Exploring How to Manage Supply Chain Relationships for Sustainability: An Action Research Project with PepsiCo and their Agricultural Suppliers in the UK

Anne Claire Louise TOUBOULIC

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DECLARATION

This work has not previously been accepted in substance for any degree and is not concurrently submitted in candidature for any degree.

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This thesis is the result of my own independent work/investigation, except where otherwise stated.

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Abstract

This thesis is the result of the work conducted in collaboration with PepsiCo UK and their UK based growers between October 2010 and October 2013. The research project has been funded by an ESRC-CASE studentship and has provided the opportunity to explore the relationships between PepsiCo, as a large customer, and their small agricultural suppliers on their journey to address the sustainability challenge.

The research is framed within the field of sustainable supply chain management (SSCM), which can be defined as the integration and coordination of economic, environmental and social goals in the management of inter-organisational business processes (Carter & Rogers, 2008). Although there has been a growing amount of research in the field in the last decade, little research has offered insights into the actual implementation process of sustainability practices in supply chains (SC). This research addresses the qualitative knowledge gap around the relationship aspects of implementing SSC practices, and particularly relationships between a large buyer and small suppliers.

The research adopts an Action Research (AR) approach; drawing on a variety of empirical methods, in an attempt to both contribute to academic knowledge and to address the practical concerns of the research participants. The thesis presents the process and outcomes of this AR project that has revolved around several emergent cycles of inquiry.

The findings of this research offer a complementary perspective between inter-organisational governance dynamics for sustainability and the critical role of individual stakeholders in the change towards more sustainable practices in the SC. This is helpful in moving towards a more multilevel understanding of SSCM. The practical contribution of the research aims at supporting the development of better management practices for the implementation of sustainability practices in a supply chain involving a large buyer and SME suppliers.

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Glossary

3BL – Triple Bottom Line
ABS – Association of Business Schools
AOM – Academy of Management
AR – Action Research
CEO – Chief Executive Officer
CFI – Cool Farm Institute
CFT – Cool Farm Tool
CSR – Corporate Social Responsibility
DEFRA – Department for Food and Rural Affairs (UK)
EMS – Environmental Management System
EREBUS – Engaging Research for Business Transformation
ESRC – Economic and Social Research Council
FEC – Food Ethics Council
FISS – Food Industry Sustainability Strategy
GHG – Greenhouse gases
IFPSM – International Federation of Purchasing and Supply Management
IIED – International Institute for Environment and Development
IPSERA – International Purchasing and Supply Education and Research Association
IT – Institutional Theory
LCA – Life Cycle Analysis
MNC – Multinational Company
N-RBV – Natural Resource-Based View
OM – Operations Management
RBV – Resource-Based View
RDT – Resource Dependence Theory
SAI – Sustainable Agriculture Initiative
SC – Supply Chain
SFL – Sustainable Food Lab
SME – Small and Medium Size Enterprises
SSC – Sustainable Supply Chain
SSCM - Sustainable Supply Chain Management
SSFF – the Strategy for Sustainable Food and Farming
ST – Stakeholder Theory
TCE – Transaction Cost Economics
TCT –Transaction Cost Theory
UK – United Kingdom

Chapter 1 – Introduction

When most people consider 'sustainability', they tend to think first of environmental problems related to climate change, pollution, deforestation or species loss. This apparently places it in the realms of environmental science and of environmental scientists. Yet in reality there is no such thing as an 'environmental problem'. The environment does not have problems; it just is. It is society that has problems due to the unsustainable interaction between our social, economic and technological systems and the physical environment.

Peattie K. (2011: 21)

As this thesis is being written, some of the hottest international news include the publication of the Intergovernmental Panel on Climate Change's latest report, the U.S. shutdown affecting the work of the Environmental Protection Agency, the fast declining health of oceans due to poor fishing practices and pollution, the impact of Russia's Arctic oil and gas exploration mission on wildlife, the aftermath of the garment factory fire in Bangladesh… and the list goes on. This snapshot of current happenings and debates in the world reveals three critical points: 1) the variety and extent of issues encompassed under the 'sustainability' umbrella, 2) their intrinsic social nature and therefore the fact that sustainability is a phenomenon that requires systemic understanding, 3) the overwhelming and undeniable urgency to act.

Some have argued that there is probably no better context to write an academic piece of work on sustainability, as the value of the work need not be defended. Quite frankly it makes it feel like a drop in the ocean. But this is essentially a question of scope. Scope of the challenges we are facing as our

unsustainable relationship with our natural environment become obvious. Scope of individual research projects we carry out within this realm, attempting to address corners of this global issue. There is an old adage that says that there is no such thing as small change. In addressing the question of scope in this research, one must be careful about not misleading the reader into thinking that the outcomes of the work undertaken are greater than they actually are. But on the other hand, the value of the research conducted for those involved in it must not be underestimated either. It is all about fine-tuning. Researching sustainability is ultimately about being "able to appreciate the larger puzzle picture and the contribution of the particular puzzle piece that (one's) own research findings represent" (Peattie, 2011: 31).

With this in mind, this introductory chapter is about defining the scope of this thesis by offering a number of initial clarifications about its purpose, practical and conceptual context, and methodological approach. The final part of this chapter provides a rationale and guide to the reader to the structure and flow of the thesis.

1.1 Overview of the research project

The research project discussed in this thesis was initiated as part of the UK Economic and Social Research Council (ESRC) EREBUS scheme, which aims at providing funding to facilitate the collaboration between researchers and organisations on questions related to change and/or innovation. EREBUS actually stands for Engaging Research for Business transformation. As noted later during the research by one of the participants, *Erebus* is also a mythological reference to the place through which the dead would transit. It remains questionable whether this was an intended double entendre by the ESRC. However it certainly makes for a playful metaphor when discussing organisational change, thesis writing or simply the

process of conducting research. Anyway. Further details about the EREBUS scheme are provided in the box below.

ESRC *EREBUS*: Engaging Research for Business Transformation

In an era of increasing competition, organisations need to be continually innovative and transform their business. Effective knowledge transfer can help such transformation, leading to increased employment, productivity and profitability.

The principles that underpin EREBUS are to:

- **Enhance the region's capability** for wealth creation through transforming businesses, transforming research, transforming researchers and transforming Higher Education Institutions (HEIs)
- **Partner with forward thinking businesses** who are aiming to transform their practice through innovative thinking
- **Strengthen business engagement** and research capability among researchers
- **Undertake world-class research** and knowledge co-production to promote innovative business transformation
- **Promote a culture of trust**, ethical behaviour, openness and innovation throughout its community so that all members may benefit from best practice in business engagement.

EREBUS promotes collaborative opportunities through a variety of awards. CollAborative StudEntships (CASE) fund a student to study for a PhD whilst working with a collaborating non-university organisation.

(The above information is taken from the EREBUS webpage at: http://www1.aston.ac.uk/aston-business-school/research/impact/erebus/).

A CASE award, which has offered the opportunity to engage with PepsiCo UK and their UK based agricultural growers in potatoes, oats and apples, funds this research project and . The Sustainable Procurement and Sustainable Agriculture managers at PepsiCo initiated the project as their business had already been involved in sustainability for quite some time and had started a number of initiatives to drive

the sustainability agenda to UK farmers in their supply chains. Through this collaboration, they were keen to develop a better understanding of the relational aspects of pursuing sustainable supply chain management and to identify drivers and barriers to success. The research was set-up to span a three-year timeframe, which would lead to not only practical outcomes but also to a PhD. The practical context of the research is described in more depth in Chapter 2.

1.2 Conceptual background

Although the research started with a strong input from practice, it is grounded in the growing field of research on sustainable supply chain management (SSCM). SSCM has received increased attention from academics and practitioners in recent years. Supply networks embody the entanglement of the interests of multiple stakeholders and are a key dimension of business operations and broader strategy. The proactive management of sustainability in the supply chain recognizes the strategic importance of supply chains in achieving long-term social, economic and environmental value (Hall & Matos, 2010; Brammer, Hoejmose, & Millington, 2011).

There is no consensus on the definition of SSCM (Krause, Vachon, & Klassen, 2009) and there exist many different angles though which to study it and contribute to the growing body of research. Actually the varied terminology that fits under the umbrella of SSCM is a good indicator of this lack of consensus. The issues encompassed in SSCM vary across industries and sectors and authors have expressed the difficulty to develop an overarching SSCM framework (Pullman, Maloni, & Carter, 2009). SSCM research to date has helped develop our understanding of the triggers and enablers of SSCM (e.g. Walker, Di Sisto, & McBain, 2008b), of its

relation to performance and risk management (e.g. Foerstl et al., 2010), and of relations between companies in the SC (Vachon & Klassen, 2008).

In recent years, a number of literature reviews of SSCM have been published (e.g. Carter & Rogers, 2008; Seuring & Müller, 2008; Carter & Easton, 2011; Ashby, Leat, & Hudson-Smith, 2012), offering useful summaries of what has been done in the field and of where future research opportunities lie. This growing number of reviews also supports the point made earlier that the field is gaining in importance. An important contribution of the literature reviews has been to propose some comprehensive and robust definitions. For instance, Carter and Rogers (2008: 368) define SSCM as 'the strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual company and its supply chains'. In turn, Seuring and Muller (2008: 1700) define SSCM as 'the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account which are derived from customer and stakeholder requirements.'

Both these definitions emphasise a triple bottom line view of performance or value creation and the criticality of the relationship between organisations in the supply chains to achieve sustainability. SC relationships have been viewed as a crucial determinant of an organisation's ability to adapt and respond to change, in particular with regard to sustainability (Hoyt & Huq, 2000; Brammer, Hoejmose, & Millington, 2012). Much effort in the literature has been paid to identifying relationship practices that influence and enable SSCM, for instance when

considering risk management (Foerstl et al., 2010) or the adoption of environmental technologies (Vachon, 2007). It is actually possible to build a list of the relationship factors that enable or on the contrary hinder the implementation of SSCM (e.g. Walker, Di Sisto, & McBain, 2008a; Gimenez & Tachizawa, 2012). Many studies have actually considered the link between certain types of relational practices with suppliers and sustainability performance. Some examples include the work of Vachon and Klassen (2003; 2006b, c; Vachon & Klassen, 2008) exploring the role of partnership and SC integration in the adoption of environmental SC practices and the work of Cheng et al. (2008) looking at the role of trust and knowledge sharing in green SC. Paulraj (2011) has even conceptualised SSCM as key relational capability.

Arguably, SSCM research to date has primarily focussed on exploring the "what" of SSCM practice rather than the "how" (Pagell & Shevchenko, 2014). In this sense, there is a knowledge gap around the actual implementation of practices on the ground (van Bommel, 2011). The predominance of a content rather than processual approach (Basu & Palazzo, 2008) to the implementation of sustainability in SCs means that more needs to be done to actually understand how organisations work together and how SSCM, as a radical transformation of business practices (Pagell & Shevchenko, 2014), unfolds. This research fits within this gap by investigating how sustainable business practices in the supply chain can be facilitated through the interactions between a large buyer and its suppliers.

1.3 Action research

Building on the argument that little research has provided qualitative insights into the actual implementation of SSCM, it is also possible to note that much SSCM research remains backward looking (Pagell & Shevchenko, 2014). In other words,

most studies have reported on past SSCM practices or achievements rather than led the development of such practices. In their critical article, Pagell and Shevchenko (2014) call for more participatory/action research to remediate to this problem. In this sense, the work presented in this thesis makes a topical contribution.

This research adopts a longitudinal participative approach as a way of developing both academic and practical knowledge by bringing people together to explore issues and work towards solutions through all stakeholders' involvement. This participatory orientation aims to facilitate interaction between the different stakeholders and leave room for them to express their perspective on how to drive sustainability in the supply chain. Participative research such as this involves the researcher in a facilitative role, for instance when opening a conversation space in workshops. There was a clear desire from PepsiCo to see the researcher help things change. This represents a relatively rare opportunity to be in contact with relevant stakeholders and be able to follow the implementation and evolution of the projects and relationships in real time and not retrospectively.

Action research (AR) as practiced and reported in this thesis draws primarily on the work of Reason and Bradbury (Bradbury & Lichtenstein, 2000; Reason & Bradbury, 2008) and pragmatist approaches to social science research, striving for *usefulness* (Gibbons et al., 1994; Flyvbjerg, 2001; Fendt, Kaminska-Labbé, & Sachs, 2008). Hence the research process has been characterised by a constant to-and-fro between practical and theoretical phases. In action research terms, the process is composed of multiple cycles of inquiry each involving phases of planning, engagement and reflection (Coughlan & Coghlan, 2002; Reason & Bradbury, 2008). This thesis is a result of the multiple cycles of inquiry that have taken place during the course of this research. The research process has been emergent and open, which

means that although the broad focus had been set at the beginning, research questions and outcomes have emerged and evolved with time and in the light of findings (Chisholm & Elden, 1993).

While the overarching aim, guiding the overall research, was to provide a way to improve the relationship between PepsiCo and its suppliers, specific aspects of relational dynamics of sustainable supply chains (SSC) have been explored through the research. Data or evidence to answer the research questions has been collected throughout the process and gathered for analysis. The analysis was conducted iteratively, with a multilevel picture of sustainable supply chain relationships emerging as the research progressed. Metaphorically speaking, the AR process is similar to a Russian doll, made out of multiple layers neatly fitting within and complementing one another. And when you start opening the first layer, you are not sure of how many more lie underneath.

Although the question of quality is explored in details in subsequent parts of the thesis, it is important to note already that the quality criteria for AR differs from that of more traditional research approaches. To a certain extent, traditional quantitative and qualitative research seek to create knowledge by answering or testing a set of questions and hypotheses by means of a well-designed study. The quality of such types of research can be judged against some version of the criteria of rigour and relevance (Pettigrew, 2001; Van de Ven & Johnson, 2006). There are distinctive features to AR, which imply a different approach to quality. Namely these features are:

- An emergent research process, not as controllable and controlled
- Knowledge being sought as much for the research participants as for the wider academic community

- Multiple voices are addressed
- Research in real time with awareness of the past and intentionality for the future

An accurate account of how quality in AR may be framed can be found in the work of Chandler and Torbet (2003: 147):

"We propose that quality in action research (and in all social science, once we understand action research as ubiquitous) increases: first, to the degree that the research clearly differentiates and integrates subjective (first-person), inter-subjective (second-person) and objective (third-person) voices; and second, to the degree that the research clearly differentiates and integrates past (t_1), present (t_2) and future (t_3) temporal dimensions."

1.4 What is different about this work: Research questions

The participative research project with PepsiCo and their growers provides an opportunity to get unique insights in the processes of SSCM as embedded in their context and is a platform to address the practical issues faced by both buyers and suppliers. The research sought to develop a greater understanding of inter-organisational and interpersonal dynamics in the implementation of sustainability while acting as dialogue facilitator between the different parties. As such the product and the process of the research became interwoven (Lüsher & Lewis, 2008). Consequently the contributions of this research lie both within the nature of the insights provided, their practical use and theoretical relevance, and the way in which the research was conducted.

Providing a useful and academically relevant answer to the problem faced by PepsiCo in their transition towards sustainable SCs has meant engaging in multiple

cycles of inquiry as described in section 1.3. These cycles form the core of this thesis and have sought to address different dimensions of the question of SC relationships for sustainability. A summary of the cycles and the research questions they respectively address is presented in the table below. The way in which the questions have emerged and fit with the research problem will be discussed in subsequent chapters. Table 1 serves as a summary of the topics that will be covered in this work and the contributions to expect from the thesis.

Table 1. Research questions addressed in the thesis

Overall Research Question answered in Chapter 9	Cycles of inquiry	Sub-research questions	Chapters where answered
RQG. *How can SSCM be facilitated through the relationships between a large customer and its small suppliers?*	I. Framing conceptual fit and contribution of the thesis	RQ1. How can SSCM be defined and how is it different? RQ1a. What are the definitions of SSCM used in current literature? RQ1b. What are the key characteristics of SSCM emerging from these definitions? RQ2.What are the dominant theories currently used in the field of SSCM? RQ3. How have they influenced the conceptualisation of SSCM? RQ4. What are the promising avenues for the future development of SSCM and implications for the thesis?	Chapter 3
	II. Understanding the relationships between PepsiCo and the growers on sustainability	RQ5. How does a large buyer like PepsiCo work with its small suppliers to implement sustainable SC practices? RQ5a. How collaborative is the relationship on sustainability between PepsiCo and its suppliers? RQ5b. How does power influence the management of sustainability practices between PepsiCo and its suppliers?	Chapter 5
	III. Exploring the role of individuals in SSCM	RQ6 In what ways can SC stakeholders build a shared vision of what sustainable SC relationships should look like? RQ6a. How do SC stakeholders make sense of the change needed for sustainability? RQ6b. How do stakeholders' meanings and sensemaking processes affect the development and implementation of sustainability practices in the SC? RQ6c. How might the participative workshops support sensemaking for sustainability and provide the means to build the momentum for change between the SC actors?	Chapter 6
	IV. Analysing the work on SSCM in this thesis from a change agency perspective	RQ7. How do individuals contribute to the change towards more sustainable practices in the SC?	Chapter 7

1.5 Thesis structure: A Roadmap

While it is customary to format a PhD thesis in a linear fashion, starting by a discovery of the problem (or gaps) in the literature leading on to the methodology, findings and discussion, I have questioned the appropriateness of this format to my work. As an action researcher, I have certainly been engaged at two core levels: alongside a company and as a PhD student attempting to complete an academic piece of work. However, coming to the end of the PhD journey means having to make decisions about the format in which to render the work of three years.

In AR, the question of presentational form is essentially an epistemological one. Heron and Reason (1997) have shown that AR sets out an extended epistemology composed of multiple ways of knowing the world. These multiple ways of knowing, detailed in the table below, are inter-connected.

Table 2. Extended epistemology in AR (adapted from Reason & Bradbury, 2006)

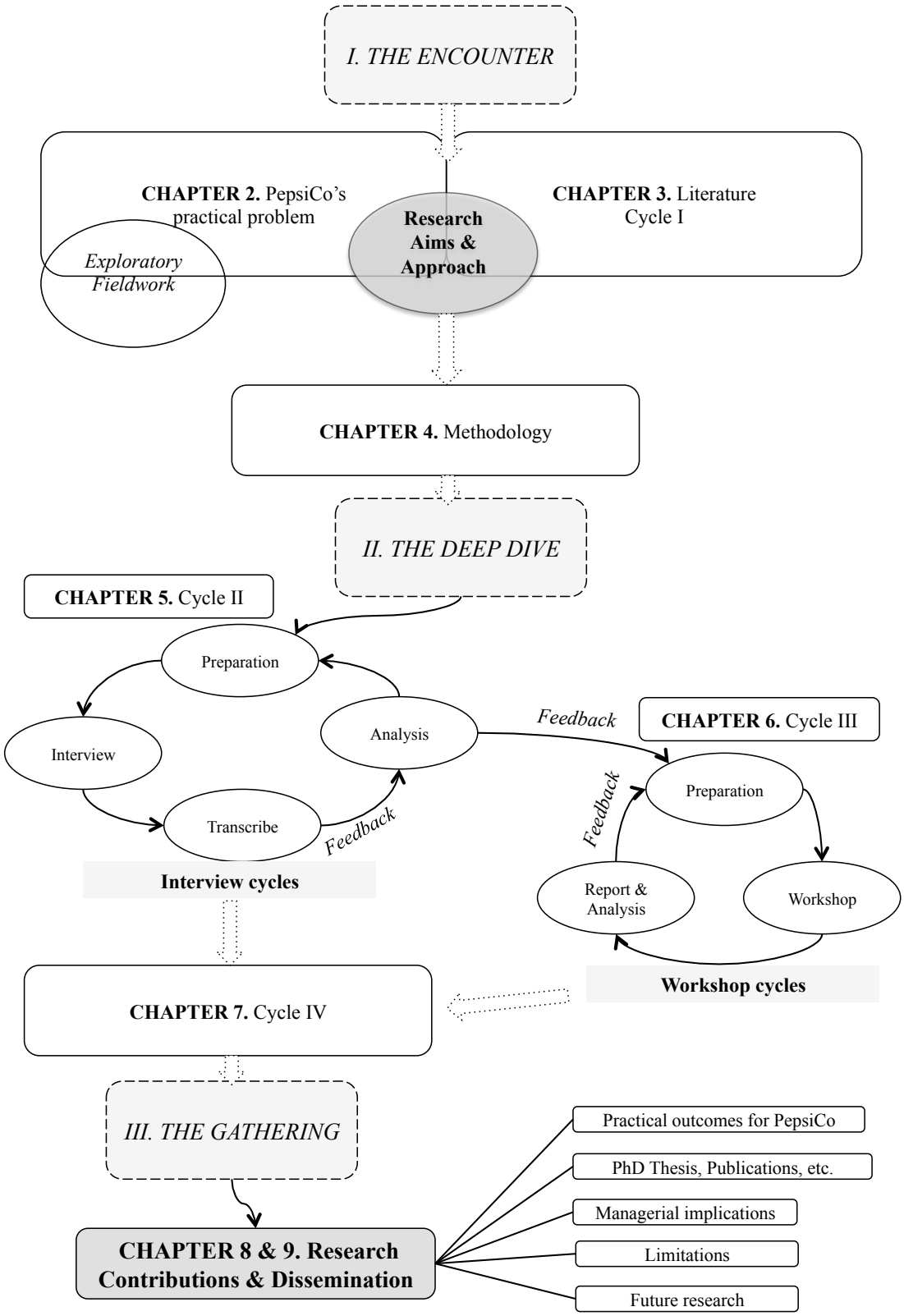
Experiential knowing	Emerges from the direct encounter or experience with the world. It is mainly perceptual and resonant and hard to translate verbally.
Presentational knowing	The expression of knowledge through different forms of representation (drawing, music, writing…)
Propositional knowing	Knowledge on a more conceptual and abstract level, with for instance theoretical developments.
Practical knowing	This is about doing and know-how.

Enacting this extended epistemology is actually quite challenging and often remains more of an aspiration. The challenge is particularly graspable when considering the primacy traditionally given to propositional knowing in academic environments. Presentational knowing specifically embodied by the act of writing AR has received attention from a number of authors in the field (e.g. Zuber-Skerritt & Perry, 2002; Davies, 2004; Marshall, 2008). Marshall (2008) is particularly critical of established conventions in academic writing, where linearity, rationality,

neutrality and de-contextualisation tend to prevail. She argues that 'finding form requires bypassing the censors, accrediting your right to write, identifying and dismissing internalized notions of 'standards', which are inviting your conformity or subduing your voice' (Marshall, 2008: 684). Advocating 'analogic appropriateness', she encourages finding some level of congruence between form and content.

In this quest to do justice to the research process, I have conceived my research story in three acts, which illustrate the key phases experienced as part of the research process depicted in the figure below and encompassing parts that are usually common to any PhDs (for e.g. literature, methods, etc.). The three-act structure is common in playwriting and storytelling, and generally follows the simple logic of before, during and after the action (Lavandier, 2005). This choice of presentation seemed fitting to the thematic contribution of this research on developing relationships for sustainability. Indeed, it is actually possible to conceive relationship development around three core moments: meeting, falling in love and settling down.

Figure 1. Thesis roadmap (Source: Author)



In this format I hope to be able to bring together the multilevel perspective of SSC relationships that has emerged through this work, drawing from both literature and empirical elements. This structure also allows revealing that literature permeates all phases of the research and that engagement in the field can be analysed at multiple levels. Part I “The Encounter” is a representation of the framing phase of the research, while Part II “The Deep Dive” accounts for the phase when the research became more participative, with a deeper involvement of the researcher. Part III “The Gathering”, as illustrated in the figure, might be more representative of the thesis writing stage, which necessitates a complete view of the overall process, i.e. putting together all the pieces of the puzzle. It is ultimately a reflective phase.

Overall, this chapter has outlined the context of this research project and introduced its primary aim. It has hopefully set the tone for the rest of the thesis. The next chapter provides a more fully developed account of the conceptual and practical contexts of the research, which have supported the development of the overarching research question.

I. The Encounter

It was then that the fox appeared.

“Good morning” said the fox.

“Good morning,” the little prince responded politely, although when he turned around he saw nothing.

“I am right here,” the voice said, “under the apple tree.”

“Who are you?” asked the little prince, and added, “You are very pretty to look at.”

“I am a fox,” the fox said.

“Come and play with me,” proposed the little prince. “I am so unhappy.”

“I cannot play with you,” the fox said. “I am not tamed.”

“Ah! Please excuse me,” said the little prince.

But, after some thought, he added:

“What does that mean – ‘tame’?”

“You do not live here,” said the fox. “What is it that you are looking for?”

“I am looking for men,” said the little prince. “What does that mean – ‘tame’?”

“Men,” said the fox. “They have guns, and they hunt. It is very disturbing. They also raise chickens. These are their only interests. Are you looking for chickens?”

“No,” said the little prince. “I am looking for friends. What does that mean—‘tame’?”

“It is an act too often neglected,” said the fox. “It means to establish ties.”

“’To establish ties’?”

