additional level 2 sub-themes added to individual domain</p> <p>1 additional level 2 sub-theme added to professional domain</p>

Stages	Notes
Coding changes from analysis of transcript 8	<p>3 additional level 1 sub-themes and 1 additional level 2 sub-theme added to individual domain</p> <p>1 additional level 1 sub-theme added to organisational domain</p> <p>2 additional level 2 sub-themes added to professional domain</p>
Coding changes from analysis of transcript 9	2 additional level 1 sub-themes added to change strategies
Coding changes from analysis of transcript 10	2 additional level 1 sub-themes added to change strategies
Coding changes, final analysis	<p>Individual domain:</p> <p>Additional level added to clarify skills types (soft, technical, other), 2 level 1 sub-theme moved to level 2 (translating as a sub theme of communication; delegation as a sub theme of empowerment), 1 additional level 1 sub-theme added.</p> <p>Organisational domain:</p> <p>1 level 1 sub-theme removed –not distinct</p> <p>Transition added as a new theme</p> <p>Professional status:</p> <p>Knowledge and support added as level 1 sub-themes in addition to existing level 2</p> <p>3 level 1 sub-theme removed – not distinct</p> <p>Change strategies:</p> <p>2 level 2 sub-themes added to clarify structural sub-theme</p> <p>1 level additional level 1 sub-theme added</p> <p>1 theme removed – not distinct</p>

Appendix 9: Participant Profiles

Participant 1

Participant 1 holds the role of Environmental Manager in a regional branch of a privately owned subsidiary of a multi-national company. The subsidiary operates nationally in the environmental service sector. The sector is heavily regulated and thus legislation is the primary driver for environmental action alongside public concern:

"I would say we are primarily legislation driven, that is the key focus for a lot of what we do."

The company as a whole has a "sustainability road map of key objectives" which provides direction for local action. However, buy in at the local level is not always present...

"...it is very difficult I think for the lower levels of site staff to understand the concept of sustainability and what we are trying to do as a business as a business unit, but also in the wider context of what the parent company wants as well because they just don't see the importance of it really."

with the result that a top down approach to environmental management prevails.

"Like I say, if you don't get the sign off and agreement from the top management it's just a constant battle."

There is also a sense that, at the subsidiary level at least, the environmental agenda still lacks full integration into wider business strategy.

"I need to be involved in those sorts of decisions and not key-holed into this "oh well it's not environment so they don't need to know about it"."

Participant 2

Participant 2 is Head of Environmental Management in a large regionally based public sector organisation in the health care sector. Environmental action is in its infancy within the organisation and not yet fully embedded in business strategy.

"...we've got a board-level link but I definitely wouldn't say the sustainability and environmental improvements is, you know, engrained throughout the organisation. Not at all."

At the moment the environmental agenda is implemented via a bottom up approach with a strong network of environmental champions. The Environmental Manager is the key driver for action.

“If I was honest, if I went under a bus tomorrow, my organisations’ sustainability drive would dry up probably, if I’m being brutally honest. Definitely.”

Legislation and sector level guidance are identified as key drivers for action. Resource constraints are identified as both a potential positive and a negative influence while political drivers are viewed on the whole as a barrier to action.

“But you’re still at the mercy of what the political will and aim is.”

Participant 3

Participant 3 is the Safety Quality and Environmental Manager in a small, local company operating in the service sector. A systems based approach to environmental management is taken with activity controlled by the company’s ISO14001 certified management system. Certification was considered by senior management to be important in promoting the company’s environmental credentials in the absence of strong external drivers for action.

“... the driver was to be seen to be promoting good practice across the organisation.”

However, the level to which the environmental agenda is fully embedded in business strategy is questionable.

“If I wasn’t here, would they do it? I don’t know. Possibly not.”

Responsibility for driving the agenda rests with the SQE Manager but with CEO backing:

“I think it rests entirely with me.”

“I don’t answer to anyone else, just the CEO. If she thinks it’s a good idea, then she’ll say “Get on with it. See what happens”.”

Cost is identified as the key barrier to action.

Participant 4

Participant 4 works as Environmental Manager in a regionally based public sector organisation operating in the health care sector. Although environmental issues have been on the

organisational agenda for a few years, there has been little strategic action until very recently with the appointment of the participant as the organisation's first Environmental Manager.

"...although the ethos of sustainability and environmental management was actually already embedded into the organisation, it was more of lip service." " ... there wasn't really any action."

The approach to date has been top down with strong support from senior management.

"... the senior management team are totally on board with it and want to see more and more and more."

The need for bottom up engagement has also been noted but engagement has been slower.

"But I am slowly getting there and trying to kind of change hearts and minds, and I've got quite a few champions now but I think it is a, it's gonna be a long haul."

A number of drivers for engagement are identified including legislation, competitive edge, public opinion and reputation, the latter point being reinforced by the organisations governance structure.