“Just that,” said the fox. “To me, you are still nothing more than a little boy who is just like a hundred thousand other little boys. And I have no need of you. And you, on your part, have no need of me. To you, I am nothing more than a fox like a hundred thousand other foxes. But if you tame me, then we shall need each other. To me, you will be unique in all the world. To you, I shall be unique in all the world…”

Antoine de Saint-Exupéry

The Little Prince (1943), Extract from Chapter 21

Chapter 2 – Framing the practical problem

2.1 Introduction

2.1.1 Objectives

As the first part of the Encounter, this chapter seeks to set out the scene for the remainder of this thesis. This chapter describes the practical context and issues that constituted the initial setting of this research project. This is essentially the entry and framing stage of the action research project. As described in Chapter 1, the project has been funded by an ESRC *EREBUS Case* studentship, which has offered the opportunity to collaborate and engage with PepsiCo UK and their UK based agricultural growers in potatoes, oats and apples. As the practical context and problem precluded the research design of the main cycles of inquiry, it was decided to include this chapter before the discussion of the broader conceptual background. Obviously, this does not imply that there was no awareness of the literature prior to engaging with the practical context. However as the research was initiated from practice, it seems fair to do justice to the process through which the problem addressed in this thesis has emerged rather than artificially construct the problem from the literature. The role of the literature has been to refine the questions explored in the thesis and ensure the conceptual grounding of this work. The chapter's objectives are to:

a. Discuss the broader practice and policy context in which the research is framed
b. Describe in details the specific problem faced by PepsiCo
c. Present the insights from the early interviews and meetings that served to clarify the goals of the research

2.1.2 Structure of the chapter

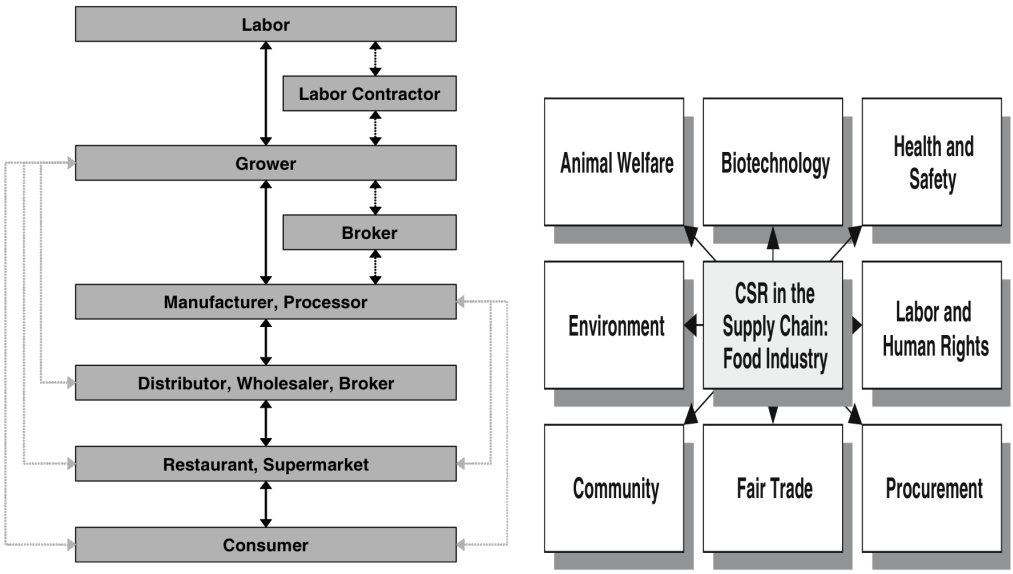
The chapter starts by exploring the question of sustainability in food supply chains and giving some insights into UK policy and public landscape on the issue. The second section provides more details about the practical problem that PepsiCo UK was keen to address through this collaborative research. Findings from exploratory interviews are discussed in the last part of this chapter. Although methodological aspects have not yet been discussed, the findings from the initial contacts with the practical context are presented in this chapter as they have supported the development of the research question that has guided the rest of the thesis.

2.2 Sustainability in food supply chains

2.2.1 Overview

Food supply chains are particularly critical with regards to sustainable development as they are embedded within distinctive social, economic and environmental processes (Thompson & Scoones, 2009). Studies have shown that there are distinctive CSR issues arising within the food industry, which is highly exposed to public criticism (Maloni & Brown, 2006; van der Vorst, Tromp, & Zee, 2009) and present higher risks in its supply chain especially with regards to agricultural sustainability (Hamprecht et al., 2005). At industry level there is evidence that the economic dimension remains the dominant concern regarding sustainability, despite the critical importance of social capital and environmental issues in food chains (Vasileiou & Morris, 2006).

Figure 2. Structure of the food supply chain and its distinctive CSR issues (Source: Maloni & Brown, 2006)



Food SCs are often characterized by an imbalanced distribution of power (Hingley, 2005; Hingley & Lindgreen, 2010). The sector is dominated by a relatively small number of large companies that exert a comparatively large control over the trade, production, and consumption of food and agricultural commodities (Henson & Humphrey, 2010), which has been coined "buyer-driven (-ness)" (Gereffi, 1994). At the individual SC level, this means a power advantage for the "large" focal buyer, for example, food manufacturer or supermarket (Fearne, Duffy, & Hornibrook, 2005; Hingley & Lindgreen, 2010).

The power dynamics of food SCs have major implications on how sustainability practices are implemented and managed between SC members (Hingley, 2005). Food SCs are particularly critical with regard to sustainable development because of their distinctive social, economic, and environmental settings—for example, rural livelihoods, food security, and land use (Maloni & Brown, 2006; Pullman, Maloni, & Carter, 2009; Thompson & Scoones, 2009). The

food industry presents higher risks in the SC related to agricultural sustainability (Hamprecht et al., 2005), accounts for a large number of sustainability standards (Tallontire, 2007; Henson & Humphrey, 2008), and is highly exposed to public criticism (Maloni & Brown, 2006). Companies have addressed these CSR issues by developing standards, certifications, or sustainability programs and defining new modes of governance of the production process (Henson & Humphrey, 2008). The sharing of the costs and performance gains of these sustainability practices is likely to be impacted by the power imbalances characterizing food SCs (Cox, Chicksand, & Palmer, 2007; Pullman, Maloni, & Carter, 2009).

2.2.2 Sustainable food and farming in the UK

Although this section is only a brief overview of some relevant government documents, it shows that sustainability is part and parcel of the UK government's policy and strategy.

Because of its broader societal impact, food production and consumption is clearly a sensitive domain in terms of public interest and government policy. As well as government bodies such as the Department for Environment, Food and Rural Affairs (DEFRA), several organisations and initiatives work on these issues and provide useful guidance regarding the question of sustainable food chains. Some examples include the Soil Association, the International Institute for Environment and Development (IIED) and the Food Ethics Council (FEC).

The Strategy for Sustainable Food and Farming (SSFF) report published in 2002 (DEFRA, 2002) set out the UK Government's strategy to achieve sustainable food and farming around five priorities: market success, improvement of farming environmental performance, sustainable consumption and production, impact of

climatic change on agriculture, and animal health and welfare. A subsequent report was published in 2006 (DEFRA, 2006b) as a way to assess the achievement since the SSFF and articulate new targets. Both these reports specifically highlight the importance of strengthening the links between the different parts of the food supply chain, and the critical role that has to be played by the farming community. The 2006 Food Industry Sustainability Strategy (FISS) report (DEFRA, 2006a) provided more details on the theme of sustainable consumption and production. It specifically describes the triple bottom line challenges that organisations in the food chain need to address and the necessity to promote partnerships and collaboration in this context.

More recently, in 2011, the UK government's Foresight unit published a report on The Future of Food and Farming (Foresight, 2011), in which they identify five key challenges for global food systems in the horizon 2050: balancing future demand and supply sustainably; addressing the threat of future volatility in the food system; ending hunger; meeting the challenge of a low emissions world; and maintaining biodiversity and ecosystems services while feeding the world. The core argument of the report is built around the pressure exerted on food systems by an ever-growing world population. It ultimately tries to address the question of how to reconcile the inevitability of an increased and intensified food production with the necessity to minimise environmental and social impacts. The Food Ethics Council published a critical assessment of the Foresight report (FEC, 2011) where they argued that some areas have been underplayed in the analysis, including the "implications of power within supply chains for how the food system develops, notably the concentration of strategic capacity in a diminishing number of retailers

and agricultural input suppliers". The FEC report suggests that radical changes are needed in the food sector in order to face the immensity of the challenges.

These reports signal efforts by the government to promote a sustainable food industry, i.e. a food sector that is economically viable while environmentally and socially responsible. In all the documents reviewed, there is a common argument in favour of collaboration and partnering between organisations in the food supply chain to address sustainability. This collaborative supply chain thinking is actually a recurrent theme in the SSCM literature, as will be discussed later in this thesis. In light of this policy background, it is possible to understand the dominant discourse and broader context in which the research project with PepsiCo emerged.

2.3 PepsiCo UK working with agricultural growers on sustainability

2.3.1 General context of the research

The Responsible Sourcing and Agricultural Sustainability managers at PepsiCo UK initiated the project as a way to collaborate with an academic researcher to address their practical concern of driving the sustainability agenda to UK farmers in their supply chains. Through this collaboration, they were keen to develop a better understanding of the economic and social aspects of implementing a sustainable supply chain and identify drivers and barriers to success, which both PepsiCo and the growers could build upon to share responsibility on economic, environmental and social issues, create knowledge sharing opportunities, and engage in a sustainable business venture.

Let us first consider the way sustainability has been framed and approached by the company. The multinational company is behind five of the UK market leading consumer brands: Quaker, Walkers, Pepsi, Copella and Tropicana. It has been

recognized for its proactive engagement around sustainability over the last 5 years, having received a number of business awards. It is one of the FT500 companies and is ranked in the Dow Jones Sustainability Index. It has been a participant in the UN Global Compact since 2008 and is also an active member of the Sustainable Agriculture Initiative Platform (SAI) and of the Sustainable Food Lab (SFL).

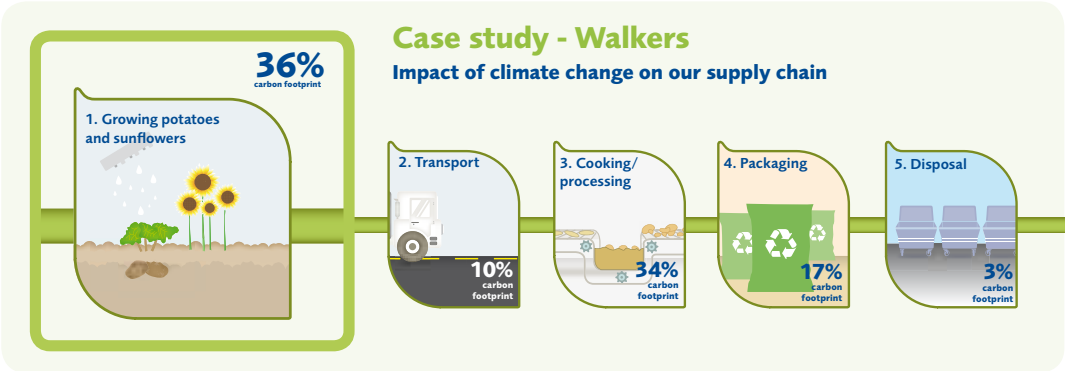
PepsiCo's global sustainability vision is as follows:

"PepsiCo's responsibility is to continually improve all aspects of the world in which we operate – environment, social and economic – creating a better tomorrow than today." (PepsiCo, 2009)

This vision statement forms the core of PepsiCo "Performance with Purpose" sustainability strategy. The multinational company worldwide operations are divided into regions, which gather several countries. PepsiCo UK & Ireland is part of PepsiCo Europe and has its head offices in Theale, Berkshire. PepsiCo UK has put agriculture at the core of its sustainability agenda. Their Environmental Sustainability Report 2009/10 (PepsiCoUK, 2010) describes their "path to zero" strategy as revolving around five key areas: fossil fuel free, passionate about growing, caring about water, collaborative leadership and products with purpose. "Passionate about growing" are PepsiCo UK's terms to refer to their approach to sustainable farming. A number of elements are presented in their 2010 Sustainable Farming Report (PepsiCoUK, 2011) to support the focus on agriculture. First, agricultural raw materials are a critical part of PepsiCo UK's operations with approximately 370,000 tonnes of potatoes, 76,000 tonnes of oats and 29,000 tonnes of apples bought yearly from UK growers. Second, the farmers represent a large and diverse part of PepsiCo UK's supply chains with over 350 suppliers across the UK. Last, when considering the carbon footprint of each of its products, PepsiCo UK

realised that a large part of the emissions was down to agricultural production. The following figure was published in PepsiCo 2009/10 Environmental sustainability report to show that 36% of the total carbon footprint emerged from agriculture in the case of Walkers crisps (PepsiCoUK, 2010).

Figure 3. Carbon footprint from agriculture for Walkers' crisps (Source: PepsiCoUK, 2010: 16)



While the multinational has embraced the "journey to sustainability" (Milne, Kearins, & Walton, 2006) within its corporate strategy by promoting a long-term goal of zero impact and risk and in 2010, the reduction of 50% of its carbon and water impact in 5 years (PepsiCoUK, 2011), it cannot achieve these ambitious targets on its own, and needs to address the question of how to engage its suppliers around these issues. The company initiated a number of UK–focused sustainability projects in 2010, specifically aimed at improving agricultural sustainability and hence requiring working with growers. It has rolled out a number of projects to its suppliers, such as carbon and water management, and has worked in collaboration with consultancies and non-governmental organizations (NGOs) to develop its strategy and tools.

One of the projects that PepsiCo UK initiated in 2010 is the adoption of the Cool Farm Tool (CFT). The CFT was originally created thought the collaboration of

experts from Unilever, the University of Aberdeen and the Sustainable Food Lab (CFI, 2012). It is currently in use by a number of supply chain organisations globally in various contexts (see: coolfarmtool.org), which support it financially. The CFT is a tool to calculate greenhouse gas (GHG) emissions from farm activities. It is designed to be grower-friendly and started as an excel-based tool and is now available online. The CFT allows farmers to measure the carbon footprint of producing their crops, livestock, etc. (CFI, 2012). The basic premise of the CFT is to provide decision support by facilitating exploration of 'what if' scenarios based on amendments to farm management practices. The tool is represented and managed through the recently established 'Cool Farm Institute' (CFI) (CFI, 2012) .This has led to efforts to migrate the Excel based original tool into an online platform in the aim of enhancing deployment, management and data storage and analysis (CFI, 2012).

PepsiCo UK has been fully involved since the first phase of the development of the tool and is one of the founding partners. They were actually the first company to trial and implement tool use within their UK supply chain. PepsiCo rolled out the CFT throughout its potatoes supply chain, relying on their growers to fill in the questionnaire. PepsiCo UK is using the CFT as part of their 50 in 5 strategy and in 2010, the first year of adoption, the CFT helped creating a baseline against which to measure improvement. In order to ensure that the suppliers would be able to use the tool, PepsiCo UK has also worked very closely with an agricultural consultancy, which helped them with the first trials but also provided training workshops.

The example of the CFT is a good illustration of the way in which PepsiCo UK and the growers work together on sustainability issues. It already reveals the

criticality of the relationship to achieve not only economic but also environmental and social goals.

2.3.2 Understanding specific practical issues

2.3.2.1 Preliminary interviews and meetings

The project consequently started with a broad focus on the dynamics of the relationship between PepsiCo UK and their agricultural suppliers when dealing with sustainability. Early on in the process, meetings and discussions with the industry collaborators have helped define the research area more precisely. In early 2011, some preliminary contacts with PepsiCo's sustainability team and participation in meetings allowed gaining additional insights into the practical issues. In January, I attended the Sustainable Food Lab Sponsors Meeting, where progress regarding the CFT was discussed. In February, I conducted some initial interviews with a number of people involved more or less closely in the sustainability strategy of the company. These interviews allowed discussing initial research ideas with key stakeholders, learning from their perspectives and mainly identifying issues that were relevant to them. A set of indicative questions was prepared to guide the interviews (Appendix 1), however most of them took the form of informal discussions. Interviews were recorded and transcribed and comprehensive notes were taken during and after the meetings, following the protocols of qualitative exploratory data collection (Yin, 2003; Silverman, 2006; Creswell, 2007). This stage of the research was crucial in building confidence before the actual "deep dive" into the field, and it served to design an initial research direction and domain. Table 3 below summarises the preliminary fieldwork.

Table 3. Exploratory data collection

DATA	DATE & LOCATION	DESCRIPTION
MEETINGS & DISCUSSIONS	Multiple October 2010 – February 2011 University, Theale or phone	Research team meet with the two industry collaborators to discuss the research direction and update each other on progress and current work. Practical issues faced by PepsiCo UK are also discussed.
SUSTAINABLE FOOD LAB	17th – 18th January 2011 Cambridge	"Global Agriculture Climate Assessment Sponsors Meeting" Representative from MNCs and NGOs who have adopted and used the Cool Farm Tool with their growers in their supply chains are gathered to discuss the progress and difficulties experienced in the first year. The different representatives presented preliminary results. It was also an opportunity for discussing potential future avenues for development and thinking about the next steps to take. Possible improvements to the tool were also addressed. There was only one farmer at the meeting.
INTERVIEWS Organised as broad discussions around the themes of job responsibilities, sustainability, SSCM, and relationship with suppliers.	15th February 2011 PepsiCo UK Theale, Reading	Interview 1 UK Indirects Purchasing Manager
		Interview 2 Sustainability Support Analyst
		Interview 3 Sustainable Energy Manager
		Interview 4 Head of External Affairs
		Interview 5 Sustainability Support Analyst
		Interview 6 Head of Agricultural Sustainability
		Interview 7 Agricultural Sustainability Manager

2.3.2.2 Examples of field notes and impressions

When possible notes were taken during the meetings but more systematically notes and impressions were recorded straight after the end of the participation/observation period. As well as trying to capture objectively the themes discussed in the meetings, some more personal and critical aspects such as reflective

questions, feelings and general thoughts about the research were included. In Table 4 below are extracts from the field notes and impressions from the SFL meeting and interviews.

Table 4. Extracts from field notes and impressions

Sustainable Food Lab Meeting	Cool Farm Tool as a tool to measure carbon emission but there was a striking absence of farmers at this meeting! Why so few when the tool (in the words of the creators) is supposedly designed for growers to better manage their own crops? Are they the real end users? Looking at the group of people involved in the workshop: same background, mostly masculine and representing the large buyer companies rather than small and medium (SME) suppliers. Is the CFT another top-down initiative? What does it reveal in terms of sustainability strategies in organisations? And about the way that sustainability is addressed in general? Concerns on how to present myself to growers: not representing the interest of Pepsi but as an objective/neutral researcher, working on how the mutual benefits of sustainability cooperation → this concern emerged after a remark made by the only farmer present at the meeting saying that my project was looking to "find new ways to exploit farmers". The question of what matters to farmer is quite interesting: Risk factor and the importance of shared experience to decrease the impression that new sustainability measures present a risk User friendliness and how to capture growers' creativity into the tool? Economic aspect: concerns over productivity and yields are valuable for growers. Is there another way to show the mutual benefits, value-added?
PepsiCo exploratory interviews	In the morning the impression was that most interviewees felt that they were a minority fighting against the majority, i.e. in the sense that sustainable practices had to be justified and they need to show their value/build a business case. There was quite a fatalistic feeling as many were deploring the lack of support and of bigger initiatives at government level for instance. In their words, they were at the beginning of a long journey to change current accepted practices and the path was not one that was straightforward. On the other hand, the discourse from a more senior staff seemed to be more positive in the sense that he considered advancements in term of sustainability to be quite mechanistic, a set of variables that needs to be defined in order to be advanced. The words used to describe the environmental challenge were that it was an "easy" one compared to the issues (in terms of measurement) raised by the social and economic dimensions. This was actually the first time in the day that the triple bottom line was mentioned in such clear terms with separate dimensions. Striking paradox: sustainability is the right thing to do, however, not much insight on how to do it right. Not questioning the very mechanical and top-down initiative. It is change for certain areas (change our impact on the environment + communities and mitigate the risks) but in the discourse of head of sust. agri: there is little consideration about how to rethink the relationship with suppliers around questions of sustainability. Contrast between the long-term vision of sustainable business and the reliance on contractual / short-term relationships with suppliers. Is the inclusion of a sustainability clause the right way to do it? Should sustainability be forced on people or should the business favour the emergence of local initiatives?

2.3.2.3 Main issues identified

Notes from meetings and interview transcripts were coded to identify the most salient themes or issues that had emerged. They are summarised in the table below, ranked in order of salience (i.e. where N indicates number of times they were mentioned). Some of the issues include multiple dimensions discussed by the different stakeholders.

Table 5. Key issues identified from exploratory fieldwork

ISSUE	DESCRIPTION	N
(a) Balancing short and long-term	Sustainability requires long-term thinking but the requirements of a multinational company involve a short-term commercial orientation. Finding the right balance is a challenge.	8
(b) Lack of engagement or buy-in	Limited engagement around sustainability initiatives from other parties.	7
Internally	Reference to other departments within the company and the necessity to build a business case. Sustainability not included in personal evaluations.	-
Externally	Outside the organisation and primarily along the supply chain. Growers in particular are viewed as not engaged.	-
(c) Contractual arrangements	Primary mechanism through which the relationship between the growers and PepsiCo is managed. Challenge to format them to include sustainability.	6
(d) One-way communication	Most communication about sustainability emanates from the sustainability team/agricultural team and there is little discussion about sustainability from other parties.	6
(e) Divide procurement/commercial team vs. sustainability/agro team	Objectives and time orientation of the two teams that are in direct contact with the suppliers are not aligned and there is a sense of mixed messages.	5
(f) Power dynamics	Balance and use of power in the relationships between the growers and PepsiCo.	5
Alternatives on the market	Risk of growers leaving to grow alternative crops such as cereals seem more profitable and less demanding.	-
Large vs. small	As a multinational company PepsiCo has the ability to invest and drive the sustainability agenda whereas small suppliers have limited resources.	-
Control approach	PepsiCo exerts control over the suppliers to ensure compliance with their sustainability requirements through audits, contracts, etc.	-
(g) Data collection/measurement	Projects aiming to quantify sustainability variables such as carbon, water, etc. (CFT is one of them).	5

Necessity	Importance of developing metrics to manage sustainability agenda and report on progress.	-
Limited resources & capability	Difficulty encountered to gather large amount of data with small team and limited capability from suppliers to fill in questionnaires.	-
(h) Relationship quality & history	Length of relationship with suppliers is an asset and the importance of maintaining a good relationship in the long-term.	4
(i) Tough commercial situation with suppliers	Tense price negotiations and short-term contractual arrangements with growers.	4
(j) Environmental vs. Social/Economic	Environmental agenda has been prioritised in the supply chain but the challenge is to understand what social and economic sustainability entail.	4
(k) Multiple understandings of sustainability	Lack of unified understanding of what sustainability means within different departments, among individuals and organisations.	3
(l) Training	Critical way to communicate about sustainability, align agendas and introduce new initiatives.	2
(m) Individual values and emotions	As opposed to the corporate/organisational values. Sustainability is a deeply personal and emotional topic.	2

The issues or themes that emerged through the interviews and meetings can be further classified into three main challenges at different levels for PepsiCo.

Table 6. Three levels of challenges for PepsiCo

		Related issues
SUPPLY CHAIN	**1. Transforming supply chain relationships structure and governance to address sustainability issues**	(b) Lack of engagement or buy-in (c) Contractual arrangements (d) One-way communication (e) Divide procurement/commercial team vs. sustainability/agro team (f) Power dynamics (g) Data collection/measurement (h) Relationship quality & history (i) Tough commercial situation with suppliers
FIRM	**2. Integrating sustainability within the traditional business commercial agenda**	(a) Balancing short and long-term (b) Lack of engagement or buy-in (e) Divide procurement/commercial team vs. sustainability/agro team (g) Data collection/measurement (j) Environmental vs. Social/Economic

INDIVIDUALS	**3. Taking into account the role played by individuals in driving sustainability**	(b) Lack of engagement or buy-in (d) One-way communication *(g) Limited resources & capability* (k) Multiple understandings of sustainability (l) Training (m) Individual values and emotions

2.4 Reflections and initial research question

These findings enabled articulate an initial overarching research question that would guide the subsequent cycles of inquiry and data collection. PepsiCo UK presented the opportunity to explore the way in which sustainability was implemented in their supply chains of agricultural raw materials and to help them identify ways to improve their relationships on sustainability with their suppliers. Through initial meetings and discussions as well as exploratory interviews, transforming the supply chain relationship structure and governance to encompass sustainability emerge as one of the key challenges. Concerns were raised about the conflicting commercial and sustainability agendas and the necessity to create engagement within and across organisations.

Considering the necessity to address PepsiCo's practical concerns, the research question emerged as a result of a problematising rather than gap-spotting approach (Alvesson & Sandberg, 2013). Hence the action research project addresses the following overarching research question (RQG):

RQG: How can sustainable supply chain management be facilitated through the relationships between a large customer and its small suppliers?

Chapter 3 – Conceptual background: Reviewing the literature

3.1 Introduction

3.1.1 Objectives

The following overarching research question for this research emerged from practice:

RQG. How can SSCM be facilitated through the relationships between a large customer and its small suppliers?

In action research, the practical issues faced by the organisation inform the research direction as much as the literature. Unlike a more grounded approach the researcher does not abstract her/himself from previous research and background literature. Staying true to the emergent action research process in the format of this thesis, as discussed in Chapter 1, means that not all the literature used to inform the cycles of inquiry is included here. Rather this chapter is an opportunity to discuss how the research fits within the broader field of SSCM and the contribution it can potentially make to academic knowledge in the field. The objectives of this chapter are to:

- Understand the scope and the factors influencing SSCM
- Assess the theoretical landscape in the field of SSCM
- Articulate implications for the research in light of the conceptual background

3.1.2 Structure of the chapter

The first part of this chapter discusses the rationale behind this initial review of the literature and the questions that have guided it. The second section describes

the methodology that has been followed to conduct the review. The third section focuses on defining SSCM. The fourth section presents the findings related to theories in SSCM, which enables understanding the current conceptualisation of the topic and potential fruitful areas for future research. This section also serves to show how the work presented in this thesis contributes to research in SSCM. Finally the last section describes the implications of the conceptual background on the thesis and articulates specific research objectives that relate to RQG in relation to this background.

3.2 Rationale of literature scoping and sub-research questions

Due to the very practical nature of this research project, it seemed important to lay the foundation for ensuring that thesis is not only relevant but also academically rigorous. The purpose of this literature scoping is twofold.

In the first instance, literature is used in an attempt to define SSCM. It could easily be argued that SSCM lies at the intersection of two fields of inquiry: sustainability and SCM. Having said that, literature on SSCM can be found across various academic journals in different fields, and does not appear as two-dimensional in practice. This seems to confirm that beyond the obvious perception of SSCM as branching out of two paradigms, there exists a much more complex view of SSCM characterised by a lack of definitional consensus (Krause, Vachon, & Klassen, 2009). It is therefore useful to try and understand the scope of the SSCM phenomena in order to make an informed contribution to the field through this work. The first part of the review has been guided by the following sub-research questions:

RQ1. How can SSCM be defined and how is it different?

RQ1a. What are the definitions of SSCM used in current literature?

RQ1b. What are the key characteristics of SSCM emerging from these definitions?

Second, the analysis of the literature serves to better understand and map the use of theories in SSCM. A number of authors in the field have deplored the theoretical dearth characterising SSCM and called for the application of a wider range of theories (Carter & Easton, 2011; Sarkis, Zhu, & Lai, 2011). Other authors found that there is a relative lack of theoretically grounded research in SSCM despite the growing number of empirical papers being published in the field (Mollenkopf et al., 2010). It has been argued that theories represent the keystone of knowledge production (Handfield & Melnyk, 1998) and therefore attention needs to be paid to their application and development when attempting to understand and evaluate any academic field. Considering the centrality of theoretical contributions in research, the second part of this review seeks to answer the following sub-research questions:

RQ2.What are the dominant theories currently used in the field of SSCM?

RQ3. How have they influenced the conceptualisation of SSCM?

RQ4. What are the promising avenues for the future development of SSCM and implications for the thesis?

The sub-research questions are answered in each of the two main sections of the literature review.

3.3 Approach to the literature review

This chapter is based upon a systematic review of 308 articles identified in relevant journals across the fields of supply, purchasing and operations, and business ethics/sustainability. A structured literature review differs from a more narrative

review because of its structured and methodical approach aiming at reducing biases and increasing transparency (Carter & Easton, 2011). This implies a detailed description of the steps taken to select, scan and analyse the literature (Tranfield, Denyer, & Smart, 2003). Hence performing a structured literature review increases replicability and provides an appropriate means of synthesising a rapidly growing field of knowledge (Miemczyk, Johnsen, & Macquet, 2012). In addition systematic literature reviews is a form of data collection that enables "integrating a number of different works on the same topic, summarizing the common elements, contrasting the differences, and extending the work in some fashion" (Meredith, 1993: 8). It is therefore a valuable methodology to discuss future research implications (Carter & Rogers, 2008).

This literature review provides a snapshot of the definitional diversity and of the different theoretical practices present in SSCM literature. It does not pretend to cover the entirety of the literature but rather offer an informative and focused evaluation of purposefully selected literature in SSCM, which will serve to answer previously outlined sub-research questions. The findings presented in the second part of the review actually make an original contribution to the field as no authors have previously taken stock of theories in SSCM.

3.3.1 Scope

In order to define the scope of the review, decisions were taken regarding the time period that will be covered, the subjects or themes as well as the journals to be included. Articles were searched from the period 1995 up to 2013, showing a continuous exploration of literature during the course of this PhD. Despite the fact that some papers have raised concerns regarding sustainability in the SC prior to

1995, our decision is justified and supported by other literature reviews in the field noticing the emergence of a larger body of literature post-1994 (Seuring & Müller, 2008). In terms of thematic scope, themes were drawn from both the SCM and the CSR/Sustainability paradigms, which have been identified earlier as critical fields to understand the development and nature of SSCM. As a consequence, the search used a combination of terms related to both sustainability and SCM (e.g. supply AND ethical – see Table 7), which helped identify articles that may not be appearing when simply searching for the main term of 'sustainable supply chain management'.

Table 7. Key words used in the literature search

"Supply chain management"		**"Sustainable"**
SUPPLY CHAIN SUPPLY PURCHASING PROCUREMENT	*AND*	SUSTAINABLE SUSTAINABILITY ETHICAL SOCIAL GREEN ENVIRONMENT

The scope of the review has been limited to peer-reviewed publications as a way to guarantee a certain level of quality (Burgess, Singh, & Koroglu, 2006), but also as a way to ensure consistency between the themes and sources by carefully selecting journals, which covered areas from both the SCM and CSR/Sustainability paradigms. Eight major journals in the field of operations and supply and seven journals in the field of business ethics/sustainability were selected as they were perceived as more likely to lead to a comprehensive coverage of the relevant literature and help address the research questions in detail (see Table 8). The fifteen journals cover different quality standards as identified by the Association of Business Schools (ABS) journal ranking 2010 (Harvey et al., 2010) but also include some

journals that have a specific focus on sustainability in an operational sense but are not ranked in ABS 2010 (Harvey et al., 2010). These publications offer the possibility of scoping a large range of research in SSCM and reflect the diversity of approaches in the field. Only articles from the selected journals have been included in this review. Searches were conducted on both the journals' websites as well as the databases Business Source Premier and ABI/Inform Global to ensure that all relevant articles would be included.

The decision to focus on these fifteen particular journals also stemmed from their primary focus on empirical and conceptual works rather than analytical modelling approaches. Although I appreciate that there are significant research studies in this area, and specifically in operations research, the focus of this review chapter has led to primarily consider how researchers apply theories and conceptualise sustainability in SCs through quantitative, qualitative or conceptual approaches rather than make sense of sustainability in SCs mathematically. Hence journals that have a modelling or operations research focus were excluded. I have also excluded general management journals in order to fit the focus of this research at the intersection of operations/SCM and sustainability. While it has been attempted to provide a broad coverage of the SSCM literature, all peer-reviewed publications have not been covered and there is a possibility that some relevant papers on SSCM have been missed.

Search results were checked to avoid duplication. A closer analysis of the abstracts allowed distinguishing between relevant and irrelevant articles. The following types of articles were excluded:

- Book reviews and letters
- Call for papers

- Articles focusing on technical aspects such as life cycle analysis (LCA), product recovery, reverse logistics, closed-loop SCs and remanufacturing
- Articles in which 'sustainability' and/or 'supply chain' was only a secondary focus.

Table 8. List of selected journals

Operations and Supply	Ethics and sustainability
International Journal of Physical Distribution and Logistics Management International Journal of Operations and Production Management International Journal of Production Economics Journal of Purchasing and Supply Management Journal of Operations Management Journal of Supply Chain Management Production and Operations Management Supply Chain Management: an International Journal	Business Strategy and the Environment Corporate Governance Corporate Social Responsibility and Environmental Management Environment and Planning A Greener Management International Journal of Business Ethics Journal of Cleaner Production

3.2.2 Analysis

All selected articles have been saved in the reference management software Endnote, in order to facilitate data management. The full list of articles included in this review can be found in Appendix 2. The analysis of the articles aimed at gathering the information relevant to answer the sub-research questions. The coding strategy adopted for this review is very similar to the principles of content analysis, where both a coding schedule (form to record the coded data) and a coding manual (specific instructions to support the coding) are used (Bryman & Bell, 2007; Abbasi & Nilsson, 2012). This approach to data analysis allows gathering both quantitative and qualitative aspects using pre-determined criteria (Table 9 below). In addition to basic bibliographic information recorded in Endnote (year, author, journal, title, volume, issue), the analysis specifically focussed on three aspects: identifying the SSCM definition used if any, the sustainability focus of the articles and the use or

absence of theoretical perspective. The journal articles have been analysed using a data extraction table, following the model of Table 10. This table allowed selecting and classifying the information from the articles according to a set of criteria that would be relevant to our study. The list of coding categories was limited to those that would specifically help respond to the sub-research questions. While some parts of the analysis are clearly deductive (e.g. categorising according to the 3BL dimensions), others are more inductive. This is the case of the identification of theories used in the articles. It was decided not to use a pre-determined list of theories but let them emerge inductively from the sample.

Several steps have been followed in order to ensure the reliability and quality of the review. Efforts have been made to make transparent the sampling process as well as the coding rules that have been applied to carry out the analysis (Bryman & Bell, 2007). The classification criteria used is grounded in or partly guided by previous research in the field, and in particular the coding scheme used by Carter and Easton (2011), which addresses validity. The analysis was performed in several rounds, and checked by a second researcher in the field in order to reduce bias and increase reliability.

Table 9. Coding categories

Coding category	Description
Article type	Classify the article in one of the following categories: research/empirical, conceptual, literature review
Method	Description of the primary methodology used to collect the study's data: for e.g. literature review, survey, case study, interviews.
Theme	The focus of the article and key issues investigated (e.g. social issues in fashion SCs)
Definition of SSCM	Assess whether or not the authors provide a definition of SSCM (or related area such purchasing ethics or green SC). If so, indication of page where the definition can be found.
Theory	Identify the theoretical lenses adopted in the article if any.
SSCM dimension	Classification of the issues discussed in the article according to the dimensions of the triple bottom line (environmental, social and economic) they represent. Distinction made between standalone issues (one dimension), those combining two dimensions or fully integrated.

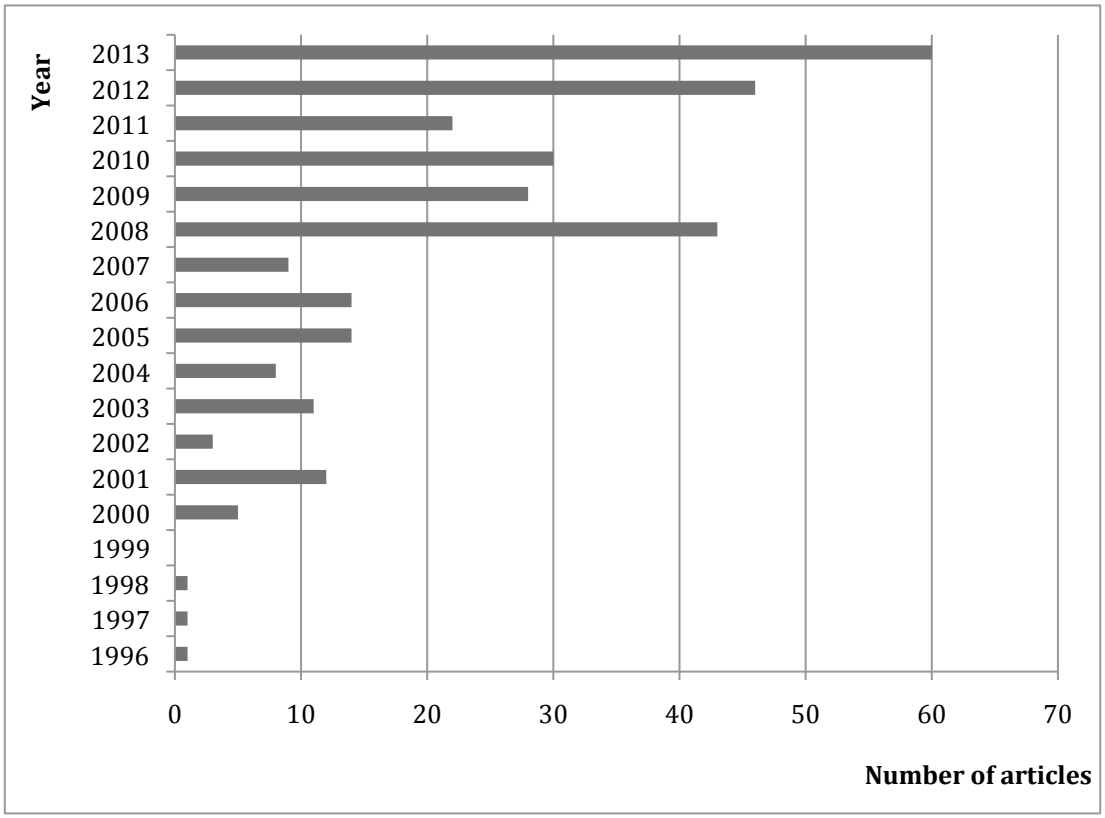
Table 10. Data extraction table

Pub.	Author	Year	Type	Method	Theme	Def. SSCM	Theory	SSCM dimension	Main Findings
IJPE	CF CM CL MA	2012	Emp.	Case study	Greening fashion SC	N/A	N/A	Environmental	Approaches to greening, comparison large firm/small companies
IJPDLM	CC DR	2008	Concep.	Lit. rev.	Comp. SSCM framework	p.368	PE, RDT, TCT, RBV	3BL	Theoretical framework

3.2.3 General trends in the literature

Figure 4 shows a clear emergence of a larger body of literature on SSCM since 2000, with a steep increase since 2008. The surge of articles since 2008 suggests a lag in SSCM, as research on sustainability, CSR and ethical business practices can be traced back to much earlier dates, with for instance influential articles on corporate social performance (Carroll, 1979) and stakeholder theory (Freeman, 1984).

Figure 4. Number of articles by year (out of 308)

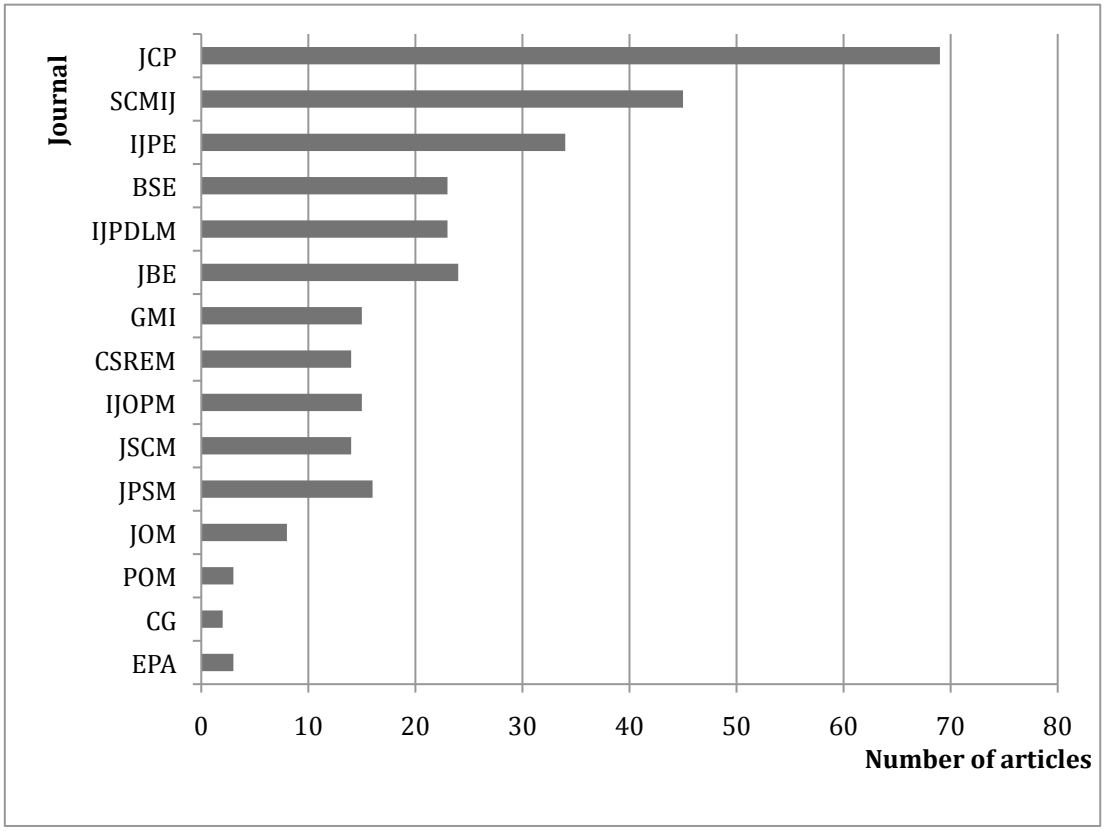


74.4% of the articles were published between 2008 and 2013 (229 papers), and 69% of these (158 papers) in the period 2010-2013. There was a particular surge in 2013, with 60 articles published. This confirms that the interest in the subject has really grown in the last few years. It does not seem too far-fetched to suggest a link between this trend and the recent changes in the global economic and political landscape. This may support findings that sustainability appears to be surviving the downturn (Berns et al., 2009).

The articles are almost equally distributed between supply/operations (51.3%) and business ethics/sustainability (48.7%) publications. The top five journals in terms of number of papers are Journal of Cleaner Production, Supply Chain Management: an International Journal, International Journal of Production Economics, Business Strategy and the Environment, and International Journal of

Physical Distribution and Logistics Management. The full classification of publications is shown in Figure 5.

Figure 5. Number of articles per publication (out of 308)



Another interesting feature emerging from the analysis is that the vast majority of papers (79%) can be classified in the category 'research/empirical'. This category encompasses papers, which present the results and findings of observations and studies of practice in SSCM (e.g. surveys, case studies, etc.). It is possible to note an increase in the number of literature reviews that have been conducted in the field in recent years as attempts to map and analyse the state of research in SSCM. In total, 18 literature reviews were found in the sample, all of them published since 2008 and of which seven were published in 2012 and four in 2013. This is a sign that the field is gaining in maturity and that authors are keen to explore how to advance research in the field.

3.4 How can SSCM be defined?

Supply chains have been increasingly perceived as the hub of modern competition (Ketchen & Giunipero, 2004; Ketchen & Hult, 2007a). Supply networks are complex and provide opportunities for firms to develop valuable and inimitable capabilities and gain a strategic advantage over their competitors (Mills, Schmitz, & Frizelle, 2004; Ketchen & Hult, 2007b). SSCM has emanated from the recognition of the strategic importance of purchasing and supply activities both in achieving the firm's long-term performance, and in addressing sustainability issues within business capabilities (Mentzer et al., 2001; Burgess, Singh, & Koroglu, 2006; Hall & Matos, 2010). As an academic field, SSCM has been growing in the last decade, as shown by the amount of literature published on the subject (see Figure 4 in the second part).

3.4.1 What are the definitions of SSCM used in current literature?

Authors have provided a variety of definitions of SSCM. Table 11 presents some of the key definitions chronologically from articles reviewed in this study. These definitions have been chosen because they represent a good representation of the definitional variety as distributed over the years.

Table 11. Some definitions of sustainable SCM

Definition	Author
Green supply refers to the way in which innovations in supply chain management and industrial purchasing may be considered in the context of the environment. (p.188)	(Green, Morton, & New, 1996)
Environmental Supply Chain Dynamics (ESCD) are a phenomenon where environmental innovations diffuse from a customer firm to a supplier firm, with environmental innovation defined as being either a product, process, technology or technique developed to reduce environmental impacts. (p.456)	(Hall, 2000)
Green supply refers to supply management activities that are attempts to improve the environmental performance of purchased inputs, or of the suppliers that provide them. They might include activities such as co-operative recycling and packaging waste reduction initiatives, environmental data gathering about products, processes or vendors, and joint development of new environmental products or processes. The term encompasses a wide range of activity, and is broader than previous definitions of environmental purchasing (p.175)	(Bowen, 2001)

Therefore, green purchasing – the integration of environmental considerations into purchasing policies, programmes and actions – is critical for enterprises because it leads to eco-efficiency, cost-saving and improved public perception. (p.28)	(Zhu & Geng, 2001)
Sustainable chain management (…) involves issues of sustainable development insofar as companies can be held responsible for the social and environmental impacts arising along the supply chain. It demands that companies integrate ecological and social aspects into their decisions and actions, not only internally but also along those supply chains that determine the economic value of their business. (p.8)	(Wolters, 2003)
[Purchasing Social Responsibility consists] of five unique dimensions: the environment, diversity, human rights, philanthropy, and safety (p.183)	(Carter, 2005)
Green SCM is defined as 'integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life'. (p.54)	(Srivastava, 2007)
The strategic, transparent integration and achievement of an organization's social, environmental, and economic goals in the systemic coordination of key inter-organisational business processes for improving the long-term economic performance of the individual company and its supply chains. (p. 368)	(Carter & Rogers, 2008)
The management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e., economic, environmental and social, into account, which are derived from customer and stakeholder requirements. (p. 1700)	(Seuring & Müller, 2008)
We define supply management ethical responsibility (SMER) as managing the optimal flow of high-quality, value-for-money materials, components or services from a suitable set of innovative suppliers in a fair, consistent, and reasonable manner that meets or exceeds societal norms, even though not legally required. (p.101)	(Eltantawy, Fox, & Giunipero, 2009)
Procurement that is consistent with the principles of sustainable development, such as ensuring a strong, healthy and just society, living within environmental limits, and promoting good governance. (p.128)	(Walker & Brammer, 2009)
The chain-wide consideration of issues beyond the narrow economic, technical and legal requirements of the supply chain to accomplish social (and environmental) benefits along with the traditional economic gains which every member in that supply chain seeks. (p.291)	(Spence & Bourlakis, 2009)
Firms are increasingly under pressure from stakeholders to incorporate the triple-bottom line of social, environmental and economic responsibility considerations into operations and supply chain management strategies. (p. 19)	(Tate, Ellram, & Kirchoff, 2010)
Sustainable purchasing and supply management is the consideration of environmental, social, ethical and economic issues in the management of the organisation's external resources in such a way that the supply of all goods, services, capabilities and knowledge that are necessary for running, maintaining and managing the organisation's primary and support activities provide value not only to the organisation but also to society and the economy (p. 480)	(Miemczyk, Johnsen, & Macquet, 2012)
SSCM is the designing, organizing, coordinating and controlling of supply chains to become truly sustainable with the minimum expectation of a truly sustainable supply chain being to maintain economic viability, while doing no harm to social or environmental systems. (p.46)	(Pagell & Shevchenko, 2014)

Although the earliest definition found in the sample dates from 1996, the articles published prior 2000 do not explicitly define SSCM (or Green SCM) as an integrated concept but rather provide a definition of SCM (or related aspects) and a description of the environment or environmental impacts as a separate variable. From

2001, definitions start to become more precise and multifaceted. Authors have taken different perspectives to define SSCM and we can distinguish between those adopting a procurement/purchasing perspective versus a SC perspective. More recent definitions seem to incorporate the concept of sustainable development, with specific references to the three dimensions of the triple bottom line, rather than just focusing on a single aspect of sustainability such as 'green' or 'social'. This may be a sign that approaches to SSCM are becoming more integrated and include a broader range of issues (Carter & Rogers, 2008; Seuring & Müller, 2008; Preuss, 2009a).

Other interesting aspects in these definitions are the inclusion of the notion of pressures from external stakeholders, and the idea that SSCM goes beyond the traditional conception of business while still being concerned with economic performance. These aspects resonate with the concepts found in sustainability and CSR literature through stakeholder theory and the natural resource-based view, which will be discussed in the next section. From a more operational perspective, it appears that SSCM is viewed as underlying both internal and external business processes, with a specific emphasis on the role of collaboration between SC partners.

This snapshot of definitions found in the SSCM literature reveals the variety of constructs and angles adopted by authors in the field. The year 2008 marked somewhat a turning point towards defining SSCM after the publication of the influential reviews and conceptual frameworks by Carter and Rogers (2008) on the one hand, and Seuring and Müller (2008) on the other. Both these papers have been highly cited by other SSCM scholars, respectively by 602 and 873 in 2014, and appear as the top articles when searching for SSCM on Google Scholar. Hence it is fair to consider the definitions they have proposed as particularly prominent in the

field and a reflection of the key characteristics of SSCM. These will be further described in the next section.

3.4.2 What are the key characteristics of SSCM emerging from these definitions?

It is fair to expect some conceptual diversity in a relatively young field such as SSCM. From the analysis of the definitions presented in the literature, and the ones by Carter and Rogers (2008) and Seuring and Müller (2008) in particular, it is possible to identify three key characteristics of SSCM as summarised in Table 12.

Table 12. Key characteristics of SSCM

Characteristic	Description
Operational	SSCM is concerned with the flows of material and information that support an organisation or set of organisations' activities towards the creation of value and therefore comprises traditional SCM constructs.
Transformational	SSCM represents an evolution in business practice to address concerns beyond the economic sphere, namely environmental and social issues, over a long-term orientation.
Relational	SSCM relies on the relationships between members of the SC as well as takes into account the interest of stakeholders in the broader network, and the relation between the economic, social and natural systems

3.5 How is SSCM different?

Building on the key characteristics of SSCM identified in the previous section, it is possible to show that SSCM shares the operational characteristic with traditional SCM but differs when it comes to the transformational and relational aspects.

3.5.1 Similarities: Operational

Interestingly, from the definitions it appears that sustainability has often been viewed as an added dimension of traditional SCM. Many of the definitions actually seem to build on Mentzer et al.'s (2001) definition of SCM, which is as follows:

"Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole" (p.18)

The operational characteristic of SSCM is clear and much research in the field resonates naturally with more traditional SCM constructs as described by Burgess et al. (2006), summarised in Table 13 below. These traditional SCM constructs represent the different aspects encompassed within the operational dimension of SSCM described in Table 12.

Table 13. Traditional SCM constructs in SSCM (Source: adapted from Burgess, Singh, & Koroglu, 2006: 709)

Construct	Description	Application in SSCM	E.g. articles
Leadership	"Capturing the strategic nature of SCM and the need for a senior management team to be proactively involved"	The role of senior management as internal enabler for sustainability strategy	(Ageron, Gunasekaran, & Spalanzani, 2012) (Walker & Jones, 2012)
Intra- and inter-organisational relationships	"Focusing on the nature and type of social and economic associations between stakeholders both within and between organizations"	Buyer-supplier relationships, collaboration in particular, are crucial in determining an organisation's ability to adapt and respond to sustainability	(Brammer, Hoejmose, & Millington, 2012) (Vachon & Klassen, 2007)
Logistics	"Describing the issues associated with movement of materials within and between entities in a supply chain"	Reverse logistics for product reuse and recycling. Role of design of transportation network on environmental sustainability	(Cholette & Venkat, 2009) (Sarkis, Helms, & Hervani, 2010)
Process improvement orientation	"Processual arrangements that facilitate interactions within and between organizations, with a view to continually improving them"	Implementation of environmental management systems (EMS) Collaborating to improve environmental design of products and processes	(Zhu, Sarkis, & Lai, 2007; Darnall, Jolley, & Handfield, 2008) (Zhu, 2004)
Information system	"Covering aspects of communication both within and between organizations"	Ensuring product traceability and sustainability through the use of standards and certification Information sharing between buyers and suppliers to ensure environmental and social practices	(Beske, Koplin, & Seuring, 2008) (Solér, Bergström, & Shanahan, 2010)
Business results and outcomes	"Capturing performance related outcomes that organizations accrue from adopting strong SCM orientation"	Relation between environmental and social practices and economic and overall SC performance. Performance encompassing environmental and social performance of the SC	(Rao & Holt, 2005) (Paulraj, 2011)

As noted by Burgess et al. (2006) the constructs they identify reveal that SCM relates to both *soft*, i.e. people centred, and *hard* aspects of operations. All SSCM research articles reviewed address one or more of these constructs in the context of the implementation of sustainability and therefore embrace fully SSCM as an operational field. The operational characteristic of SSCM is further explored in the second section of the review when discussing the aspects and conceptualisations that have prevailed in research to date.

3.5.2 Differences: Transformational & Relational

In order to understand what makes SSCM different from traditional SCM requires some background on corporate sustainability. In this section, I show that SSCM forms a crucial part of the corporate sustainability journey, which is about transformation and relationality. The main challenge lies in integrating the two core concepts of sustainability and SCM (Seuring et al., 2008; Ahi & Searcy, 2013); and leading the change.

3.5.2.1 Redefining business: The sustainability imperative

Social issues and environmental degradation, as consequences of a globalised economy based on an exploitative conception of growth, have raised concerns over the nature and role of businesses. The traditional view of "business for business" (Friedman, 1970) has been put into question and companies have started adopting more inclusive views of their responsibility to the world (Freeman, 1984). Surveys of business executives have shown that the majority of practitioners (54%) are very concerned about sustainability performance (Hopkins et al., 2009; Anonymous, 2010; Haanaes et al., 2011). Despite the economic downturn, in 2011 68% of companies said that they were increasing their commitment to sustainability though

more investment (Haanaes et al., 2011), which is a sign that sustainability is not just a fad but has become critical on businesses' agenda.