"...on our governance Board, we have non-executive directors and kind of governors from around our geographical area, and they're keen that actually we are seen to be doing kind of morally and environmentally the right thing."

Participant 5

Participant 5 is Sustainability Manager for the UK branch of a multi-national manufacturing company. A global business level vision provides the framework for environmental sustainability which is embedded into the business model.

"So we see it as being, you know, a core business driver and we look very much to the real long-term impact that we're having..."

"...it's just the way we do things."

Stakeholder engagement has a key role to play in developing and delivering the company's approach to environmental sustainability.

"...we have a strong corporate governance model from environmental sustainability perspective it's not just involving some of our senior managers, it also involves a number of external interested parties, experts, stakeholders from a range of different backgrounds. And again, some of those, you know, have been intentionally selected to come from quite challenging backgrounds, again to really help challenge and shape our approach going forward."

Environmental issues are managed alongside health and safety by a team of staff. However, ownership of the agenda is not exclusive to that group.

“...the financial controllers are starting to take on much more interest now that they can see the real benefits ...” “... we see it with the quality teams, we see it with the HR teams now as well, so it’s starting to evolve, but on a much more kind of shared and inclusive basis.”

Although the global vision acts as a key driver for local action, customer and consumer interests, legislation and funding also play an important role.

Participant 6

Participant 6 holds a specialist environmental management role in a local authority leading a team focused on carbon and energy management. Action is driven from the top in a very politicised structure.

“...when the cabinet makes that decision, that’s got to happen, then that’s what we as officers do, we implement that decision.” “We are very much, as you know, a very political borough.”

Statutory responsibilities and national policy drive a lot of action, as does public accountability. Longer term strategy can be hampered by short term political cycles.

“...We’ve always been working in short-term cycles. Because although we can have a long-term cap or plan, you know that the big decisions are planned around when the next general election is.” “... in some respects, it kind of makes it difficult for some of your, longer-term environmental aspirations.”

Beyond statutory responsibility, environmental issues are seen to be embedded to some degree in the ethos of the organisation but need constant reinforcement from environmental specialists.

“...but I think if we went away... If you get rid of us, you know, they’ll just go back to where they were a few years ago.”

Participant 7

Participant 7 at the point of interview had just retired from a role as Head of Sustainability at a large UK owned multinational company that operates globally in the defence industry. A number of technical managers operating in each country have local responsibility for

environmental issues. The company have adopted a strategy of providing a global governance structure in which national variations can be accommodated.

Compliance and reputation are major drivers for the company's engagement with the environmental agenda.

"... there are businesses, business of a certain size who are quoted on certain indices and the certain market places...where a company of a certain size is expected 1) to be there and 2) to be scoring reasonably. And if you're not, the market or those enquiring about 'Should you invest in this company – yes or no?' ask serious questions."

Participant 8

Participant 8 also holds the role of Sustainability Officer for a global company, this time in the insurance sector. In addition, the company has a number of Safety, Health and Environment Managers operating in each country. The nature of the company's activities means they are largely office based and so its activities are considered to be *"relatively low-risk environmentally"*. Customers provide the key drive for action by the company.

"...customer satisfaction is actually our number one concern, so I would say our customers are our biggest driver because of the sector we operate in".

Although sustainability is seen to be at the core of what the company does, it still competes with other agendas and is not fully embedded.

"We say that we have sustainability at our core, but as an example of a conflict, other departments like the marketing department communicate a message internally that we have customer service at our core."

"This is a vision, we're not saying it's there, it's where we want to be and we're not there yet."

Participant 9

Participant 9 is the Environment Manager for one of the UK manufacturing sites of a global company. Corporate targets provide some direction for environmental action on site but legislation and cost are the main drivers. There is little customer concern.

"...where the company are saying 'We want zero waste to landfill', I guess from a mill perspective ...that is probably less a driver than the cost..."

Environmental issues are not embedded in the ethos of the site with action having to be driven by the environmental manager.

“But if I go to an area and try to make a change, I’m expected to make it. But it’s like, ‘Well how can I make it when I don’t have a team?’ I’m the environment department, there’s no one else.”

As well as being a driver, cost is also identified as a barrier to action.

Participant 10

Participant 10 is the Safety, Health and Environmental Manager for UK manufacturing, logistics and retail business. Environmental issues have not been high on the company agenda until recent years but are growing in prominence.

“...it doesn’t sit top of the agenda, there’s other things that are, or short-term gains that sort of overtake environmental management. However, over the last few years we have concentrated very hard on carbon reduction.”

Social responsibility is considered part of the ethos of the company and environmental responsibility a part of this.

“... it’s a bit of a glib statement I suppose, but it is really part of the values of being part of the business. So it is just part of our culture. And the environmental part of that will sit to some degree within there.”

Legislation, and public and customer perception are seen as important drivers for action.

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