The concept of corporate sustainability however remains ambiguous. One of the earliest and seminal definition of sustainable development is that of the Brundtland Commission (WCED, 1987), which states that it is "a development which meets the needs of the present without compromising the ability of future generations to meet their own needs". The metaphor of sustainability as a "journey" as well as the notion of sustainable development, both allude to the idea of the transformation – or paradigm shift – to respond to new expectations and imperatives (Gladwin, Kennelly, & Krause, 1995; Milne, Kearins, & Walton, 2006). Translating this concept into the realm of business has led to multiple conceptualisations seeing the light. These different conceptualisations all refer to some forms of internal and external relationships between organisations, their members, society around them and the natural environment. This is what I refer to as relationality (Bradbury & Lichtenstein, 2000).

A predominant view is that organisations embracing the concept of sustainability seek to enhance not only economic but also human and natural capital. This idea is commonly referred to as the triple bottom line (3BL) of business sustainability and has been institutionalised by Elkington (1998) in an attempt to redefine our conceptualisation of capitalism. The 3BL framework has been widely utilised in both academic research and corporate discourse. The usual representation of the 3BL is three interconnected circles of equal size, each representing a dimension of sustainability. This in line with the business case for sustainability that views the sustainable development challenge as providing greater business opportunities for creating value and gaining competitive advantage (Carroll, 1979;

Hart, 1995; Kolk & Pinkse, 2007; Markley & Davis, 2007). In this sense corporate sustainability is associated with specific measures looking to improve the social and environmental conditions in which businesses operate while maintaining a certain level of profitability (Carter & Rogers, 2008).

This approach has been criticised by authors such as Griggs et al. (2013) who instead propose an ecocentric view of sustainability, placing the Earth's life-support systems at the core of their definition. Their representation of the three dimensions of sustainability uses concentric circles to show how the economy and society are embedded within and ultimately depend upon the preservation of the natural system. The argument against the three equal circles is that it makes it look like addressing each dimension is optional, as all of them have the same weight.

Another recent conceptualisation of corporate sustainability reasserts the necessity to adopt a systemic and ecocentric view. In this sense sustainability is about envisioning a prosperous future within planetary boundaries (Whiteman, Walker, & Perego, 2012) and the framework proposed by the authors calls for an assessment and a re-embedding of corporate activities' impact within socio-ecological systems. From this perspective, companies are viewed as operating within society and the natural environment and therefore must take into account a broader network of actors within their strategy and not only focus on satisfying the economic interests if their shareholders. According to the authors, understanding firms' impacts on the planetary boundaries is a first step to take action and they encourage a change and action approach to sustainability research.

The persistent ambiguity of the notion of corporate sustainability is largely due the fact that it has been developed and evolved in a context dominated by an economistic view of the firm (Angus-Leppan, Benn, & Young, 2010) or

technocentric paradigm as described by Gladwin et al. (1995). Ambiguities arise for managers when attempting to understand how the economic, human and ecological dimensions inter-relate. The main challenge in implementing sustainability is translating the concept into tangible actions and embedding these practices within and between organisations (van der Heijden, Cramer, & Driessen, 2012). The numerous corporate initiatives in this domain make it clear that organisations have attempted to operationalise the concept and adopted mechanisms for changing their practices (Mohrman & Worley, 2010), and particularly at the SC level.

3.5.2.2 Sustainability in supply chains

Globalisation has favoured the expansion of supply chains across geographies and this makes it even more likely for ethical and sustainability dilemmas to arise (Kortelainen, 2008; Andersen & Skjoett-Larsen, 2009). Numerous examples of such scandals are regularly published in the news. In the last two years only, we have witnessed the horsemeat scandal in Europe (Lawrence, 2013), garment factories collapse and fires in Bangladesh (Manik & Yardley, 2012; Uddin, 2013), and the mass suicide protest of Foxconn workers in China (Moore, 2012).

It has been argued that organizational sustainability can only be fully achieved if sustainability issues are addressed at the SC level (Preuss, 2005; Paulraj, 2011) as they bring together a multiplicity of actors in different locations and have an impact at multiple levels (Park-Poaps & Rees, 2010). SC activities are a critical source of value and competitive advantage for businesses (Burgess, Singh, & Koroglu, 2006); thus an organization's environmental and social performance is affected by that of its suppliers (Tate, Ellram, & Kirchoff, 2010). Simpson and

Power (2005: 62) have shown that supply relationships "may present a key way for business to influence the sustainability of products and services."

SCs are made up of both formal quantifiable mechanisms of production and complex social interactions. Each SC is unique, composed of idiosyncratic actors shaping their own micro-systems within the macro structure of the chain. Hence the investigation of sustainability within SCs cannot be reduced to a sum of abstracted variables. The very nature of SSCs suggests that a comprehensive understanding of their dynamics must account for their social complexity, their historical baggage and ambiguous causalities. SSCs are highly embedded in context, and understanding of the SSC emerges in local situations and through specific interactions between buyers and suppliers as well as other actors in the network (Gold, Seuring, & Beske, 2010).

While specific initiatives have been introduced, the actual transition towards a more sustainable SC is not like a traditional organisational change initiative, which is finite and introduced over a specific amount of time. This transition is continuous, emergent and is embedded within a broader movement, i.e. not bounded to the organizational realm, about reframing the relationship between society and the natural environment (Paulraj, 2011; Peattie, 2011). Carter and Rogers (2008) note that the economic, social and environmental objectives are interdependent and organisations must make the link between them.

These aspects demonstrate that SSCM is transformational because its implementation questions the status quo (Jayaraman, Klassen, & Linton, 2007; Seuring et al., 2008; Fabbe-Costes, Roussat, & Colin, 2011). SSCM is also relational because it takes into account not only intra and inter-organisational relationships (see Table 13) but also relationships with society as a whole and the links between SC operations and the natural environment.

However, in both practice and research, there is evidence that the transformational and relational aspects of SSCM have not been fully embraced. Carter and Rogers (2008) point out that most organisational efforts are not as productive as they could be with regards to integrating the three dimensions of sustainability. They argue that 'existing approaches to environmental and social initiatives are fragmented and disconnected from strategy, leading to conflicting economic, social and environmental objectives' (Carter & Rogers, 2008: 378). Pagell and Shevchenko (2014) further support this point in saying that current SSCM research primarily reflects a narrow shareholder view and overly focuses on the economic (i.e. profit) implications of being sustainable. In addition, they argue that much research has focussed on investigating how SC could be more sustainable rather than how they could become *truly* sustainable. So essentially the characteristics highlighted in Table 12 above represent the ideal or aspiration for SSCM research. Mapping theoretical practices will enable shedding light on these arguments, exploring the state of SSCM research in more depth and suggesting how research can become closer to the SSCM aspiration/ideal.

3.6 Assessing the theoretical landscape of SSCM

3.6.1 Relevance of theoretical mapping in SSCM

Considering the definitional variety and practical challenges found in the SSCM literature, it appeared necessary to understand how theories have been used in the field to make sense of the multifaceted issues encompassed. The review has shown the variety of cases across different sectors and industries, from Chinese labour conditions auditing (Kortelainen, 2008) to sustainable supplier management in the chemical industry (Foerstl et al., 2010) to name but a few.

This is a sign that SSCM is a relatively young field of inquiry, in which research is still at an exploratory/discovery stage of the new topics and with little accumulation of results. Undoubtedly, this argument can be linked to the idea that sustainability issues in the supply chain are too varied to be able to provide overarching types of analysis and research (Pullman, Maloni, & Carter, 2009). This suggests an explanation for the reason why authors have favoured empirical approaches as a way to capture the uniqueness of specific SSCM problems.

The publication of several literature reviews in SSCM is an indication that the field becoming more prominent and established. However, the findings of these reviews indicate that despite the growing number of articles published on the subject, there is still an alarming lack of theoretically grounded research (Carter & Rogers, 2008; Carter & Easton, 2011). Authors found that there is a relative lack of theoretically grounded research in SSCM despite the growing number of empirical papers being published in the field (Mollenkopf et al., 2010). In their review of socially and environmentally responsible procurement, Hoejmose and Adrien-Kirby (2012) point out that the overly descriptive nature of current research is useful in accumulating knowledge about facts but fails to make a strong theoretical contribution. Hence the field can be viewed as conceptually immature and underdeveloped (2012: 235).

In their recent review, Winter and Knemeyer (2013) analysed the intersection of "sustainability" and "SCM" with a particular focus on analysing how sustainability and SCM dimensions had been approached in the literature. They found that authors have primarily researched individual dimensions of sustainability, in particular environmental, and that there is a striking lack of integrated approaches. They briefly mention that in current literature "only a few theoretical constructs have

been developed and tested to date" (Winter & Knemeyer, 2013: 33) but they do not specifically identify the theories that have been applied in the field. Reviewing theoretical practices in SSCM constitutes a way to explore the potential conceptual reasons that have favoured the predominance of a narrow environmental sustainability focus. In addition, as pointed out by Sarkis et al. (2011: 2) "there is a void of literature that has sought to review and integrate theory with the green SCM research". There is therefore an opportunity to provide a comprehensive evaluation of theories for researchers in SSCM looking to advance theory building and application.

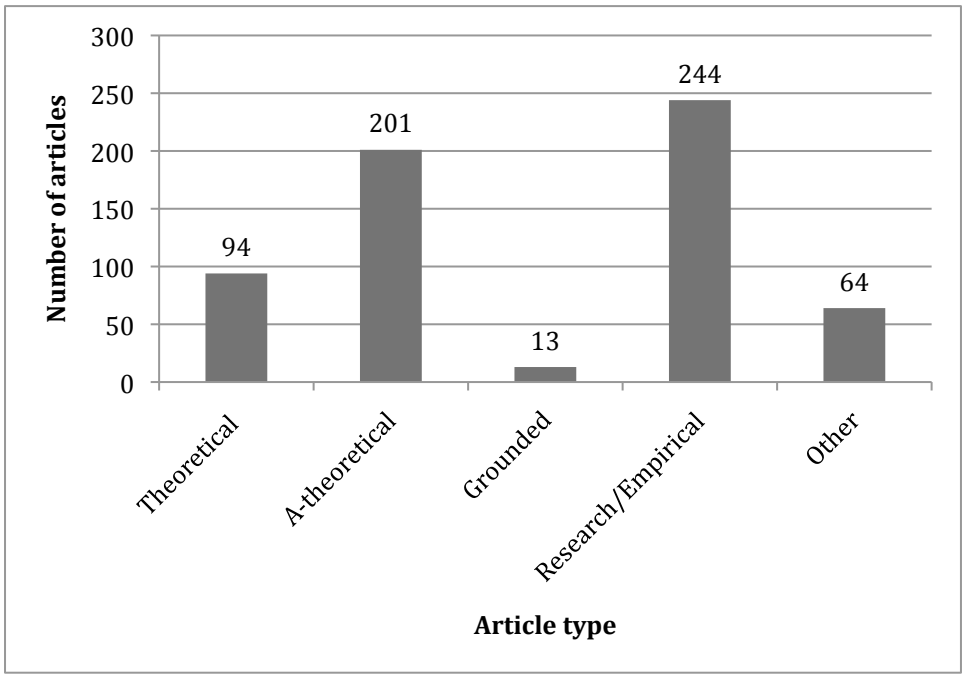
Furthermore, in a recent paper, Pagell and Shevchenko (2014) point out that current research in the field has failed to fully capture all supply chain's impacts, i.e. economic, social and environmental, mainly because of a theoretical distortion in favour of profit maximisation and economically beneficial practices. Arguably, in order for research to offer more comprehensive, innovative and theoretically grounded insights, it is important to have an overview of what theories have been applied to date and how authors have used them to conceptualise SSCM.

In light of these existing gaps and challenges, this section provides a comprehensive review of theories in the field and offers an integrative theoretical map, which can guide the work presented in this thesis and inform the potential areas of contribution. In reporting the analysis of the data, where appropriate I have included the reference numbers of specific papers as listed in Appendix 2.

3.6.2 General trends in the use of theories in SSCM

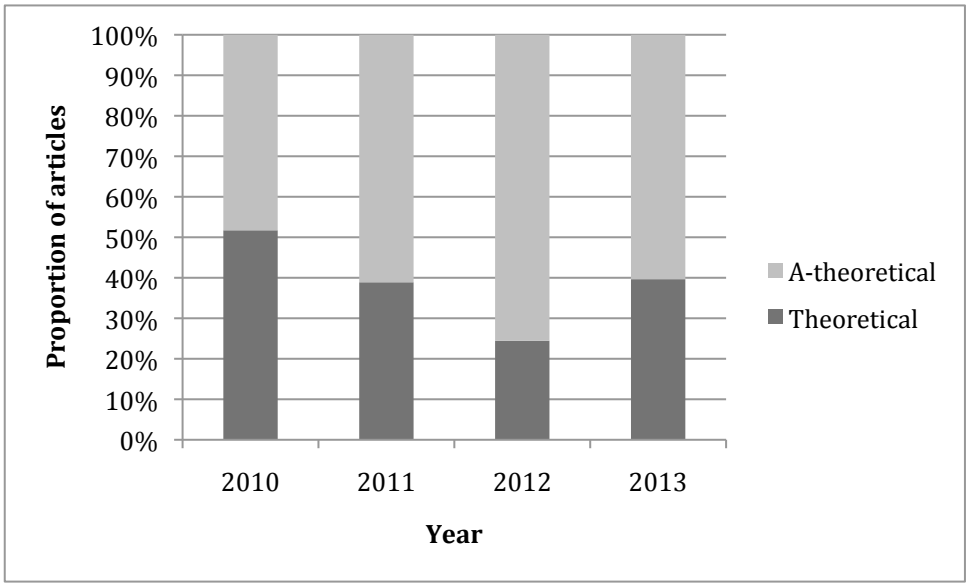
Over 65% of the articles analysed are a-theoretical, which leaves little room for theory testing and theory building. A very small number of papers in the sample use a grounded theory approach as shown in Figure 6

Figure 6. Types of articles



Carter and Easton (2011) noted an encouraging trend towards integrating more theory in SSCM between 2001-2010. This finding led to analysing the evolution of the proportion of theoretical and a-theoretical articles in the period 2010-2013, which has not been covered in their review. Figure 7 reveals that the proportion of a-theoretical papers remains higher than papers adopting a theoretical perspective, except in 2010 where the proportion of theoretical papers was slightly higher. One can note that the gap between the number theoretical and a-theoretical studies has narrowed in 2013.

Figure 7. Evolution of use of theories 2010-2013



The papers that can be classified as theoretical reveal a tendency for SSCM researchers to import theories from other fields rather than develop their own. The main 'alien theoretical perspectives' (Amundson, 1998: 354) are identified in the next section. Metaphorically speaking, imported theoretical perspectives are the spectacles through which researchers view, describe and analyse problems in SSCM. This trend is certainly a reflection of the interdisciplinary nature of SSCM issues (Amundson, 1998), as shown by the variety of cases across different sectors and industries, from Chinese labour conditions auditing (Kortelainen, 2008) to sustainable supplier management in the chemical industry (Foerstl et al., 2010) to name but a few.

Efforts to build upon the existing theories to develop new perspectives are scarce in the literature. Rather, in the case studies and survey articles, authors present their empirical conclusions and results with no or little attempt to explore concepts, relationships and make further predictions for theory building purposes.

3.6.3 What are the dominant theories currently used in the field of SSCM?

3.6.3.1 Most popular theories in SSCM

Having described the prevalence of theory testing in the field, it is interesting to look at the theories adopted in SSCM research to date in more detail. Many authors borrow macro theories traditionally associated to other academic fields such as economics and political science (Colquitt & Zapata-Phelan, 2007). It is important to mention that although these theories have been encountered more than once in the articles, authors vary in the way they utilise them, with some theoretical lenses being more popular than others. In particular, the resource-based view (RBV), including the N-RBV; stakeholder theory (ST); institutional theory (IT) and transaction cost theory (TCT) are the most referred to. Figure 8 shows that these four theories are proportionally more cited and used in the literature. Some articles combine more than one theory and therefore the figures do not add up to the total number of theoretical articles. The 'Others' column represents the 21 additional theories identified in the literature. An overview of these is presented in Table 14, with corresponding occurrence in the sample.

Figure 8. Most popular theories in SSCM literature

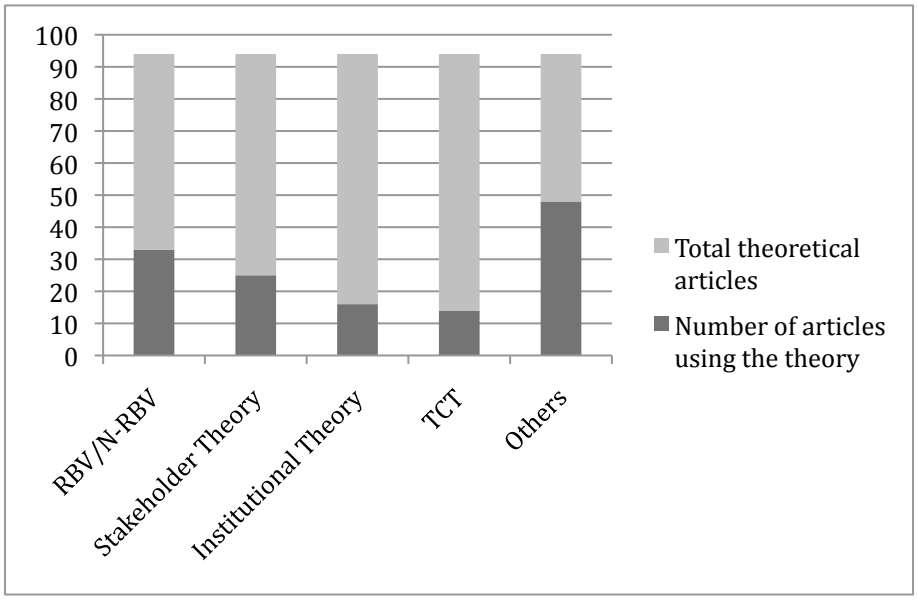


Table 14. Other theories found in the literature

Theory	N articles	Theory	N articles
Resource dependence theory	8	Ethical climate theory	1
Dynamic capabilities	7	Ethical theory	1
Relational theory	5	Exchange theory	1
Network theory	4	Industrial network theory	1
Agency theory	3	Legitimacy theory	1
Global value chain	3	Organisational learning theory	1
Systems theory	3	Population ecology	1
Contingency theory	2	Resource advantage theory	1
Actor Network Theory	1	Social network theory	1
Complexity theory	1		1
Ecological modernisation theory	1		

Table 15 shows the number of articles using each of the most popular theories and Table 16 describes the key tenets of these theories as well as the typical SSCM challenges that relate to them.

Table 15. The use of theories in SSCM theoretical articles

Theory	Number of articles	Reference numbers
RBV including N-RBV	33	265, 261, 168, 92, 57, 100, 291, 69, 63, 41, 178, 110, 208, 308, 90, 192, 203, 31, 24, 179, 140, 234, 137, 37, 93, 45, 264, 154, 26, 275, 189, 86, 195
Stakeholder theory	25	102, 44, 9, 70, 143, 144, 191, 134, 223, 85, 164, 258, 170, 272, 39, 163, 154, 26, 275, 274, 125, 103, 93, 140, 179
Institutional theory	16	140, 46, 232, 255, 172, 38, 2, 118, 301, 307, 240, 254, 234, 179, 69, 93, 163
TCT	14	16, 101, 91, 237, 245, 266, 236, 214, 297, 189, 86, 195, 103, 45
Others	48	11, 53, 146, 179, 277, 290, 78, 190, 28, 160, 207, 167, 211, 240, 254, 137, 196, 267, 181, 253, 208, 90, 192, 31, 24, 7, 114, 37, 93, 45, 257, 264, 170, 271, 39, 26, 275, 274, 125, 195, 202, 18, 139, 16

Table 16. Key theories in SSCM literature

Theory	Description	Unit of analysis	Typical SSCM challenges	Reference	Example articles from the review
Resource-based view (RBV)	A firm's sustainable competitive advantage emanates from its valuable, rare, inimitable, non-substitutable resources and the unique way they are utilised through core capabilities.	The firm as a bundle of resources and its internal processes to manage these resources.	Identification and development of key resources contributing to ensure achievement of environmental, social and economic performance in the supply chain. Inter-organisational resources as important as intra-organisational resources to stimulate supplier engagement with SSCM practice.	(Barney, 1991)	(Gold, Seuring, & Beske, 2010)
Natural RBV	Harnessing environmental and social challenges within business capabilities is a source of competitive advantage. The imperatives of sustainable development create opportunities for differentiation and increased market power.			(Hart, 1995)	(Foerstl et al., 2010)
Stakeholder Theory	The activities of companies affect both internal and external parties. Corporate social responsibility can be understood as the responsibility for a business to meet the expectations of its various stakeholders. Firms can ensure their long-term survival and preserve their license to operate by taking into account the broad network of actors into their strategy.	The firm as embedded in a network of stakeholders. Firm activities and decisions as shaped by external stakeholders' pressures.	Extent of inclusion of SC stakeholders (suppliers, customers, etc.) in organisational environmental and social practices. Identification and role of specific stakeholder influences on SSCM practices.	(Freeman, 1984)	(Park-Poaps & Rees, 2010)
Institutional Theory	External social pressures (coercive, mimetic and normative) influence organisations in adopting socially responsible behaviours and transform their practices to gain social legitimacy. By responding to regulations and imitating their competitors, firms ensure the alignment of their corporate practices with society's expectations.	Individual or collective (industry, national) organisational practices are adopted or diffused as responses to institutional drivers.	Motives and circumstance of adoption and diffusion of environmental and social standards. Role of government regulation in driving SSCM practice. Imitation between organisations as driver of adoption of SSCM practices.	(DiMaggio & Powell, 1983)	(Gonzalez, Sarkis, & Adenso-Diaz, 2008)

Transaction Cost Theory	Two organisations involved in an exchange or activity incur costs and efforts. In order to sustain the exchange the parties must find appropriate modes of governance and safeguards (i.e. in contractual arrangements).	Transaction or exchange between buyer and supplier(s) and the governance of this exchange.	Modes of governance and organisational action in buyer-supplier relationships to implement social and green practices. The impact of transaction costs on the adoption and diffusion of sustainability practices across a SC.	(Williamson, 1981)	(Vachon & Klassen, 2006b)

Those specific theoretical perspectives have been used for three main purposes that relate to the operational characteristic of SSCM, as defined earlier:

- To define the drivers/enablers and barriers to SSCM.
- To explore how organisations are managing sustainability issues with other SC parties
- To explain the advantages/challenges of SSCM for the firm, i.e. relation to performance

Despite the convenience of importing and using existing theories in trying to understand SSCM phenomena, it seems necessary to warn of the challenges and limitations of such a practice. While it is being justified as an attempt to avoid 'reinventing the wheel', authors must carefully assess the compatibility of the theory before deciding to import it. Specifically, the relation between the theory and the issue studied must be determined, with particular attention to be paid to the relevance of its concepts and explanatory power (Amundson, 1998). Moreover, all theoretical frameworks reflect deep ontological commitments, which in turn affect the appreciation of and approach to a specific question or problem. Imported theories carry with them the baggage of their mother discipline. This implies that the use of a specific theoretical lens to research SSCM will shed light on certain dimensions, concepts and relationships at the expense of others. This point will be further examined in the next section.

3.6.3.2 Theoretical levels in SSCM

It must be noticed that most of the theories used in SSCM can be described as macro theories in the sense that they take a more organisational and strategic rather than individual and behavioural perspective. The macro theories utilised in SSCM

have favoured the prevalence of a large buyer firm perspective as the unit of analysis (see Table 5). Indeed, it seems that their scope and concepts tend to be more applicable to research about the activities of large companies, and in many cases have not questioned but rather validated a top-down approach to SSCM (e.g. codes of conduct compliance). However, in practice there is certainly a role for SMEs in the management of sustainability in the supply chain – i.e. small suppliers/large buyers. There is also a need to acknowledge the importance of individuals in the development of SSCM.

The divide between macro and micro perspectives is not a new phenomenon in organisational analysis, and the difficulty for authors to capture the interplay between both levels has been acknowledged by a number of authors (Astley & Van de Ven, 1983; Klein, Tosi, & Canella, 1999). The lack of focus on micro level issues in SSCM might simply be due to the fact the field is growing and cannot be yet considered mature. Another possible explanation might be the close relation between SCM and SSCM. Many articles in SSCM have emerged from a more operational/SCM tradition, which is also characterised by the predominance of macro approaches. Nonetheless, the interest for behavioural SCM has grown over the years, as shown for instance in the articles by Harland (1996) and Tokar (2010), and this might be a sign that a similar progression is likely to happen in SSCM.

3.6.4 How have dominant theories influenced the conceptualisation of SSCM?

3.6.4.1 Current sustainability issues

There is a connection between theoretical perspectives and questions or aspects being explored. Consequently, it is interesting to consider the issues that have been researched to date in order to see whether any striking pattern is emerging and

how it can be linked with the findings on theories. Looking into the evolution of these issues over time can help define what may constitute a fruitful way to develop the SSCM conceptual base. The issues addressed by papers between 2010-2013 are considered in order to build a current picture of the field. This period has not been covered in other comprehensive reviews of the SSCM literature such as that by Carter and Easton (2011). Hence this review provides an overview of the latest issues addressed in SSCM research.

In order to offer clear and simplified insights into the current issues mostly addressed in SSCM research, I have used the environmental and social dimensions of sustainability as underlying framework. This helps classify the sustainability aspects researched in the literature (i.e. environment, social or integrated), as presented in Table 17. It is possible to argue that all papers in the sample fit within the economic dimension as they all address specific issues related to business transformation for sustainability and as only management related journals have been included (Seuring & Müller, 2008). The interesting part is to see what links are then explored: economic and environment, economic and social, or a link between all three dimensions. It is possible to notice that a higher proportion of articles explore links with the environment/green dimension rather than social dimension (See Figure 9). In line with the earlier analysis of definitions, it seems that quite a large proportion of papers between 2010-2013 adopt a mixed approach to sustainability (i.e. combining two dimensions or more) (39.9%). In 2013, 60% of the articles considered environmental or green issues. Figure 10 actually shows that the proportion of articles considering green and mix sustainability issues remain high between 2010-2013 compared to the ones considering social issues.

Figure 9. Sustainability issues in papers between 2010-2013

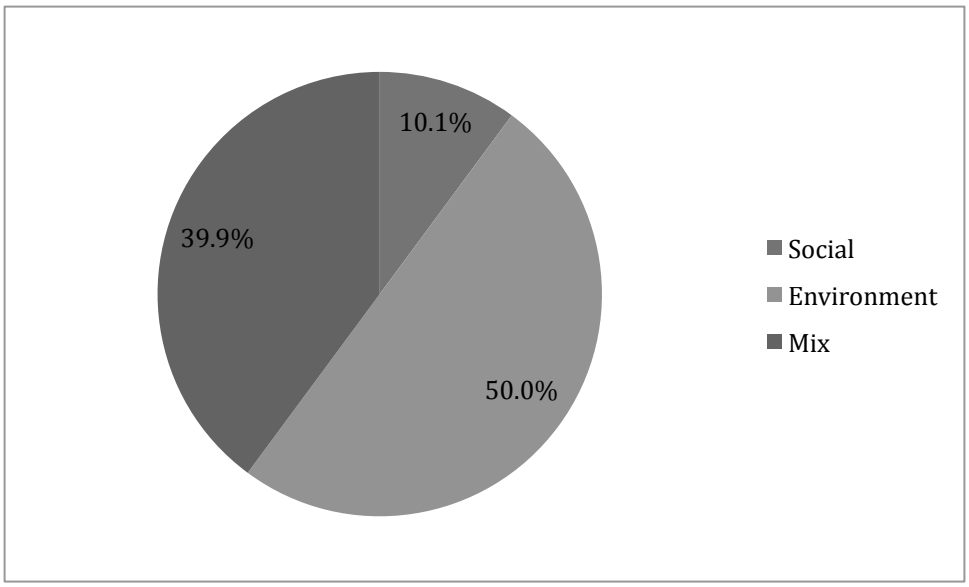


Figure 10. Evolution of sustainability issues between 2010-2013

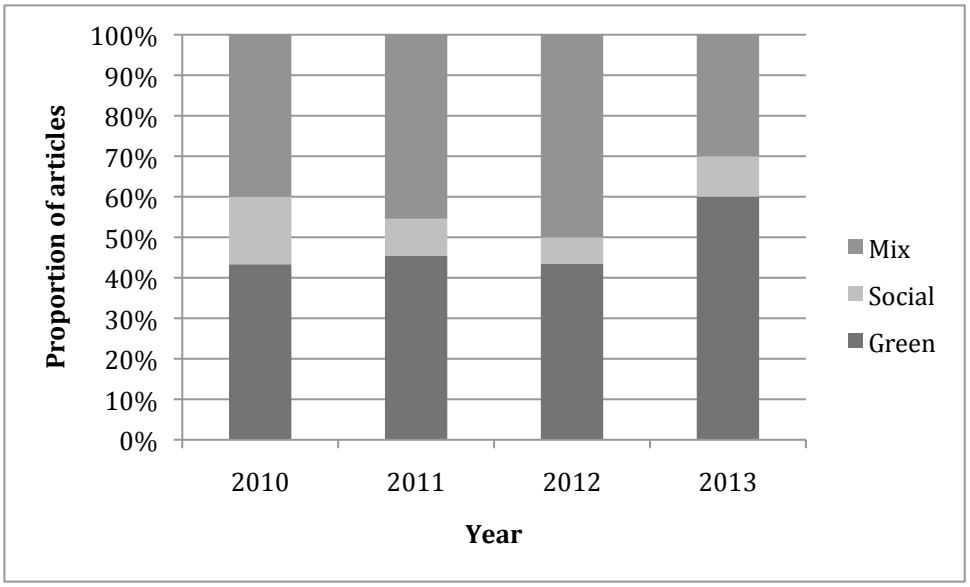


Table 17. Sustainability issues in articles between 2010-2013 (with article reference numbers from Appendix 2)

Year	Green	Social	Mixed
2010	104, 159, 171, 216, 241, 259, 270, 287, 299, 15, 190, 255, 177	156, 268, 191 16, 214	8, 29, 90, 78, 211, 254, 208, 125, 103, 202, 189, 18
2011	68, 26, 219, 72, 150, 153, 180, 14, 134, 149	53, 284	227, 269, 292, 43, 172, 110, 192, 32, 74, 288
2012	234, 7, 163, 139, 1, 218, 293, 27, 36, 49, 83, 98, 111, 151, 185, 194, 243, 280, 298, 19	137, 173, 183	109, 113, 174, 278, 4, 23, 65, 76, 88, 89, 94, 124, 238, 250, 286, 12
2013	52, 60, 123, 17, 33, 58, 71, 169, 182, 213, 224, 271, 282, 283, 294, 160, 67, 119, 130, 212, 261, 92, 290, 167, 118, 301, 307, 253, 57, 100, 291, 37, 85, 86, 209, 181	34, 48, 112, 28, 114, 258	285, 5, 131, 228, 6, 22, 108, 129, 157, 296, 95, 115, 11, 179, 2, 240, 164, 195

3.6.4.2 Prevailing conceptualisations of SSCM

Borrowing theoretical perspectives from other disciplines has an influence on the way SSCM has been conceptualised. Table 16 above summarises the link between the popular theories and the aspects or challenges of SSCM that have been most explored. This can be linked to the findings presented in section 3.4.2 regarding the operational and technocentric orientation of SSCM currently.

There has been a particular focus upon the concepts of resources, performance, and power. Specifically, resources and the way they are managed are seen as the source of competitive advantage for companies, which are faced with the challenge of how to access and make the most of these resources. In addition, there has been strong emphasis on studying the correlation between firm performance and sustainability, and in particular the identification of sources of competitive advantage through the harnessing of environmental and social challenges within business capabilities (Hart, 1995; Hart & Milstein, 2003). The concept of power is also apparent, either in the form of power differential emanating from the firm's strategic

abilities (RBV) or understood as a form of dependence and control over the exchange process and/or the resources. All three notions of resources, performance and power seem to be connected. This fits with the focus in practice on building the business case for sustainability.

The resource-based view of SSCM suggests that competitive advantage can be gained through unique sustainability-related competencies in their supply chains, which reflects a classic view of business performance and power. SSCM is integrated within the realm of strategic management and described as an evolution of traditional purchasing and supply activities, and the RBV perspective shows how this evolution fits in the overall business performance objectives. Pullman, Maloni and Carter (2009) used the RBV and NRBV to formulate hypotheses and study performance outcomes related to environmental and social practices in the food supply chain. Markley and Davis (2007) link performance and SSCM. They compare the NRBV and the triple bottom line and describe how firms can generate competitive advantage from the incorporation of stakeholder and sustainability concerns in their supply chain. There has been a strong interest in investigating the link between firm financial performance and the management of environmental and social issues. While several studies have identified a relationship between firm performance and aspects of SSCM (Krause, Vachon, & Klassen, 2009) and specifically between environmental SCM and economic performance (Zhu & Sarkis, 2004), the direction of this relationship seems ambiguous. It is unclear whether economic performance is a result of the adoption of SSCM practices or if companies performing well have adopted SSCM practices. The operationalisation of sustainable development concepts into tangible metrics, and financial indicators in particular, is

difficult and does not fit in traditional performance systems (Srivastava, 2007; Tsoulfas & Pappis, 2008).

It appears that the correlation between performance and sustainability may be more complex and dependent upon other mediating variables, such as collaboration between supply chain partners to enhance both environmental and economic performance (Vachon & Klassen, 2008), or organisational learning as suggested by Carter (2005) who has utilised the RBV to demonstrate the criticality of more intangible resources such as human capital and knowledge. TCT (Williamson, 1981) has also been applied to understand the relation between performance and sustainability but in the context of transactions. In particular, authors have investigated how organisations can manage uncertainty by choosing to internalise or externalise environmental activities (Vachon & Klassen, 2006b). In this context, attention has also been paid to understanding the modes of governance between buyers and suppliers that are more likely to lead to high environmental and social performance.

The other main theoretical perspectives are stakeholder theory and institutional theory. Both theories tend to be found in papers looking to explore the drivers and enablers of SSCM but also its complex nature and the challenges it poses. In particular, stakeholder theory is utilised to capture the intertwinement of multiple actors within supply chains, which often straddle national boundaries. Both stakeholder and institutional theory highlight the emergence of SSCM as a result of the influence of parties impacted by business activities. Institutional theory offers a lens to understand the pressure that firms put on one another in the movement towards adopting more sustainable practice in the supply chain. (i.e. mimetic isomorphism or the way in which organisations tend to emulate each other's best

practices). The study by Park-Poaps and Rees (2010) provides an example of how stakeholder theory has been operationalised in SSCM research. They study stakeholder forces of socially responsible supply chain orientation (SRSCO) in the footwear and apparel industry. They differentiate between internal and external forces and show that SRSCO in this industry has a strong positive relation with consumers, industry and media influences. Interestingly, institutional theory has been adopted in several studies examining corporate ethical communication through CSR reports or codes of conduct. For instance, Preuss (2009b) shows that the adoption of ethical sourcing codes is strongly influenced by isomorphic and public pressures. Tate, Ellram and Kirchoff (2010) use institutional theory to analyse the content of CSR reports and highlight that although institutional pressure is clear across various industries, the way in which it is interpreted and translated within reports varies according to the size of the company and its geographic location.

3.6.5 What are the promising avenues for the future development of SSCM and implications for the thesis?

The review has revealed that certain aspects of SSCM remain under-explored as a result of the predominance of a limited number of theories employed to conceptualise issues in the field. These findings have strong implications on the positioning and potential contributions of this thesis.

3.6.5.1 Under-explored aspects of SSCM

On the whole, it appears that the most popular theoretical perspectives utilised in SSCM fail to capture all aspects of practices in the field. In particular, the emphasis on performance (and how to improve it) seems to be correlated to the prevalence of environmental and economic approaches to SSCM, which present

more quantifiable characteristics. There is certainly a gap around the more social and human dimension of sustainability. The competitive paradigm seems to dominate the SSCM landscape and it is difficult to go beyond traditional perspectives, which have been strongly influenced by neo-classical economics, although sustainability issues may require a shift in mindsets and business models. This could allow transitioning to new conceptions of consumption and firms' purposes as well as developing alternatives to the dominant discourse of growth.

SSCM research to date has been primarily focussed with economic and environmental aspects and has not addressed the full complexity of systemic sustainability research. In order to investigate the human aspects of SSCM, authors could borrow theories from organisational behaviour and psychology such as sense-making theory (Weick, 1979) and even extend well-known theories such as Maslow's hierarchy of needs (Maslow, 1970). For instance, the latter could help explore how individuals in different organisations across the SC may have various needs and motivations affecting their ability to deal with environmental and social issues, hence impacting on how sustainability can be implemented in the SC as a whole.

There is potential to move from the macro theoretical trend to more multilevel theoretical perspectives, to gain a comprehensive understanding of SSCM and make sense of its underlying complexity (Astley & Van de Ven, 1983; Klein, Tosi, & Canella, 1999). It is most certainly challenging to conduct multilevel research but such approaches may constitute a fruitful way to capture the multifaceted reality of SSCM. Several authors have acknowledged the importance of leadership and corporate culture (Doppelt, 2003; Dunphy, Griffiths, & Benn, 2003), which both bring attention to human decisions and interactions in the change towards

sustainability. It does therefore make sense to consider the roles and perspectives of individuals towards achieving SSCM.

In addition, the idea that SSCM signifies an evolution of business practices has not been thoroughly explored. These aspects could be further investigated through other borrowed theoretical lenses. Organisational change theory for corporate sustainability (Dunphy, Griffiths, & Benn, 2003) could provide a basis to look into the more psychological and behavioural aspects of change in organisations. Finally, authors could borrow theories such as natural capitalism (Hawken, Lovins, & Lovins, 1999) or evolutionary theory (Nelson & Winter, 1982) to examine how firms can adapt to their evolving environment through the development of knowledge and how they can capture new opportunities.

There are additional gaps related to this idea of transformation at the SC relationship level. Most research has focussed on what practices would be most effective in achieving environmental and social performance with suppliers, without comprising on profitability (Pagell & Shevchenko, 2014). Van Bommel (2011: 899) points out that "only limited frameworks in the literature analyze and describe the process of implementing sustainability in supply networks." In particular, literature has emphasised the issue of how companies should screen and select their suppliers against their social and environmental requirements. The implementation of social and environmental practices cannot be reduced to problems of screening and selection and there is a need to investigate "how buyers are dealing with long-term legacy suppliers" (Hoejmose & Adrien-Kirby, 2012: 240). This could be done through further testing and extension of theoretical perspectives related to the management of relationships, including relational theory (Dyer & Singh, 1998), and resource dependence theory (RDT) (Pfeffer & Salancik, 1978). Social exchange

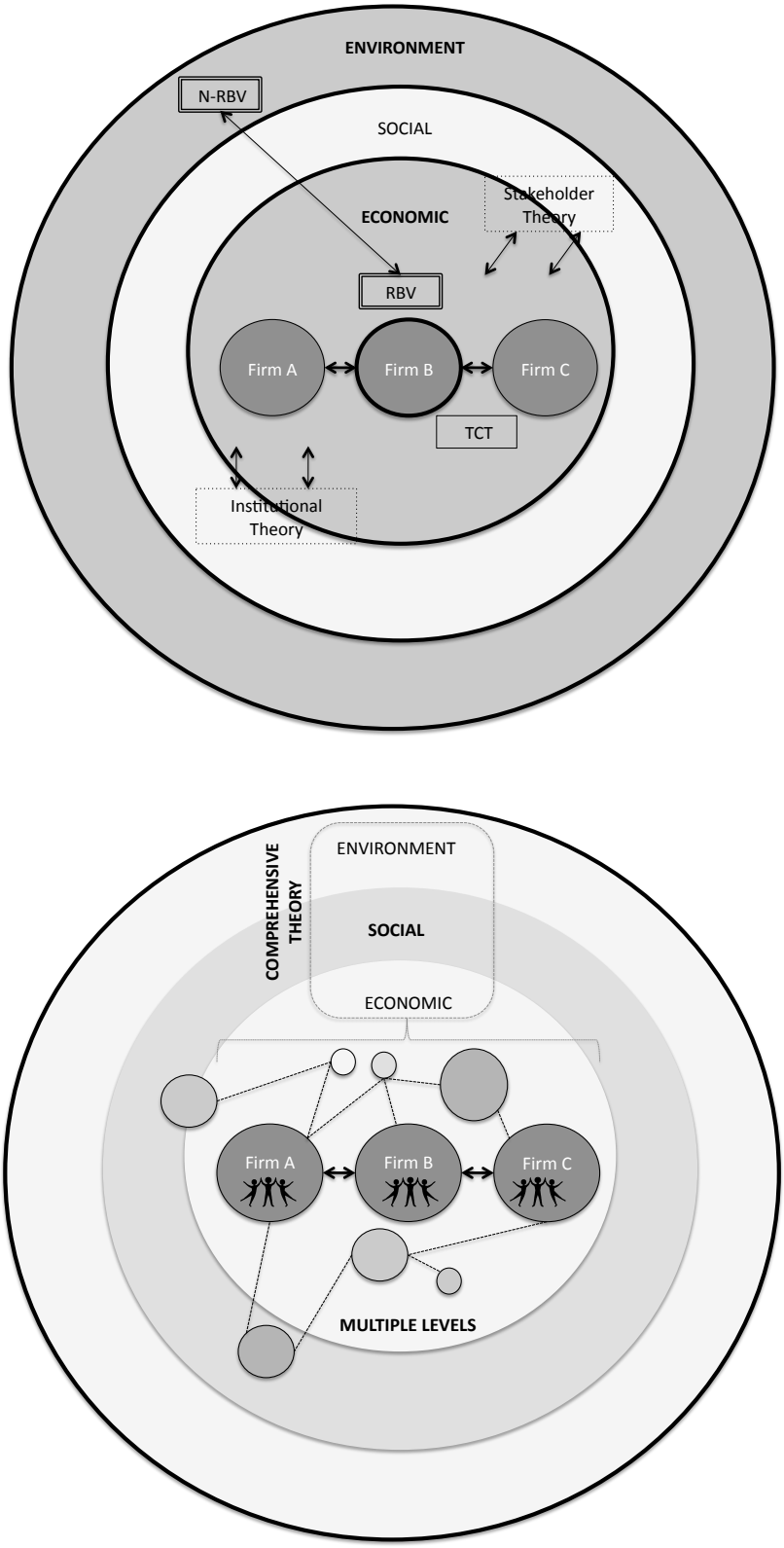
theory (Emerson, 1976) or social network theory (SNT) (Granovetter, 1973) could be used to investigate how organisations adapt and respond to the sustainability challenge through their social relationships and the development of social capital.

Griggs et al. (2013) representation of sustainability serves as the theoretical underpinning for Figure 11, which summarises the findings from the review and attempts to capture the current and possible future state of SSCM conceptual base. Society would not exist without the natural environment so the social dimension sits within the environment. Similarly, the economic sphere emanates from society and therefore sits within the social dimension. The first part of the figure represents the current state of SSCM research, highlighting the most popular theories as well as the more explored dimensions (economic and environment in darker shades of grey). The Natural RBV is concerned with the use of natural resources, and fall in the environmental sphere. Stakeholder theory and Institutional theory are represented at the social level, although they overlap with the economic level. Organisations at the societal and economic levels can place pressure on firms to adopt SSCM, such as government regulations and other firms applying pressure through mimetic isomorphism. Stakeholders can both be within society at large (e.g. Non Government Organisations) and part of a firm's more immediate economic arena (e.g. shareholders). Within the economic sphere, the RBV concerns resources that firms have control over and may use and develop to deal with sustainability issues.

The potential development of the SSCM conceptual base is represented in the second part of the figure, which shows a more integrated and multilevel approach to sustainability. The dimensions are represented as more connected and we represent the call for more comprehensive approaches to SSCM. The multiple supply chain layers are acknowledged (Sarkis, 2012) to illustrate the need for more multilevel

research from the individuals to the organisations and the networks. The social dimension is slightly emphasized to show that this is a promising area for future research.

Figure 11. Map of SSCM theory: current and future (Source: Author)



3.6.5.2 Implications for the thesis

A number of conclusions can be drawn from this review that inform the contribution of this research:

1. The analysis showed that the majority of papers in SSCM do not employ any theories, while the others rely mainly on the importation of macro theories from other disciplines. Hence there is a need for more theoretically grounded work in the field.
2. In this regard, employing under-used theories is potentially a way to shed light on the under-explored aspects of SSCM such as micro level dynamics and change aspects.
3. The theoretical dearth in the field can be partly explained by the difficulty researchers face to do justice to rich empirical settings. Empirical evidence is a fundamental input for theorizing, but it needs the researcher's ability to identify 'mysteries' and take on the challenge of solving them to create new knowledge (Alvesson & Kärreman, 2007). It is therefore important to nurture the relationship between practice and academia.
4. Relevant theoretical frameworks provide a way to simplify and address the complex challenges posed by sustainability. And the way in which such theories can be developed and tested is through interaction with practising managers, who are in a position to inform where the "wicked" problems that SSCM research needs to address are.
5. Analysing the literature has identified a need for more theoretically grounded research in SSCM. It has also revealed that current research in SSCM has tended to explore macro aspects through the use of a limited

number of theoretical lenses. It has therefore predominantly adopted an operational focus with a prevalence of studies considering the perspective of large focal firms. In addition, a large number of theoretical contributions relate to the drivers, enablers and outcomes (very often in terms of performance) of SSCM rather than considering the actual implementation process of sustainability initiatives in supply chains.

Several motivations to this research have been identified in practice and are supported by the review of the literature. This work proposes to address the qualitative knowledge gap around the relational aspects of implement SSC practices, and particularly relationships between a large buyer and small suppliers. The overarching research question (RQG) can be articulated around three research objectives that fill in research gaps as shown in Table 18.

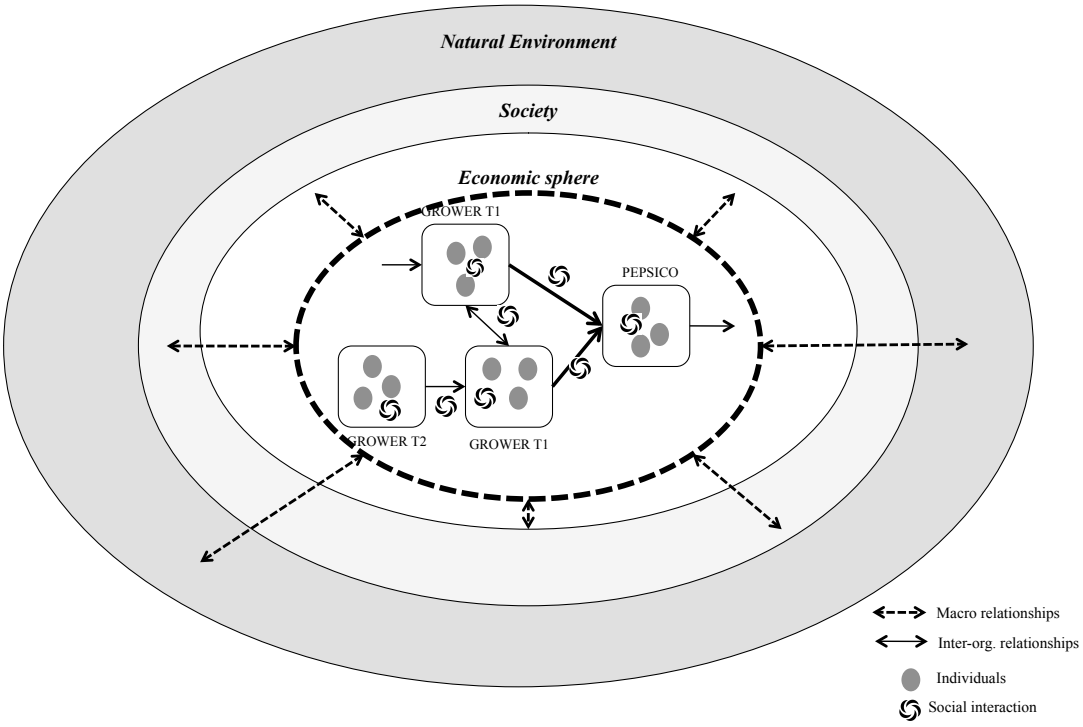
Table 18. Overarching research question and research objectives

RQG How can sustainable supply chain management be facilitated through the relationships between a large customer and its small suppliers?	
Research objectives	**Research gaps filled**
Develop our understanding of the relationship dynamics in the implementation of sustainable supply chain practices between a large customer and small suppliers	- Lack of research looking into activities of small firms vs. large firms - Lack of research in "how" SSCM is implemented, especially with legacy suppliers
Explore the role of individuals to facilitate SSCM	- Lack of focus on the behavioural and human aspects of SSCM - Lack of research at micro level
Articulate ways to improve the working relationship on economic, environmental and social issues in the supply chain.	- Lack of research considering the transformational characteristic of SSCM - Relatively little research with integrated approach to sustainability

Based on the practical insights, identified research objectives and drawing on the proposed future map of SSCM theory above, the work presented in this thesis can be represented by Figure 12 below. The figure illustrates the multiple level of SSCM

explored through the different cycles of inquiry presented in the thesis. The overall focus of this work on how the SC relationships between PepsiCo and the suppliers are managed to encompass economic, environmental and social issues is emphasised. The figure also shows the two main levels of the SC relationships that are explored in the Deep Dive: inter-organisational dynamics, and the role of individuals within this context.

Figure 12. Multilevel representation of the research objectives (Source: Author)



Chapter 4 – Approach to inquiry: Methodological considerations and research design

4.1 Introduction

4.1.1 Objectives

In this chapter, details about the methodology and research design are provided. Considerations about the way in which to approach the inquiry came about early on the research process, and hence this chapter forms the third and final scene of the Encounter act. Choices were made regarding which methods to adopt, which were informed by broader reflections on the nature and purpose of knowledge creation and on academic endeavour for managerial practice. The overarching aim is to offer a comprehensive view of the research process and explain the rationale behind the inquiry. This can be broken down into six specific objectives for this chapter:

a. Ensure the transparency of the research logic that has guided this entire research project
b. Present the background debates on paradigms and methods in the mother discipline of operations management (OM)
c. Explain the foundations of action research as a methodology and show how it has been used in OM in the past
d. Provide a justification for adopting an action research approach to study SSCM
e. Describe the practical application of action research in this thesis through a detailed discussion of process, methods and analysis
f. Address questions of quality and ethicality

4.1.3 Structure of the chapter

The chapter is organised around three subsections, which reflect the logical thought process that led to the design of the research. The first section discusses paradigms and empirical research in OM and explains how this study fills particular gaps within OM research. The second section focuses on action research, its core tenets, the way it has previously been used, and why it is relevant to SSCM research. The last section brings the discussion back to this specific research project, showing how action research was applied to the inquiry though various methods of data collection and analysis, and how quality was ensured throughout by adopting a variety of strategies. Criticism and challenges to the methodology chosen are discussed across this chapter.

4.2 Background: Paradigms and empirical research in OM

When embarking on a research project, it seems that the enthusiasm about the empirical very often overshadows the more reflective and philosophical aspects that any research endeavour needs to address. It is important that researchers not only take the time to identify the research issue that they are keen to address but also reflect about which knowledge paradigm they come from and what they are trying to achieve (Guba & Lincoln, 2005; Towers & Chen, 2008).

4.2.1 Philosophical considerations and research logics

While it may seem quite daunting to explore one's own assumptions and position about philosophical matters, the place of philosophy within research should not be underestimated. The conception of philosophy as the 'under-labourer' for research, historically attributed to John Locke (1690 cited in Jones & ten Bos, 2007: 58), reveals the necessity for researchers to have a capacity to reflect and not just be

mere empiricists. Far from pejorative, the image of the 'under-labourer' shows that philosophy is a somewhat invisible tool that helps clarify our approach to knowledge and our interpretation of findings (Winch, 1958). Ignoring philosophical issues can have a negative impact on the quality of the research (Towers & Chen, 2008). It is not surprising then that philosophy of science occupies a central place in management research, and discussions drawing on philosophical ideas have been ongoing for decades (Morgan, 1980, 1984; Deetz, 1996; Schultz & Hatch, 1996; Guba & Lincoln, 2005).

My own field of operations management (OM) is no exception. Authors have debated various issues related to epistemological and methodological concerns. For instance, they have discussed the nature of theory development in the field (Meredith, 1998; Schmenner & Swink, 1998; Wacker, 1998), and particularly how to bridge the gap between practice and theory (Flynn et al., 1990; Amundson, 1998), but also the necessity to embrace multiple methodological approaches (Boyer & Swink, 2008; Carter, Sanders, & Dong, 2008), and especially how to find a balance between quantitative and qualitative approaches (Meredith et al., 1989). OM as a discipline has emerged from practical industrial concerns and encompasses multiple sub-areas such as lean or supply chain management, which have all progressively developed into their own research and practice communities. I take the view that OM can be seen metaphorically as a family tree with multiple branches having grown and expanded over time, each connected to the family roots but displaying their own attributes and descent. I therefore contend that there is value in exploring the nature of scientific inquiry within each of the OM sub-disciplines in order to make sense of the variety in OM and attempt to understand its complexity.

As a researcher in SSCM, I am keen to study and understand its development as a growing academic field and subfield of OM, but also to contribute to its advancement. SSCM has received increased attention in the last decade, with a growing amount of literature to be found across OM, SCM and sustainability/business ethics journals. Interestingly, authors in the field have provided a variety of definitions of SSCM and the field is characterised by an absence of definitional consensus as described in Chapter 3 (Krause, Vachon, & Klassen, 2009). A number of authors have attempted to analyse the state of research in SSCM through literature reviews (Carter & Rogers, 2008; Seuring & Müller, 2008; Carter & Easton, 2011). These reviews only briefly touch upon methodologies adopted in SSCM. I am not aware of any attempt at addressing philosophical issues within SSCM research. In particular, as authors deplore the theoretical dearth in SSCM (as discussed in Chapter 3) and are concerned with how to encourage theory development in the field (Seuring & Müller, 2008; Carter & Easton, 2011), the relevance of engaging in methodological discussions is even more striking. It has been shown that the majority of research conducted in SSCM can be characterised as empirical research, that is to say studies that offer unique insights into practical issues and that are based on data collected from real settings, mainly case studies and surveys (Seuring & Müller, 2008; Carter & Easton, 2011). In addition, researchers have noted that studies tend to be primarily descriptive (Hoejmose & Adrien-Kirby, 2012) and that key epistemological issues are mostly underplayed (Miemczyk, Johnsen, & Macquet, 2012).

Having identified the need to engage in philosophical and methodological discussion in SSCM, this chapter offers a reflection on how researchers could make the most of the empirical richness to support conceptual testing and development in

the field but also facilitate learning in practice. I propose to address this methodological question by exploring the nature of SSCM and defining the legitimacy and value of AR for the field.

4.2.2 The OM rationalist baggage?

There exist certain forms of pressure regarding a researcher's position within the research community. It is very often assumed that each academic discipline follows or is dominated by a given philosophical tradition. Consequently, researchers are encouraged to locate themselves within the norms of practice of their own discipline (Buchanan & Bryman, 2007). This is why I discuss the paradigms in the OM discipline in order to better understand how they might have influenced the research practices in SSCM.

Traditionally, OM research has been associated with positivism and more 'rationalist' approaches (Meredith, 1998: 441; Schmenner & Swink, 1998; Voss, Tsikriktsis, & Frohlich, 2002: 196). Despite the fact that historically OM has its roots in industrial practice with a pragmatic research orientation aimed at solving managerial issues, it progressively evolved into a more theoretical field of operations research/management science (OR/MS) (Meredith et al., 1989). The development of OR/MS has been consistent with the desire of researchers to develop the academic credibility and rigour of the field. The OR approach is mainly based upon principles of positivistic research, attaching importance to deductive theory development and mathematical modelling (Meredith et al., 1989). The growth of OR/MS as an academic discipline has strongly influenced research practice in OM. While in some cases, the two subjects are kept separate with the existence of different research

groups in a single academic institution; it is very often the case that OM is assimilated within OR/MS or vice-versa.

It is interesting at this stage to consider the concept of paradigm and its definition in the philosophy of science. The most notorious philosopher on paradigms is Kuhn (1962) who used the notion of paradigm to explain how scientific knowledge develops and progresses. In his view, a paradigm is characterised by 'normal science', in contrast to revolutionary science, where researchers try and find solutions to scientific puzzles and enlarge the paradigm. Kuhn (1962) explains that convergent thinking emerges within disciplines with strong theoretical agreement. In his sense, the meaning of paradigm is twofold. On the one hand, we can understand paradigm as a model of reference for knowledge development. On the other hand, the notion of paradigm refers to a disciplinary matrix, the set of shared principles, values and practices of a research community. The latter conception of paradigm shows that members of a same discipline will tend to have shared or similar commitments regarding ontological, epistemological and consequently methodological positions. This is where the notion of disciplinary tradition takes its full meaning. Taking the example of research students, they generally start their research journey with the idea of having to find a gap in the exiting body of knowledge. In paradigm terms, they are looking for a gap within their field's paradigm in order to make a contribution that will be recognised by their community. One can appreciate that different paradigms do not value all research methodologies in the same way (Johnson & Duberley, 2000). The relevance of a certain methodology will be determined on its relation with the belief about the nature of the world and how we can create knowledge about it that is held within the community.

As a consequence, there is a strong link between the dominance of a paradigm within a discipline and the prevalence of some methodologies compared to others.

The concept of paradigm has been used and debated in management literature and it is fair to say that it is contentious. One of the main debates regarding paradigm is around the issue of incommensurability or the idea that paradigms cannot be compared or associated. Some authors have argued in favour of paradigm unity and consensus within management (Pfeffer, 1993, 1995), while others have defended the value of paradigm plurality, encouraging competition (Van Maanen, 1995). There have been attempts at defining what are the existing and dominant paradigms in management research, for instance through typologies or frameworks such as that of Burrell and Morgan (1979). While their work has been criticised for its rigidity and simplification, several authors in the OM field have used their classification when analysing the state of SCM or logistics research (e.g. Näslund, 2002; Burgess, Singh, & Koroglu, 2006). It seems too idealistic, and potentially self-limiting, to suppose that researchers of a same discipline will adhere to a common paradigm, especially in multidisciplinary fields such as management or young areas such as SSCM.

Mathematical models and statistical surveys are two examples of common research methods used by operations researchers following the rationalist tradition (Meredith, 1998; Coughlan & Coghlan, 2002). They reveal that positivism remains a dominant paradigm in the field. Rationalist research practices seem to have led to the impression that OM had lost its connection with practice (Coughlan & Coghlan, 2002). Looking more specifically at SCM, commonly seen as a subfield within OM, shows the relative importance of positivist epistemologies, and consequently less articles using post-positivist approaches, for instance through interpretive case

studies and qualitative methods (Burgess, Singh, & Koroglu, 2006; Towers & Chen, 2008).

Much of this discussion relates to the on-going debate about the nature of research in disciplines outside the realm of the natural sciences. Recently, a number of articles have been published in prominent newspapers and magazines such as the Economist and the New York Times about the existence of a "physics envy" in the social sciences and in particular business schools (Anonymous, 2007; J.L.H.D, 2011; Clarke & Primo, 2012). Far from positive, the "physics envy" is a sign that these disciplines somehow suffer from a sort of inferiority complex, and have a hard time dealing with the complex and embedded nature of the issues they attempt to research while providing the breadth and generalisation qualities often required to gain reputation as an academic. In the context of business research, this actually raises the question of whether research that is carried out is practically useful for practicing managers. Quoted in The Economist (J.L.H.D, 2011), Bent Flyvberg, Professor at Oxford's Saïd Business School, declares that trying to emulate the physics, or natural sciences, paradigm will eventually make the social sciences irrelevant. He further argues for the necessity to account for the context in which certain behaviours are studied and for valuing interpretive qualitative research in this regard. The same calls have been made in OM research to increase the variety of paradigms and methods.

4.2.3 Calls for multiple paradigms and methods in OM

It has been recognised that OM researchers have developed the ability to produce rigorous research, which has strengthened the legitimacy of the discipline within the academic sphere. However, in the eyes of several authors, this development has happened to the detriment of the original connection with

managerial practice (Flynn et al., 1990; DeHoratius & Rabinovich, 2011). The relative absence of post-positivist research in OM and SCM has impeded the development of more diverse theoretical perspectives, which in turn may lead to researchers focusing on the same areas and failing to uncover the richness and complexity of OM and SCM issues (Burgess, Singh, & Koroglu, 2006; Boyer & Swink, 2008; DeHoratius & Rabinovich, 2011).

The calls for more empirical research and alternative paradigms in OM and SCM research are not recent (Meredith et al., 1989; Amundson, 1998) but there seems to be even more emphasis on calling for a diversification of OM and SCM research in the last decade and on reasserting the place of qualitative methodologies in the fields (Näslund, 2002; Voss, Tsikriktsis, & Frohlich, 2002; Boyer & Swink, 2008; Carter, Sanders, & Dong, 2008; Towers & Chen, 2008; Barratt, Choi, & Li, 2011; Kaufmann & Denk, 2011). The main reason advocated for encouraging more empirical qualitative research is that the field is very applied in nature and closely tied with practitioners' experience (Amundson, 1998; Meredith, 1998; Voss, et al., 2002; Towers & Chen, 2008). It seems that authors have responded to the calls for more empirically based research through the use of surveys, which allow capturing snapshots of practices in the fields and have been recognised as the most common methodology represented in OM and SCM journals (Burgess, Singh, & Koroglu, 2006; Boyer & Swink, 2008; Barratt, Choi, & Li, 2011). However, this trend still reflects the attachment of OM researchers to positivist approaches to inquiry. It must be noticed that both qualitative and quantitative methods can be used in a positivist epistemology. When authors encourage variety in empirical methods they want authors to try and embrace the multi-disciplinarity of the field.

In their structured literature review on SCM research, Burgess et al. (2006) explain that the field would certainly benefit from greater paradigm diversity, leading to a plurality of methods, and particularly non-positivist qualitative research, that would allow developing a more comprehensive understanding of the dynamic and complex phenomena of supply chains. Similarly, Boyer and Swink (2008), editors of the Journal of Operations Management at the time, use the metaphor of 'empirical elephants' to explain the value of having multiple research methods in OM and SCM research. They use the well-known story of several blind men encountering an elephant and trying to make sense of what it is, each of them touching a different part of the animal and all together being able to better understand and make sense of the animal as a whole. The authors explain that 'in the same way researchers should not close off any avenue of inquiry that can help describe the OM and SCM elephants' (Boyer & Swink, 2008: 343). On the whole, it appears that authors have not rejected traditional rationalist approaches in OM but have argued for more diversity in fear of the field becoming one dimensional and irrelevant, lacking in creative approaches and therefore failing to uncover all the mysteries that are central to the development of new knowledge (Alvesson & Kärreman, 2007). It is within this broader context that the case for AR gains all its value and relevance.

4.3 Action research for sustainable SCM research

Understanding the prevailing methodological debates in the field is helpful in explaining and justifying the methodological choices made in this research project. Furthermore it is a way of situating this research within the broader OM landscape. In this section, the discussion focuses on presenting the main principles of AR as a methodology, and shows how it fits the nature of the challenges in sustainable SCM.

4.3.1 AR principles: the connection with pragmatism and sustainability

AR is accepted as a valid methodology in other fields such as organisational behaviour but remains underrepresented in OM research (Baker & Jayaraman, 2012). It has been advocated by several academics in OM and SCM (Westbrook, 1995; Coughlan & Coghlan, 2002; Näslund, 2002; Näslund, Kale, & Paulraj, 2010) for it enables developing greater insights into the contextual phenomena and allows for relevant theory building and testing.

4.3.1.1 Defining AR and exploring connections

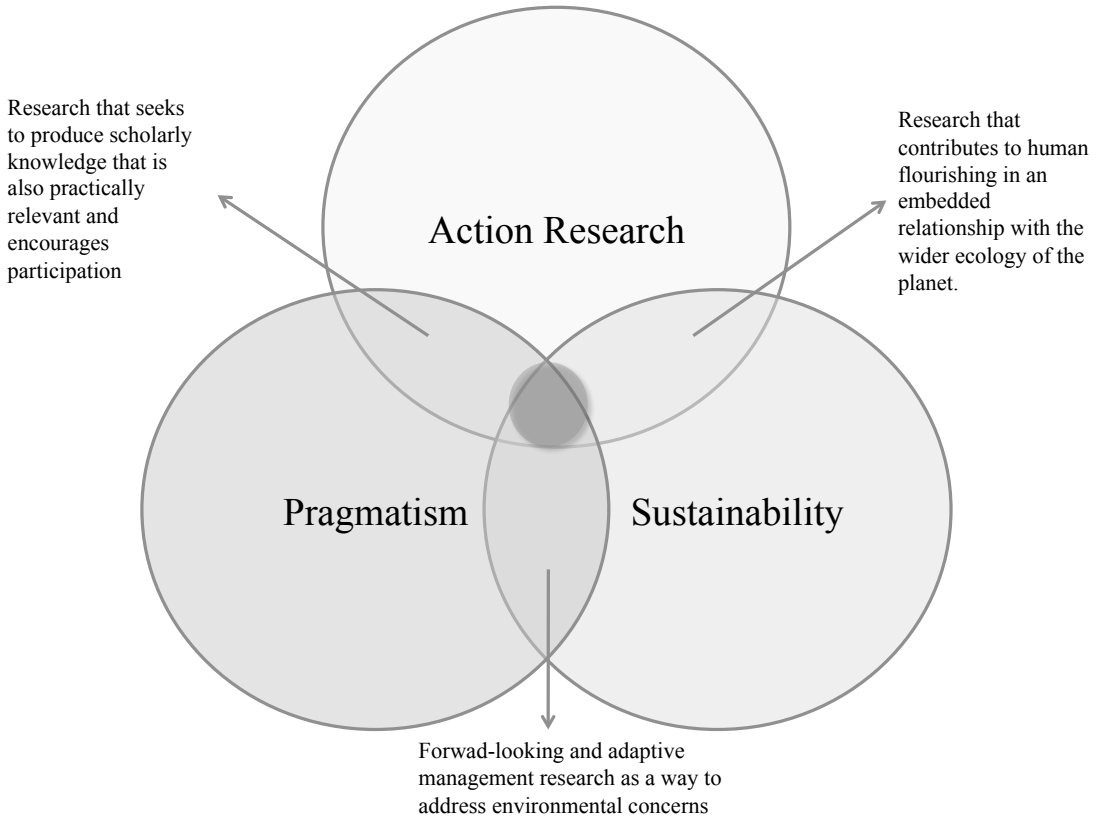
AR is characterised by plurality. There are multiple ways of doing AR and being an action researcher (Cassell & Johnson, 2006). There seems to exist some confusion around what AR is, in part due to the over-use of the term to describe many ways of conducting research without necessarily showing an effort to uncover the AR logic and foundations (Reason & Bradbury, 2001; Barton, Stephens, & Haslett, 2009). The vast majority of authors attribute the origin of AR to the work of Kurt Lewin (1946, 1947a, b). Authors also acknowledge the influence of the work of Argyris and Schön (1974) and Heron and Reason (1986). There is in fact a vast array of influences that have shaped AR and it would be possible to devote an entire chapter to discussing them. Multiple conceptions and definitions of AR have been offered in the literature, but the most recent school of AR, which has embraced this diversity, is embodied by the work of Reason, Bradbury and colleagues (Cassell & Johnson, 2006). The work presented in this thesis follows from Reason and Bradbury's definition (2001) of AR as:

"a participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes (…) It seeks to bring together

action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues pressing concern to people, and more generally the flourishing of individual persons and their communities… A wider purpose of action research is to contribute through this practical knowledge to the increased well-being - economic, political, psychological, spiritual - of human persons and communities, and to a more equitable and sustainable relationship with the wider ecology of the planet of which we are an intrinsic part ” (Reason & Bradbury, 2001: 1-2)

Considering this definition, AR is clearly linked to the idea of developing knowledge to ‘make things happen’ (Cassell et al., 2009: 517), which resonates well with pragmatism and stimulate the need to interrogate what is implied behind the term practical relevance. There is also a strong connection between AR and sustainable development as it places the process of knowledge creation within the context of human-ecosystem interaction, which has been associated with pragmatist thinking as well with concepts such as environmental pragmatism and adaptive management (Reitan, 1998; Norton, 1999). Figure 13 is relatively simple but aims at illustrating the connection between the three domains.

Figure 13. The connection between AR, pragmatism and sustainability (Source: Author)



In order to explore in more depth the connection between the three, the remaining of this section examines the tenets of pragmatism by considering the concepts of *phronesis* and engaged research, and how they relate to AR. It also seeks to offer a critical understanding of purpose in knowledge creation by looking at how ideas of *usefulness* (i.e. "worthwhile purposes") in AR are connected to researching sustainability.

The concept *phronetic* research proposed by Flyvbjerg (2001) comes from *phronesis,* a term borrowed from Aristotelian philosophy, which has commonly been translated as practical wisdom (Flyvbjerg, 2001; Cassell et al., 2009). *Phronesis* in Flyvberg's sense is about interrogating the direction taken by society, and whether it will lead to a desirable future. The primary purpose of such kind of research is to contribute to the development of praxis and to society's wellbeing. Flyvbjerg's

phronesis is related to an older pragmatist tradition that can be traced back to the American thinkers Dewey, Peirce and James (cited in Fendt, Kaminska-Labbé, & Sachs, 2008). Pragmatism seems to have been rediscovered in recent years when calls for more empirical and relevant knowledge in management started to question the traditional approaches to research (Fendt, Kaminska-Labbé, & Sachs, 2008). In particular, pragmatism proposes to re-establish a 'proper relation between theory and praxis' (Dewey et al., 1904 cited in Fendt, Kaminska-Labbé, & Sachs, 2008: 471).

The work of the American pragmatist philosophers is often cited as foundational to the development of AR (Cassell & Johnson, 2006; Eikeland, 2007; Barton, Stephens, & Haslett, 2009). The central tenets of pragmatism and AR are the integration of theory and practice and the reintroduction of values in the realm of scientific inquiry. They position themselves against the traditional positivist value-free stance and reject the separation object-subject instantiated by the researcher-observer. AR, inspired by pragmatism, is a form of normative engaged research. The main characteristics of the AR paradigm are summarised in Table 19, in comparison to traditional positivistic research.

Table 19. Comparing traditional research and AR (adapted from Coughlan & Coghlan, 2002: 224)

	Positivist paradigm	AR – Pragmatic paradigm
Aim of research	Universal knowledge Accumulation of knowledge Theory building and testing	Relevant knowledge Knowledge for change Theory building and testing
Research issues and focus	Abstracted variables Theoretical relevance	Systemic approach Practical issues
Type of knowledge acquired	Universal Covering law	Particular Situational
Nature of data validation	Context free Logic & measurement Consistency of prediction and control	Contextually embedded Experiential Transparency of choices and purpose
Researcher's role	Observer	Insider/Change agent
Researcher's relationship	Detached and neutral	Immersed and engaged

This conception of engaged science is a way for researcher and practitioners to participate jointly in the knowledge creation process and in this way address the 'double hurdles' of relevance and scholarship (Pettigrew, 2001; Van de Ven & Johnson, 2004). The action researcher, immersed in the research context, is often described as both a researcher and a change agent, connecting the world of management practice and that of academic endeavour. Conducting an action inquiry directly raises questions about reflexivity, presentation of research findings, power and participation, which will be further discussed later in this chapter. One of the most challenging aspects of being an action researcher is to develop the ability to reflect upon the process of inquiry and what being 'engaged' means (Chisholm & Elden, 1993; Reason, 2006).

4.3.1.2 Linking usefulness to change and sustainability

The concept of *usefulness* is one that preoccupies many management academics that have acknowledged the existing gap between theory and praxis. For

most of them, *usefulness* means making sure that management research can be applied to and help advance managerial practice (De Margerie & Jiang, 2011). This is of course a primary concern, but I contend that there is a deeper dimension to the notion of *usefulness,* which is intrinsically connected to the normative claims of AR.

AR refers to a more systemic conception of research that is embedded in the wider ecology and plays a role in shaping the context where it takes place. In their definition of the participatory paradigm of AR, Heron and Reason have added a value dimension that they call 'the axiological question about what is intrinsically worthwhile' (1997) through which they examine what constitutes valuable or *useful* knowledge. The meaning of *usefulness* in AR is about interrogating the choices and directions taken in the research and confronting them to the value systems of the researcher and participants, such as what do we mean by *desirable* future? Considering the question of *usefulness* and values clearly resonates with the notion of sustainability articulated in management research.

The connection between AR and sustainable development is most clear when viewing AR as driving change towards a desirable future, which implies reflecting upon the question of how to contribute to human flourishing. While the concept remains essentially debated, from the Brundtland definition presented in Chapter 3 it transpires that embracing the sustainability journey requires questioning current environmental and social practices (i.e. the status quo) in order to advance towards a desired future state (Spash, 2009). The core of the sustainability agenda is essentially *change* of views and practices concerning human-environment interaction (Gladwin, Kennelly, & Krause, 1995). Therefore, the development of knowledge about sustainability is not about stability and regularities, but rather about the identification of levers for change and ways of improving current practice. Sustainable

development therefore not only suggests a shift in conceptualisations in management research to reconnect humankind and the natural world (Gladwin, Kennelly, & Krause, 1995) but most certainly a redefinition of approaches to inquiry consistent with the principles of AR. AR seems to be highly relevant to research addressing the sustainability challenge in multifaceted settings, such as that of supply chains.

4.3.2 AR for sustainable SCM: where can we go?

Building on the arguments that have been presented above and in Chapter 3, this section explores in what ways AR constitutes a relevant and useful approach for SSCM research.

4.3.2.1 The need for intentional and relational research

It has been argued that the suitability of a research approach derives from the nature of the social phenomenon to be explored (Morgan & Smircich, 1980). In addition, researching sustainability in general poses a number of challenges that need to be addressed. Specifically, researchers need to reflect upon what developing and delivering social science for sustainability implies (Peattie, 2011).

In Chapter 3, it was argued that SSCM comprises three core characteristics. It is operational, transformational and relational (see sections 3.4.2 and 3.5). The connection between AR and researching sustainability in SCs is through the notions of intentional transformation and relationality.

Through transformation is implied an intention to change. This relates to the definition of sustaining, which implies a desire to contribute to the preservation of a certain system (Peattie, 2011). This means that research concerned with sustainability is research that 'seeks to contribute to the pursuit of sustainability'

(Peattie, 2011: 23) rather than simply provide accounts about sustainability. Research addressing the sustainability challenge is bound to look into specific practical issues and pathways to improvement towards a more sustainable state. Intention and practicality become inter-related and in that sense, researching sustainability cannot be detached from addressing real-world issues (Peattie, 2011). There is a strong normative aspect to the question of intentionality regarding what constitutes the way to go, which resonates with the issue of usefulness in AR described earlier.

Viewing SSCM research as intentional and relational justifies an AR approach. Authors have acknowledged the connection between AR and systems thinking (Chisholm & Elden, 1993; Westbrook, 1995; Näslund, 2002), which has then translated into the way action researcher address research issues. There is a strong emphasis in AR on the centrality of relationships to advance learning and sustainability and as a way to capture the inter-dependent nature of social-organisational phenomena (Bradbury & Lichtenstein, 2000; Bradbury-Huang et al., 2010). Adopting a relational perspective to research (Bradbury & Lichtenstein, 2000) is about valuing the spaces of interactions and understanding inter-relation. This perspective questions the positivist distinction between subject and objects and re-embeds the researcher within the system.

On the whole, through current dominant methodologies such as surveys and cases studies, SSCM researchers have provided pictures or reports of current practice and offered recommendations at the end of their studies but there remains distance between the research and praxis of SSCM. Further, these methodologies fit within the traditional backward-looking approach to research. I agree with the view that researching organisational sustainability will need new paradigms to question current

practice and for this reason, AR as alternative research paradigm can help address SSCM challenges.

4.3.2.2 Developing and testing relevant theory in SSCM

As mentioned in Chapter 3, the field of SSCM is characterised by a relative absence of theory, and in particular its own theory. AR could contribute to the advancement of SSCM through theory testing and theory building. An important aspect of theoretical contributions in academic fields is the quality of its connection with the empirical reality, or in other words its aptitude to capture the multifaceted reality under study. Several scholars (Alvesson & Kärreman, 2007; Colquitt & Zapata-Phelan, 2007; Van Maanen, Sorensen, & Mitchell, 2007) have acknowledged the relationship between the validity and power of a theory and its relation to empirical reality. The empirical nourishes the conceptual as data is used as evidence to support a theory, and the engagement with practical problems opens up avenues for good theory to emerge (Van Maanen, Sorensen, & Mitchell, 2007).

The complex, practical and dynamic nature of supply activities calls for the involvement of the researcher with the practicing community. In addition to responding to the need for more problem solving oriented research, AR could provide an opportunity to investigate the under-explored aspects of SSCM that we have identified in Chapter 3. The potential of AR for exploring research gaps in SSCM is summarised in Table 20.

Table 20. Potential of AR for researching SSCM issues

SSCM research gaps	Potential application of AR
Lack of research considering the transformational characteristic of SSCM	Unfold and participate in the change process of sustainability in SCs (Cramer, Van Der Heijden, & Jonker, 2006; Klostermann & Cramer, 2007) Explore ways of creating and sustaining inter-organisational learning and knowledge transfer called for by Andersen and Skjoett-Larsen (2009) and Gold et al. (2010) Investigate how to stimulate supply chain innovation for sustainable development (Isaksson, Johansson, & Fischer, 2010)
Lack of focus on the behavioural and human aspects of SSCM Lack of research at micro level	Understand how to address communications gaps in SSC (Ciliberti, Pontrandolfo, & Scozzi, 2008) Explore the exact role of individual managers in implementing SSC practices as they have been identified as key facilitators of SSCM (Hoejmose & Adrien-Kirby, 2012)
Lack of research in "how" SSCM is implemented	Explore the power dimensions of SSCM and their impact on forms of governance and sustainability outcomes (Pullman, Maloni, & Carter, 2009; Alvarez, Pilbeam, & Wilding, 2010) Address strategy development and practical implementation challenges that require working closely with practitioners to develop strategy, tools or frameworks (Koplin, Seuring, & Mesterharm, 2007; Walker et al., 2008; Ashby, Leat, & Hudson-Smith, 2012)

All in all, AR provides the opportunity to develop and test theory at multiple levels of SSCM, which is consistent with the proposed multilevel representation of the research objectives presented at the end of Chapter 3 (section 3.6.5.2).

4.4 Previous AR studies in SSCM

Having provided a background to the epistemological foundations of AR and shown its relevance for researching SSCM, it is interesting to examine the practice of AR as a methodology. Although the case for AR seems relatively straightforward, it has not been identified as a widely used approach to inquiry in previous reviews of SSCM (Carter & Rogers, 2008; Seuring & Müller, 2008; Carter & Easton, 2011).

This is potentially a sign that a contribution can be made by adopting AR, but most importantly this may mean that there are important barriers and challenges that prevent further adoption of this approach in the field.

4.4.1 Approach to review and scope

In order to identify and analyse previous AR studies, as in Chapter 3 the methodological approach of systematic literature reviews (Tranfield, Denyer, & Smart, 2003) was used to search for relevant articles in the journals covering the fields of operations and supply research and business ethics and sustainability research, as shown in Table 21.

Table 21. List of selected journals for review of AR articles

JOURNALS	
OM/SCM	**Sustainability/Business ethics**
International Journal of Operations and Production Management International Journal of Physical Distribution and Logistics Management International Journal of Production Research Journal of Operations Management Journal of Purchasing and Supply Management Journal of Supply Chain Management Supply Chain Management: An International Journal	Business Strategy and the Environment Corporate Governance Corporate Social Responsibility and Environmental Management Environment and Planning A Greener Management International Journal of Business Ethics Journal of Cleaner Production

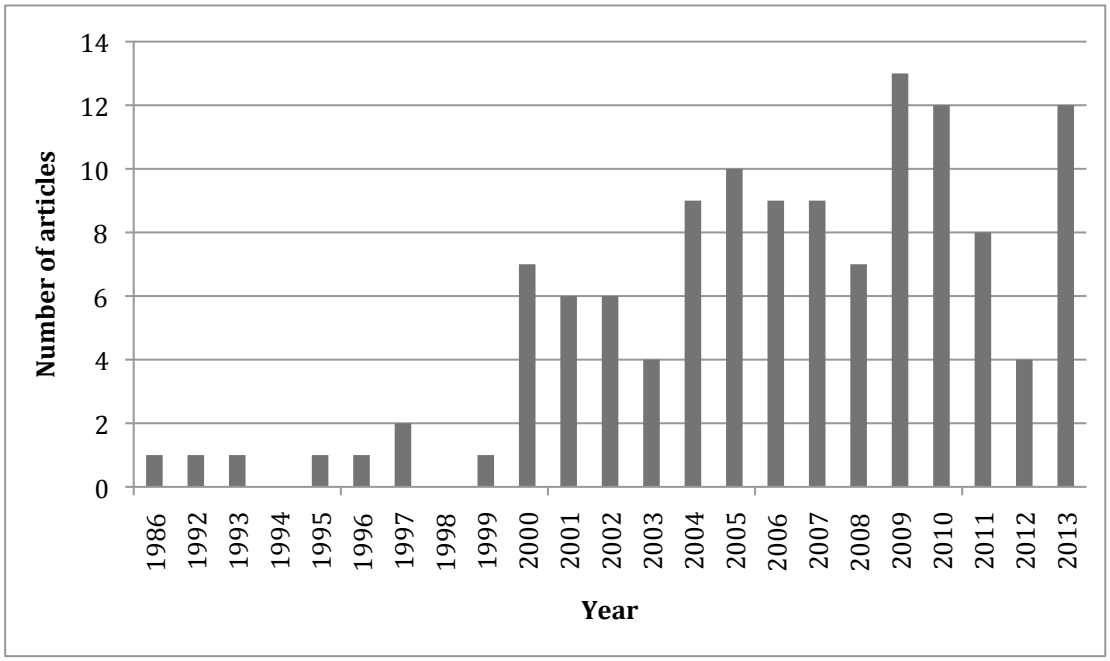
The rationale for focussing on these particular journals is the same as presented in Chapter 3 section 3.3.1. The aim is to offer a broad review of AR in OM and SCM, but some relevant contributions may have been missed due to the exclusion of certain peer-reviewed publications that were not directly related to OM/SCM and sustainability.

No time period was specified when conducting the search in order not to potentially exclude any relevant articles. Each journal online page was used to search for articles among all available issues. Initially the keyword "action research" was searched, and then the articles were selected by reading the abstracts. The aim was to identify papers that used AR as methodology and/or discussed AR extensively as a research approach. In total, 124 papers were selected and analysed further.

4.4.2 Findings from the review of AR studies

The analysis of the 124 selected papers has allowed mapping general trends in terms of evolution of the use of AR across time but also across publications. As shown by Figure 14, the articles span a time period of 25 years, with the earliest article identified dating back to 1986. Articles until 2013 have been included, which corresponds to the last full year when the search was conducted.

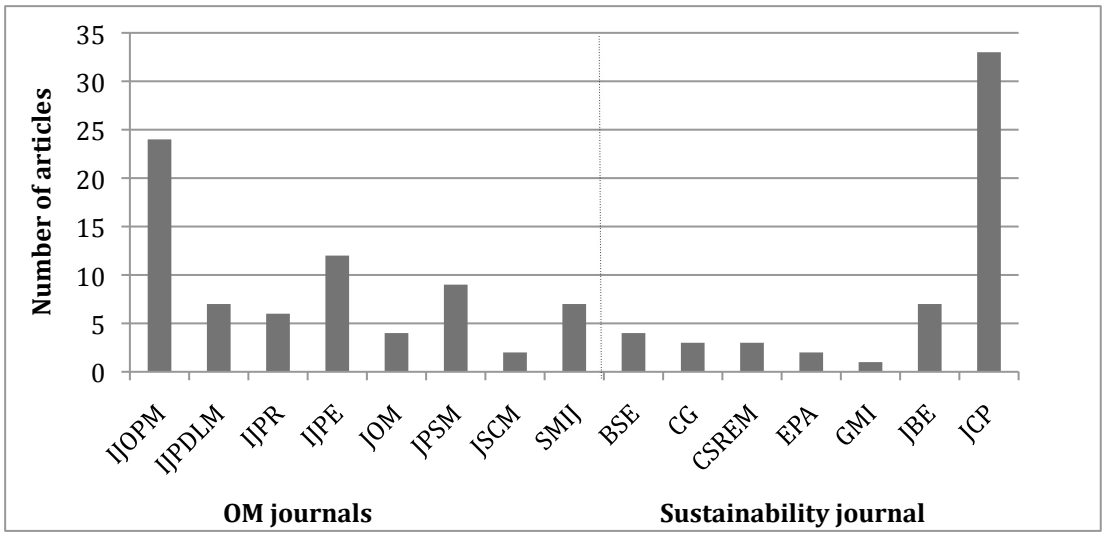
Figure 14. Number of AR articles in OM and SCM over time



One can clearly notice that most of the studies have been published since the late 1990s, and in particular there has been an evident increase since early 2000s. This is quite interesting considering that the emergence of AR dates back to the 1940s with a rise in popularity of the approach management in the 1970s around the work Argyris and Schön (1974). There are several possible explanations for this trend. In CSR/Sustainability literature, the selected journals are quite recent, many of them first published in the 1990s, which can explain why AR studies appear more post-1990. In OM and SCM literature it can be related to the way they have evolved as academic fields. From the end of the 1980s, OM took a more strategic orientation and the focus has been put on areas such as manufacturing strategy, quality management, process design and improvement (Filippini, 1997; Pilkington & Meredith, 2009), which can be associated to the growth of field/empirical research and the possibility for AR to be legitimised.

Another interesting feature that has emerged from the review of previous AR studies is the distribution of these studies across publications as shown in Figure 15.

Figure 15. Number of AR studies per publication



Out of the 124 identified papers, 53 were found in CSR/Sustainability publications and 71 in OM/SCM. The relatively small presence of AR studies across OM and SCM publications shows that it is still considered as a non-traditional research approach compared to other empirical methodologies. AR studies are more likely to be found in publications with a strong practical and problem-solving orientation such as the International Journal of Operations and Production Management and the Journal of Cleaner Production, as clearly stated in their aims and scope.

AR is mainly used is to deal with the introduction and/or development of a tool, model or framework to address specific managerial issues in the research context (51 AR studies in our sample, approx. 41%). Looking more closely at the unit of focus, 40 articles (32%) looked into supply chain issues such as the management of supply chain relationships to improve performance (Morton et al., 2006), supplier network relocation (Danese & Vinelli, 2009), or the development of lean agri-food chains (Taylor, 2006). Within these 40 papers, 8 addressed SSCM topics such as the reduction of environmental impacts in the SC (Mont, 2004) and the integration of environmental and social standards in SCM in the automotive industry (Koplin, Seuring, & Mesterharm, 2007). These 8 AR/SSCM papers were found in the sustainability literature.

There are a number of critical points that can be raised from reviewing previous AR studies. The minimal presence of AR studies in the literature is quite striking as only 124 papers were found out of all the thousands of papers published in the selected journals since their launch. Other authors have noticed the relative scarcity of published AR, in particular in OM/Logistics research (Näslund, Kale, & Paulraj, 2010). There are several potential reasons for the lack of AR in OM journals.

Are there few publications because scholars have not adopted AR widely, or because journals are less receptive to such studies? Below I discuss some alternative interpretations and challenges to AR, and offer up some ways to overcome them.

4.5 Acknowledging and overcoming potential challenges

4.5.1 Issues of engagement and rigour

In conducting AR, the researcher faces a number of challenges. First and foremost, the question of access is central, and specifically there are numerous difficulties to getting the chance for participatory intervention in industry. This is even more critical when considering a SC setting, which requires collaborating with multiple organisations. It is particularly challenging to conduct research in real time, compared to retrospectively, in collaboration with enthusiastic and qualified practitioners (Brauer & Schmidt, 2008; Dumay, 2010; Näslund, Kale, & Paulraj, 2010). Consequently, researchers might find it difficult to engage in AR and favour more traditional methodologies.

Another point is that AR is often criticised for resembling consulting. It is true that some studies in OM and SCM have been labelled AR when they resembled more 'uncritical organisational consulting', lacking of reflection and conceptualisation (Westbrook, 1995; Reason & Bradbury, 2001; Coughlan & Coghlan, 2002; Näslund, Kale, & Paulraj, 2010). This may explain the difficulty for AR studies to be accepted for publication. The AR process is highly practical but also quite unpredictable, compared to traditional research designs.

Several authors have described the main threat to AR becoming widespread as its lack of framework to evaluate quality and rigour, especially with regards to the highly interpretive and emergent nature of AR studies (Coughlan & Coghlan, 2002;

Näslund, 2002). Given the importance attached to questions of reliability and generalisability in academic journals, AR studies may be perceived as failing to match these standards due to their highly embedded and practical outcomes. There is a need for researchers to be able to explain and justify their approach by addressing ethical and quality concerns for AR to become a more recognised research approach (Näslund, Kale, & Paulraj, 2010).

With regards to developing and testing theory from an AR study, the concerns are very much related to those presented by Kaufmann and Denk (2011) about the necessity to develop an evaluation criteria to present rigorous interpretive theory. Arguably, one of the strengths of AR is the empirical richness of the data it provides. In order to ensure the strong connection between practice and theory as well as conceptual rigour, it seems logical to combine multiple data collection methods (Westbrook, 1995; Eisenhardt & Graebner, 2007). Similar to the case study method, one of the strength of AR is the ability to engage in triangulation (Patton, 2002).

Authors have expressed particular concerns with regards to the position of the researcher, who wears both the hat of the academic and that of change agent. The duality of this position is challenging (Coughlan & Coghlan, 2002). In particular, there is a danger of the researcher getting lost in the practical. AR can also be criticised for its value orientation and contextual embeddedness, which implies that inquiry is unlikely to lead to knowledge that can be widely generalised. This highlights the importance for action researchers to be able to find a balance between rigour and relevance that can allow them to deliver practical solutions to managerial issues while being able to produce research that is accepted in the wider academic sphere.

4.5.2 Addressing challenges: first, second and third person research

The response to these challenges very much lie in the skills of the researcher (Coughlan & Coghlan, 2002). Beyond the skills needed to stimulate participation, it is necessary for action researchers to explain their own quality criteria and to reflect on their own practice. While more quantitative research focuses on questions of reliability and validity (Kaufmann & Denk, 2011) the quality process in action research is more context-bound and dependent on personal approach. The involvement of the action researcher in a cyclical process of preparation, participation and reflection guarantees the scientific rigour and reduces the danger of researchers losing their detachment (Pedersen & Olesen, 2008; Näslund, Kale, & Paulraj, 2010). It is important that action researchers make their choices and the research process transparent.

In AR there are three interrelated levels of research: first, second and third person research. Engaging at these three levels is the best way to address potential criticism of AR related to subjective bias and embrace the relational nature of AR (Bradbury & Lichtenstein, 2000). In terms of voice, these levels respectively correspond to the subjective "I" voice, to the interpersonal community/group "us" dialogue, and to the more objectivity-seeking research dissemination about "them" (Taylor, 2004; Reason, 2006; Reason & Bradbury, 2008). While all projects start with a primary focus on one of these levels, action researchers address all the levels at some point.

Traditional research approaches resonate with the concept of third-person research, i.e. where the researcher conducts research from within a community of scholars about subjects he or she does not know and disseminates the results through journal articles to a wide and distant audience (Bradbury & Lichtenstein, 2000).

Second-person research is about the interaction between researchers and the research subjects. By combining the inside knowledge about organisational practices and the general scholarly knowledge of a researcher, the research process leads to developing insights that can be used for change. The quality of the tangible relationships between the researcher and the subjects, and in particular the trust developed as part of the research process, is fundamental (Bradbury & Lichtenstein, 2000; Näslund, Kale, & Paulraj, 2010).

The concept of first person research is explored in much of the AR literature and implies a reflection about one's own position, intent and purposes. It resonates with the concept of reflexivity in qualitative research (Mauthner & Doucet, 2003). Thinking about research in the first person consists in recognising the fact that the research process in itself is very much a life process and impacts on the researcher's views and personal evolution. Self-reflection makes the researcher aware of the particular choices made and provides a chance for examining their roots and consequences. This concept goes against the researcher as an objective individual who is observing the process of inquiry from afar, as explained in the relational perspective. It must be understood that the researcher has an influence on the research and that the research influences the researcher (Reason, 2006; Marshall & Reason, 2007). Quality in AR can be seen as 'taking an attitude to inquiry' and acknowledge one's own value-system and impact on the project, to account for sensitive issues and 'to behave awarely and purposefully' (Marshall & Reason, 2007; Marshall, 2011).

4.5.3 Implications for the thesis

The review showed that AR still is under-represented in OM and SCM but has tremendous potential notably regarding theory testing and understanding 'process' or unfolding of journeys (Westbrook, 1995; Coughlan & Coghlan, 2002; Dumay, 2010). Consistent with this argument is the link between AR and the initial research objectives and questions. There is a clear emancipatory quality to research questions that initiate an AR project, and they are almost always of the kind 'how can we improve this situation?' (Reason & Bradbury, 2008). The overarching question that has been presented at the end of Chapter 2 is of that nature.

Another important implication for this research is the necessity to ensure the transparency of the research process in order to respond to concerns over the messiness, often doomed as unscientific, of AR. This is one of the main reasons that have motivated the choice of relatively untraditional thesis format that would do justice to the engaged and emerging nature of the research project. Finally, it is also important to define quality criteria that can fulfil the reliability requirements of rigorous academic research. The methods that have been used to ensure trustworthiness and relevance in this research will be described in the next section of this chapter, which explores the actual research design.

4.6 Research design

In this section, details about the practical application of AR in this research are presented. The research process has been emergent and open, which means that although the broad focus had been set at the beginning, research questions and outcomes have emerged and evolved with time, in the light of findings and literature (Chisholm & Elden, 1993). This section may falsely convey the impression of a predefined and linear research design, where choices and steps were determined a-priori. There might also a possibility to believe that a primarily deductive approach was adopted. However both of these assumptions essentially contradict the nature of the AR process. The primary aim of this section, i.e. how it needs to be read in the context of this thesis, is to offer a complete overview of the research phases, methods and levels of analysis in this research. The subsequent chapters in part II, The Deep Dive, will provide additional and complementary details about methods and analysis employed at each stage.

4.6.1 Research cycles

An important aspect of AR is the analysis of the context in which the research takes place and the discussion about the unit of analysis (Coughlan & Coghlan, 2002; Näslund, Kale, & Paulraj, 2010). The careful framing and understanding of the context is a first step towards more 'actionable' involvement (Reason & Bradbury, 2008). In Chapter 2, the collaboration with PepsiCo and nature of the problem to be addressed were described extensively. In other words, the context, practical relevance of the research, and hence its natural inclination towards AR, have been established. The other concern of AR is to produce knowledge that is theoretically meaningful and will inform a broader community of academic. As a consequence, it

is important to devote time to exploring how the study presented in this thesis also responds to the requirements of rigorous scientific inquiry and can help theoretical development (Näslund, Kale, & Paulraj, 2010).

4.6.1.1 Qualitative research design

AR can take different forms and follow either a qualitative, a quantitative or mixed approach (Cassell & Johnson, 2006). In this research, a qualitative approach to the inquiry has been chosen, which has allowed us to gain greater insight into the complexity of the phenomenon within its context and to explore the latent dynamics of organisational life (Argyris, 1993; Lüsher & Lewis, 2008). I have adopted an iterative approach to data collection, which fits the emerging nature of the study (Whiteman & Cooper, 2011).

It has been argued that AR resembles case study research as it allows for situational and context-specific factors to be considered and for capturing the connectedness and embeddedness of the relationships (Pfeffer, 1981; Mintzberg, 1983; Voss, Tsikriktsis, & Frohlich, 2002). Yin (2003: 12) actually defined the case study as "an empirical enquiry that investigates a contemporary phenomenon within its real life context". Näslund et al. (2010) argue that AR as a research strategy can fulfil the purposes of case study research, namely discovery, description, mapping and relationship building. The main distinction between AR and traditional case study research is its change orientation and emergent/cyclical approach. AR provides the opportunity to understand meanings, social processes while being a platform to address the practical issues faced by both the organisations involved. In this sense AR studies, similar to case studies, constitute rich settings for theory testing and theory building (Yin, 2003; Eisenhardt & Graebner, 2007).

The primary motivations for adopting a qualitative design lie in the nature of the research issues to be studied. It has been shown earlier that the dynamics of each supply chain are unique and emerge from the interaction of idiosyncratic actors in local situations (Gold, Seuring, & Beske, 2010). This is consistent with the view of SC as a social dilemma (McCarter & Northcraft, 2007) where it is important to understand the nature and contextual conditions of interactions between actors. The way in which the sustainability agenda is implemented in this context remains an under-explored phenomenon, which therefore confirms the suitability of a qualitative approach that can capture 'how things work' in an inter-organisational context (Watson, 2011). With the added practical change orientation of the research, it was necessary to adopt a research design that would not only provide enough in-depth understanding to offer useful recommendations but that would also be flexible enough to evolve as the study progressed. The very nature of qualitative inquiries can enable organisations to understand interdependencies and facilitate change (Näslund, 2002). Furthermore, as this research involved working with PepsiCo's suppliers, it seemed important to move away from the impersonal quantitative approach that has been the main form of interaction between PepsiCo and its suppliers around sustainability (e.g. questionnaires and data collection explained in Chapter 2).

A strong criticism of qualitative research that extends to AR is that it only provides access to the idiosyncratic settings of single organisations, which would then result in narrow and overly complex theoretical developments (Eisenhardt & Graebner, 2007; Näslund, Kale, & Paulraj, 2010). This is certainly a real danger of these kinds of studies when considering them from a positivist perspective, which values generalisations and replication. From an interpretive and pragmatist point of

view, the embedded nature of qualitative studies and AR is what provides the strength of theoretical insights and enables the researcher to draw conclusions that are relevant to the research participants.

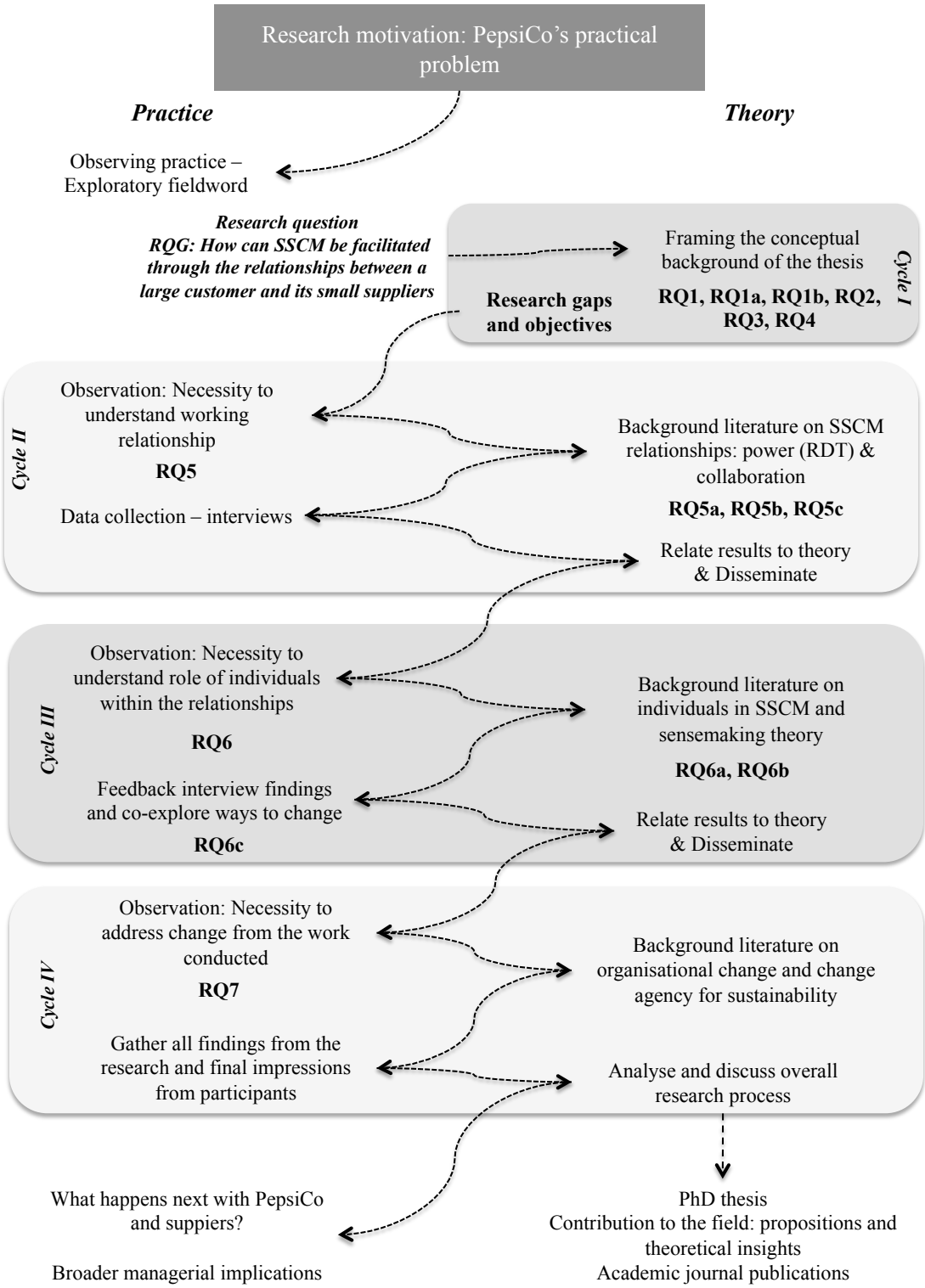
4.6.1.2 Abductive approach

As a first-time action researcher, the neatness and orderly flow of the AR cycles presented in the literature seemed somehow complicated to implement and at best partly achievable. It also suggested a planned rather than emergent approach, which is primarily due to the depiction of the cycles. Not to be misunderstood, it is important to clarify that when distinguishing between emergent and planned, I am not suggesting that in an emergent research process *anything goes* and there is no design involved. However, following the views of Chisholm and Eden (1993) and Eden and Huxham (1996), I am wary of a prescriptive approach to AR and would highlight the importance of context in providing "the ground for understanding phenomena in the system but also guiding the process along certain paths and creating expectations and constraints about what actions or activities are appropriate or inappropriate" (Chisholm & Elden, 1993: 295-296)

So it appeared that a more simple way of looking at the AR process was to conceive it as a continuous interplay between phases of research and phases of intervention (Koplin, 2005) in a context of continuous engagement in the field, resembling ethnographic studies (Cassell & Johnson, 2006). There is a clear interaction between theory and empirical evidence in this process that is characteristic of an abductive approach (Kovács & Spens, 2005; Towers & Chen, 2008). In this project, this has meant that although prior theoretical knowledge has informed the early involvement alongside participating organisations, further

empirical observations have opened new lines of inquiry (as detailed in the previous section) and motivated the search for suitable or matching theories (Kovács & Spens, 2005). This process is illustrated in Figure 16, revealing where the research questions have emerged and showing the interplay between practice and theory.

Figure 16. Abductive research process (Source: Author)



4.6.1.3 Units of analysis and theoretical lenses

Conducting research alongside PepsiCo UK and their agricultural suppliers has offered the opportunity to explore SC relational dynamics around the implementation of sustainability initiatives at multiple levels of analysis. Essentially, this AR project is consistent with an embedded single case study design (Yin, 2003). This means that within a single case, attention is paid to multiple logical sub-units of focus or analysis (Saunders, Lewis, & Thornhill, 2007). While the overarching research question established in Chapter 2 has guided the overall AR process, specific aspects of relational dynamics of SSC have been explored through the research. Data or evidence to answer the research questions has been collected throughout the process and gathered for analysis as highlighted in the abductive research process.

The primary level of focus started at the level of inter-organisational relationships between PepsiCo and the suppliers. The richness of the evidence and depth of the insights quickly opened new perspectives and lines of inquiry as depicted in Figure 16 (i.e. additional research questions). The analysis was conducted iteratively, with a multilevel picture of sustainable supply chain relationships emerging as the research progressed.

These levels are explored in the second part of this thesis and constitute the different cycles of inquiry. This embedded approach means that we have been able move beyond the macro approach by offering a multilevel perspective on relationships for sustainability in supply chains. Inter-organisational dynamics for sustainability are considered in Cycle II and specifically in the buyer-supplier-supplier triad. Cycle III focuses on the micro level to consider the role of individuals within those relationships. Finally Cycle IV considers SSCM as a change process

with individuals contributing as agents of change. In essence, these perspectives constitute the different units of analysis within the research. In order to shed light on the relational dynamics at these different levels a number of theoretical perspectives have been applied. The different levels of inquiry, units of analysis and corresponding theories are summarised in the table below.

Table 22. Embedded levels of analysis, theories and methods in this research

Cycle of inquiry	Units of analysis	Theoretical perspectives	Methods	Thesis chapter
II. Inter-organisational relationships for SSCM	Triad buyer-supplier-supplier	Power - Resource Dependency Perspective (Pfeffer & Salancik, 1978) – vs. Collaboration - Relational theory (Dyer & Singh, 1998)	Semi-structured interviews	5
III. Individual interactions on sustainability within relationships	Individuals' sensemaking processes	Sensemaking (Weick, 1995)	Workshops	6
IV. Change process of SSCM and the role of individuals	Change agents and change process	Organisational change for sustainability (Dunphy, Griffiths, & Benn, 2007) and change agency (Caldwell, 2006)	-	7

4.6.1.4 Application and discussion of methods in the thesis

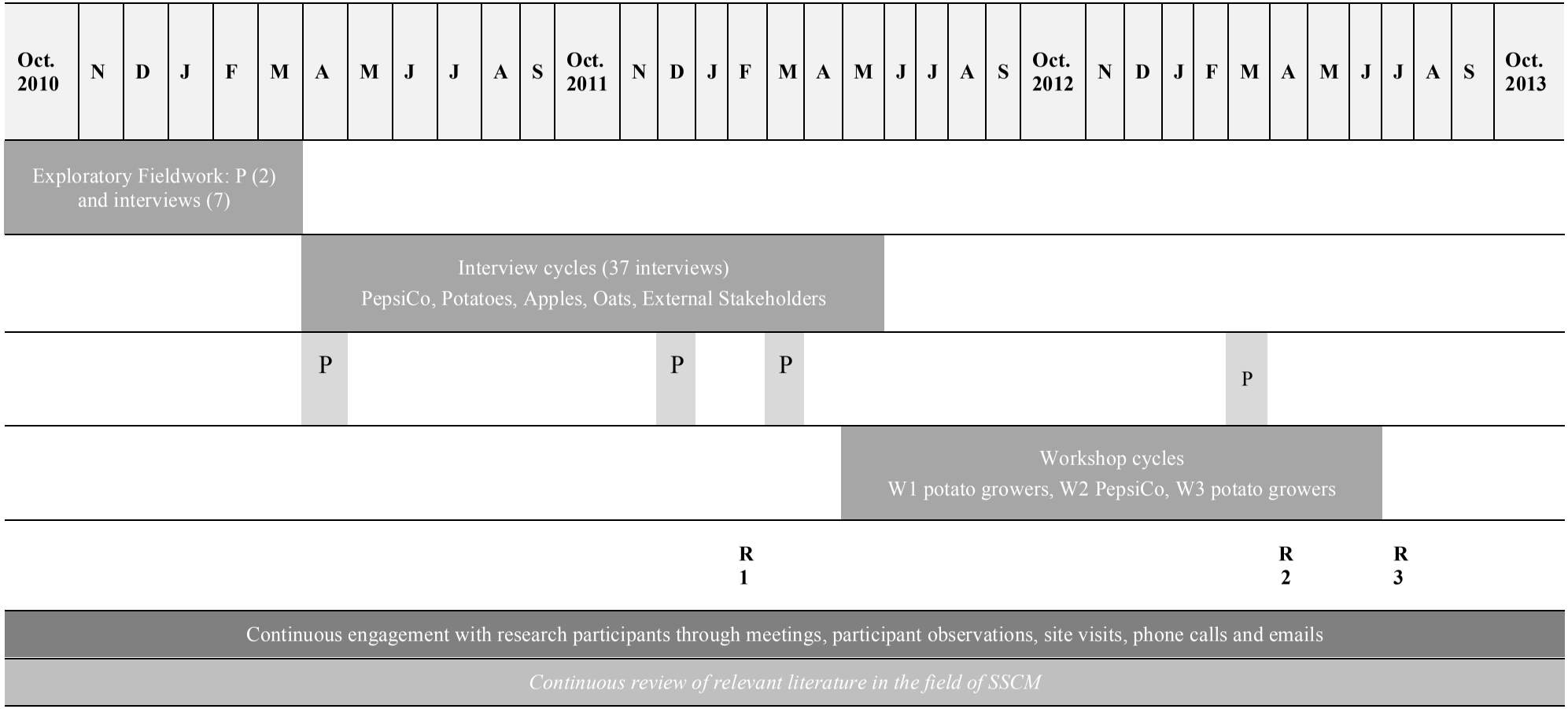
The aim of this chapter is to provide an overview of the methodology and research design adopted in this thesis. Additional details about the data gathering and analysis methods applied in each cycle of inquiry are discussed in the corresponding chapters in the Deep Dive. The table above summarises where specific methods have been applied and will be discussed in the remainder of the thesis.

4.6.2 Empirical evidence: data collection methods

The process of data collection has been continuous, both formal and informal. This reveals the emergent aspect of participative qualitative research, which focuses

as much as it develops in naturally occurring contexts and remains open to unanticipated events (Denzin & Lincoln, 2000). Van de Ven and Johnson (2006) accurately point out that traditional research designs tend to only capture the information that people are willing to share through formal and shallow interviews. They argue that engaged research over an extended period of time will provide greater penetration into the subject matter as a result of mutual trust. In this thesis we report on accounts collected from the participants as well as on the more experiential aspects of working as researchers alongside a large company in the context of driving sustainable change in their SCs. The next subsection shows the entire fieldwork conducted in this research.

4.6.2.1 Overview of fieldwork



* P= Participant observations in meetings R= Interim progress Reports communicated to research participants (update on findings and next stages)

Table 23 below provides details of all the fieldwork conducted through this research project since October 2010, i.e. the beginning of the PhD.

Table 23. Details of fieldwork since Oct. 2010

Interviews	*PepsiCo (22)* Preliminary (7) Interviews (15)	February 2011 – May 2012
	Agri Suppliers (15) Potatoes (10) Apples (2) Oats (3)	
	Other Stakeholders (7) Agricultural Consultancy (3) NGOs (2) Other large MNCs (2)	
Participant Observations in Meetings	Sustainable Food Lab Sponsors Meeting	January 2011
	Growers Forum	March 2011
	Growers Meeting	August 2011
	Meeting Company's European Sustainability Community	December 2011
	Sustainability Trade Show	March 2012
	Cool Farm Institute	March 2013
Workshops	Growers workshop I (5 participants, 2 facilitators)	May 2012
	PepsiCo workshop (4, 1)	May 2013
	Growers workshop II (5, 1)	June 2013
Documents	Company reports, internal documents, newsletters, webpages	-
Informal	Field notes & diary, conversations, site visits, phone calls, email communications	-

4.6.2.2 Primary and secondary data collection methods

Table 24 below describes the different types of evidence that are included in this research and shows that multiple data sources are combined to ensure the overall trustworthiness and conceptual richness of the project (Shah & Corley, 2006;

Eisenhardt & Graebner, 2007). One of the strength of AR projects is the ability to engage in triangulation. In this research, we have engaged primarily in two types of triangulation (Patton, 2002): triangulation of data sources, as shown in this section, and theory triangulation, described in 4.6.1.3.

Table 24. Description of data collection methods used in the research

	Methods	Description
PRIMARY	***Semi-structured interviews and conversations***	Interviews and reflective conversations constitute a critical source of information. They provide the opportunity to address and discuss relevant issues in depths and get meaningful narratives from the interviewees (Gilham, 2005; Silverman, 2006). In particular, the use of semi-structured interviews eliciting stories is a critical component of AR (Reason & Bradbury, 2008)
	Workshops	Participatory workshops with the primary stakeholders were held after the interview cycles in order to collectively reflect on the themes that had emerged and identify further lines of inquiry. The main purpose of a workshop is to bring participants together to discuss issues and create an opportunity of dialogue and joint working. Group methods facilitated by the researcher are a key component of participative methods such as AR (Heron, 2004)
SECONDARY	***Observations***	In AR, the researcher engages in observation throughout the project and is a way to immerse in the social situation under study. It serves to understand the role of the different actors, the type of activities they engage in and the dynamics of their interactions. It is an opportunity to understand the power mechanisms at play and take into account the influence of the context on the experience (Hammersley & Atkinson, 1995; Reason & Bradbury, 2008)
	Researcher's journal	Since the beginning of the research, I have kept a diary that contains impressions, feelings and reflections about the research project as it goes along and in particular specific events that I intend. It is also a tool for self-reflection and analysis a posteriori of what happens. As the research progresses, I have included more personal concerns and ideas in the diary, which shows my influence on the project as much as its influence on me.

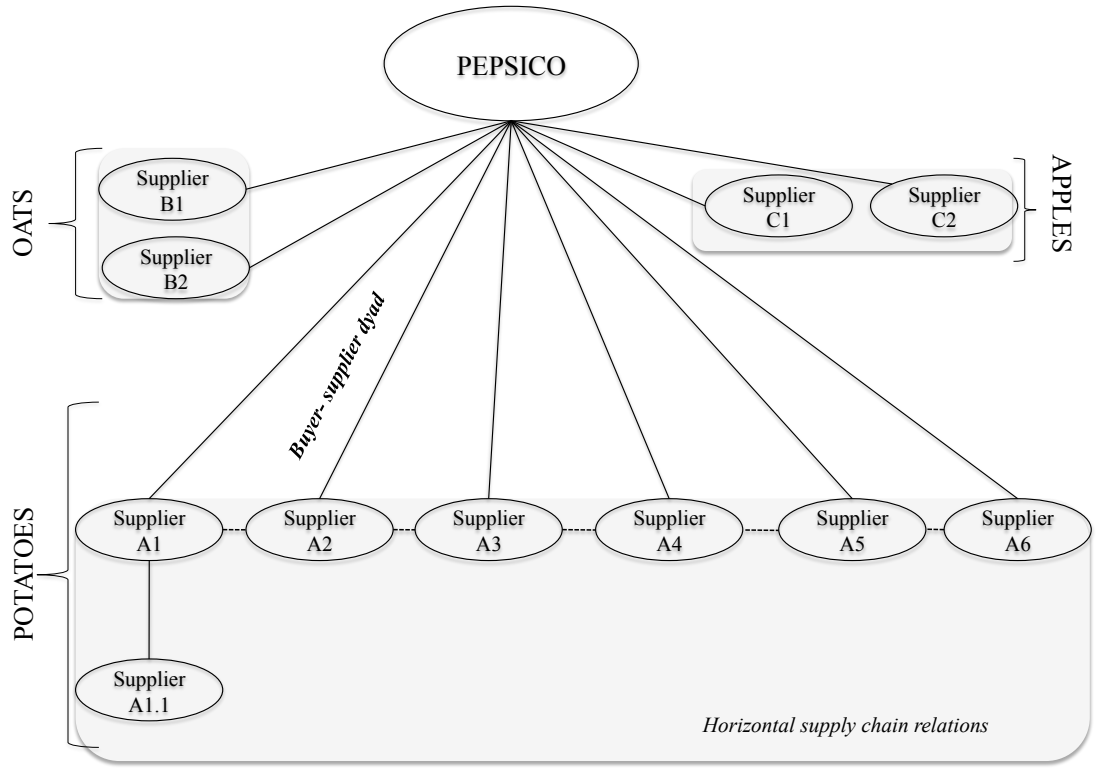
	Formal and informal feedback	Feedback is an important part of AR as it is an opportunity to present the data gathered to the organisation and the participant and reflect upon it (Coughlan & Coghlan, 2002). Feedback seeks to consolidate the data in an inter-subjective manner (Barton, Stephens, & Haslett, 2009). Here a distinction between formal and informal feedback is introduced to differentiate between the feedback, which proceeds from the AR cycle, and the feedback that is gain more informally through various conversations with academics and practitioners all along the research process.
	Documents	A lot of background understanding and contextualisation does emanate from secondary sources of documents, e.g. company reports, presentations, newsletters, etc. These documents are tangible ways in which a researcher can find the meaning attached to certain events, initiatives, decision, etc. (Silverman, 2006)

4.6.2.3 Research participants

In qualitative research, the question of sampling is intrinsic to the question of quality. In AR, the sampling strategy goes beyond selecting informants for theoretical purposes and includes concerns about the ability of informants to participate in further inquiry cycles. This relates to the idea of addressing second and third person research simultaneously. The latter calls for a theoretical sampling approach, in line with case study research (Eisenhardt, 1989), to respond to the question 'what is done to capture all relevant information?' In this sense, theory guides the process of selection. The former on the other hand, is about participation and change, responding to the question 'to what extent and in what ways are the stakeholders who are affected and can influence the research issue involved?' Only by paying attention to both can the research claim to offer a solid contribution to knowledge while leading to meaningful change.

With these concerns in mind, it was decided to focus on the relationships between PepsiCo and 11 small agricultural suppliers in three distinct supply chains (A potatoes, B oats, C apples) as shown in Figure 17.

Figure 17. Map of dyadic and horizontal relationships (Source: Author)



The aim was to be able to analyse a number of relationships that would provide enough comparative evidence for the research without compromising on the depth of the findings. Supplier participants were selected not because they were the 'best-behaving suppliers', i.e. suppliers that were the most compliant and/or achieved the best results with regards to sustainability goals, but because they represented important suppliers in the different chains. Importance was defined in terms of share of supply, position as head of supplier groups, and/or relational history with PepsiCo (see Table 25). Horizontal supplier relationships were also observed, especially in the case of potatoes (A) as illustrated by the links between suppliers on Figure 17. The suppliers included as participants in the research offer a representation of 100% of supplier groups in both A and B, and there is only one supplier missing in C.

Table 25. Description of participating companies

	Description	Ownership	% turnover Attributed to PepsiCo	Annual Turnover 2010	Number of Employees	Length of Relation with PepsiCo	Size (European Commission, 2003)
PepsiCo	Multinational food & drinks manufacturing company	Public	N/A	$58bn	> 5,000 UK	-	Large
Supplier A1	Local merchant, supplier and packer of crop A	Private (family)	35%	< £35m	< 250	> 40 years	Medium
A1.1	Local vegetable and cereal farmer	Private (family)	35%	< £500k	< 10	> 10 years	Micro
A2	European vegetable and cereal farming group	Private	6%	< £30m	< 250	> 40 years	Medium
A3	Local vegetable and cereal farmer	Private (family)	90%	< £3m	< 50	> 30 years	Small
A4	Local vegetable and cereal farmer and merchant	Private (family)	20%	< £5m	< 50	> 30 years	Small
A5	Local grower group of crop A	Private	40%	< £8m	< 50	> 40 years	Small
A6	Local vegetable farmer and packer	Private (family)	40%	< £40m	< 250	> 30 years	Medium
B1	Regional agricultural merchant and supplier	Private (family)	3%	< £40m	< 250	> 20 years	Medium
B2	Local vegetable and cereal farmer	Private (family)	10%	< £8m	< 10	> 10 years	Small
C1	Local crop C merchants	Private	3%	< £8m	< 50	> 10 years	Small
C2	Local crop C producer	Private (family)	40%	< £8m	< 50	> 30 years	Small

4.6.3 Analysis and reporting

The three levels described in section 4.5.2 form part of the overall analytical and reporting process of the research as described in Table 26.

Table 26. Three levels of AR in this research

First-person research	Second-person research	Third-person research
Self-reflection and analysis of my involvement	*Analysis for practice and change*	*Conceptual analysis and research dissemination*
Inquiry is an individual journey Exploration of my position, my purposes and meaning Acknowledging my impact on the research Defining the nature of my involvement ***The researcher's diary***	Action related constructs for the analysis Data collection and presentation to stimulate reflection and discussion among participants Capturing and presenting the diverse perspectives Researcher's involvement is about facilitating the debate and development of practical solutions ***Findings from interviews and observations used in participatory workshops.***	Propositional knowing: conceptual background and discussion of the research Learning from the research is valuable to community of academics Combination of existing and emergent theory to analyse data Dissemination of research findings in academic writing/presentation ***Units of analysis explored in different academic papers and throughout this thesis***. ***Link with the literature***

4.6.3.1 Second & Third-person: Analysis for practice and theory

This research primarily focuses on second and third-person research, and the subsequent chapters will describe the theoretical and practical implications of the research. Practically this means that the discussion of findings is broken into impacts for us as a collaborative inquiry group, traditionally labelled as managerial implications, and impacts for the development of knowledge in SSCM, i.e. theoretical implications. Another way of formulating this amounts to viewing the results of the research as having implications on both *the doing* and *the knowing* of SSCM.

This research acknowledges the role of existing theories in framing and approaching the problem, but it does not constrain theory development, as constructs also emerge in the field (Eisenhardt, 1989; Miles & Huberman, 1994; Barratt, Choi, & Li, 2011). The process of analysing the data has therefore been consistent with the abductive approach described earlier. The specific approaches to data analysis, such as coding, are described in the relevant Deep Dive chapters as described in section 4.6.1.4.

Overall, the analysis has taken into account "the meanings that people place on events, processes and structures of their lives" (Miles & Huberman, 1994). The analysis process also took into account another important aspect AR: its participative longitudinal orientation. By participative longitudinal, I mean research that occurs over an extended period of time during which the researcher explores and is involved in certain aspects of organisational change (Pettigrew, Woodman, & Cameron, 2001; Van de Ven & Johnson, 2006). This has implications in terms of analysis as the dimension of time and change must be included and reflected upon. This will be further explored in Chapter 7.

Several interim reports were written and shared with the research participants in order to communicate the findings as they evolved. This was shown in the Figure in section 4.6.2.1. In terms of dissemination of this research to the wider academic community, the cycles of inquiry have served to write several academic papers. The chapters in this thesis partly draw on these works, presented at academic conferences, under review or accepted for publication. This evidences the conceptual relevance of this work. Full references are provided in the table below, with links to the relevant chapters.

Table 27. Research papers from this thesis

	Chapters	Associated references
I. The Encounter	**Chapter 3** Framing the conceptual background	**Conference paper** Touboulic, A. & Walker, H. 2011. Theoretical perspectives on sustainable supply chain management: a review of the literature. *20th IPSERA Conference, April 2011, Maastricht, NL.*
		Journal article Touboulic, A. & Walker, H. Theoretical perspectives on sustainable supply chain management: a review of the literature. *International Journal of Physical Distribution and Logistics Management* Special issue on "Reviewing Literature in SCM and Logistics", Accepted (ABS 2)
	Chapter 4 Methodological considerations and research design	**Conference papers** Touboulic, A. & Walker, H. 2012. Researching sustainable supply chain management using action research. *Academy of Management, August 2012, Boston.*
		Journal article Touboulic, A. & Walker, H. A Relational and engaged approach to Sustainable Supply Chain Management: The potential of Action Research. *Under review at Human Relations* as of 1 *April 2014 (ABS 4)*
II. The Deep Dive	**Chapter 5** Understanding the working relationship between PepsiCo and its suppliers	**Conference papers** Touboulic, A. & Walker, H. 2014. Love me, love me not: Collaboration in sustainable supply chains. *23rd IPSERA Conference, April 2014, Pretoria, South Africa.* Touboulic, A., Chicksand, D. & Walker, H. 2012. Understanding power in sustainable supply chain relationships. *21st IPSERA Conference, April 2012, Naples, Italy.*
		Journal article Touboulic, A., Chicksand, D. & Walker, H 2014. Managing imbalanced triadic buyer-supplier-supplier relationships for sustainability: A power perspective. *Decision Sciences Journal, 45 (4) (ABS 3)*
		Practitioner journal Touboulic, A., Chicksand, D. & Walker, H. 2012. Power in large buyer–small supplier relationships in sustainable supply chains. *Rivista Piccola Impresa/Small Business, n°2/2012*
	Chapter 6 A sensemaking perspective on the role of individuals in SSCs	**Conference paper** Touboulic, A. & Walker, H. 2013. Sensemaking in sustainable supply chains: Exploring inter-organisational processes and meanings through stakeholders' perspectives. *22nd IPSERA Conference, March 2013, Nantes, France.*
		Journal article Touboulic, A & Walker, H. A sensemaking perspective on sustainable supply chain management. *Under review at Journal of Operations Management (ABS 4)*
		Practitioner journal Touboulic, A. & Walker, H. 2014. Making sense of sustainable supply chains. Invited paper for the *EIPM Journal of Supply Excellence.*

	Chapter 7 Change process of SSCM and the role of individuals	**Conference papers** Touboulic, A., Walker, H. & Carter, C. 2013. In, out and across: Change agents shaping the sustainable supply chain. *Academy of Management, August 2013, Orlando FL.* Touboulic, A. & Walker, H. 2013. Change agents in sustainable supply chains: An insider perspective. *20th EurOMA Conference, Dublin, Ireland*

4.6.3.2 First-person: Self-reflection and analysis of my involvement

In terms of first person research, I have included extracts of my reflective accounts and the diary I have kept as an action researcher, throughout this thesis in boxes such as the one below. I have added a colour to distinguish them from the other tables in the thesis that I have used to explain or emphasise some concepts. It seems that the colour is somehow doing justice to the more creative and personal dimension of a first-person voice.

Diary - March 2011

DIE SLOWLY, by Pablo Neruda (1904-1973, Chile)

(English translation of the poem Muere Lentamente)

Those who become the slave of habit, who follow the same routes every day, who never change pace, who do not risk and change the colour of their clothes, who do not speak and do not experience, die slowly.

Those who shun passion, who prefer black on white, and dotting their "it's" to a bundle of emotions, the kind that make your eyes glimmer, that turn a yawn into a smile, that make the heart pound in the face of mistakes and feelings, die slowly.

Those who do not turn things on their head, who are unhappy at work, who do not risk certainty for uncertainty, thus to follow a dream, those who do not forego sound advice at least once in their lives, die slowly.

Those who do not travel, who do not read, who do not listen to music, who do not find grace in themselves, die slowly.

Those who slowly destroy their own self-esteem, who do not allow themselves to be helped, who spend days on end complaining about their bad luck, about the rain that never stops, die slowly.

Those who abandon a project before starting it, who fail to ask questions about subjects they don't know, those who don't reply when they are asked something they do know, die slowly.

Let's try and avoid death in small doses, reminding ourselves that being alive requires an effort far greater than the simple fact of breathing. Only with ardent patience we

reach a wonderful happiness.

When reading this poem by Pablo Neruda I found myself reflecting on my research journey and why I started in the first place. My understanding of the notion of happiness transmitted by this poem is happiness as meaningfulness, sense of purpose and perseverance, which all match my conception of research and of the process of inquiry. It also resonates with the adoption of an action research methodology, which requires reflection about our definition of purpose and meaning. As a researcher, I do not detach myself from the inquiry as I try to articulate and make sense of my and people's experience of the world and discover its wonders.

This being said, it is clear that research is not value free and it is what the researcher makes of it. Neither is it an easy journey; valuable research is the product of commitment and efforts, which themselves must be nourished. This poem therefore carries reflections about the importance of a researcher's integrity.

4.6.4 Ensuring research quality

4.6.4.1 Quality in AR

The question of quality is central to any research project and particularly critical in AR (Marshall & Reason, 2007). It was shown earlier in this chapter that one of the main challenges for AR researcher is to demonstrate that their approach is academically rigorous. While more quantitative research focuses on questions of reliability and validity (Golafshani, 2003), many authors have debated the criteria upon which to judge qualitative research. This discussion straddles the fields of organisational research but there have been specific contributions in OM strengthening the case for qualitative methods (Voss, Tsikriktsis, & Frohlich, 2002; Barratt, Choi, & Li, 2011; Kaufmann & Denk, 2011). A number of attempts have been made to develop procedural approaches to evaluate qualitative research. Shah and Corley (2006) defined a 'trustworthiness' criteria for qualitative research, which has arguably become the most adopted evaluation criteria by qualitative researchers.

The quality process in action research is more multidimensional, context-bound, dependent on personal approach and needs to address concerns about practical relevance (i.e. usefulness) (Koplin, 2005; Gearty, 2009). It is therefore neither possible nor desirable to simply transfer the quality criteria that have been defined and applied for more mainstream quantitative and qualitative research to AR. It is worth mentioning here that a number of action researchers have also attempted to define a quality process for AR. Some of the most interesting contributions are summarised in Table 28.

Table 28. Different quality criteria for AR

Authors	Quality criteria
Marshall and Reason (2007)	Quality in AR as "taking an attitude to inquiry" Qualities necessary: curiosity, willingness to articulate and explore purposes, humility, participation and radical empiricism Principles to apply: paying attention to framing and its pliability; enabling participation to generate high quality knowing, appreciating issues of power; working with multiple ways of knowing; and engaging in, and explicating, research as an emergent process.
Koplin (2005)	Quality criteria for AR is distinct from that of qualitative research due to the participatory and interactive nature of the research process Adoption of the criteria developed by Gruschka (1976, cited in Koplin, 2005: 386) revolving around four conditions: communication, intervention, transparency and relevance
Näslund et al. (2010)	Framework for AR should ensure rigour and relevance Distinction between three phases of the AR process: design, data collection and analysis, and definition for each phase of a set of aspects to ensure quality.

4.6.4.2 Quality criteria applied in this research

In this research, reflection about quality and the research design started very early on as part of my personal journey as a young action researcher. This thought process was mainly expressed through more or less reflective questions, as shown below in the diary extract.

Diary - "Research thoughts and questions", February 2011

Where and at what moment does action research start? Is an action research PhD a succession of action cycles from the literature review to the actual implementation of collaborative action?

How can I combine the various theories that deal with sustainability, organisational change, leadership, learning and social network in one single research project in order to make the most clear and useful contribution?

Who are the parties involved in the research process? What can each one bring to the project and how to make the most of their contribution?

Where do I stand as an action researcher sponsored by a commercial organisation? How to ensure quality and objectivity?

How does my own identity influence the research project - its orientation, definition and outcome?

What does theory and more broadly literature tells me about action research? The practices, the groundings, the methods, the challenges?

In the end, the 'trustworthiness criteria' for qualitative research as described by Shah and Corley (2006) was combined with a usefulness and ethics criteria that recognises the action/change and problem solving dimension of AR (Koplin, 2005; Näslund, Kale, & Paulraj, 2010). A detailed description of this trustworthiness, usefulness and ethics framework is given in the table below, which shows how it has been applied through the different research phases of this AR project (adapted from Näslund, Kale, & Paulraj, 2010).

Table 29. Extended quality criteria applied to the research cycles (Source: Adapted from Koplin, 2005; Näslund, Kale, & Paulraj, 2010)

	Research Phases			
Criteria	*Design*	*Data collection*	*Data analysis*	*Feedback*
Credibility	Theoretical framework explained Adoption of constructs in interviews identified in previous research	PepsiCo is a leading company in FTSE500 and Dow Jones Sustainability Index Prolonged engagement alongside company Multiple informants and research participants Triangulation of multiple data sources	Triangulation of theoretical perspectives Debriefing with research team composed of researchers and industry collaborators with different experiences in SSCM	Transcripts sent to participants for feedback Participants check of interpretation of data
Transferability	Description of sampling strategy for research participants PepsiCo as leading company in the sector	Detailed description of research setting and participants Detailed notes of events and observations	Detailed description of concepts and categories as emerging from the data Comparisons between data sources and perspectives	Transparency Inclusion of participants feedback
Dependability	Theoretical relevance of project explained Confidentiality of participants protected	Careful selection of participants to include relevant stakeholders Interview protocol developed iteratively	Inter-coder agreement reached Data audit for bias and distortion	Check specifically for bias and distortion by participants
Confirmability	Research protocol and thorough description of research cycles and decisions	Careful recording and storage of data Digital recordings Comprehensive field notes and impressions	Grid of analysis as common frame of reference between researchers & collaborators	Keep constant contact with research participants
Usefulness	Identify a problem relevant to the participants and facilitate discussion for practical solution Link practical issues with relevant theory in SSCM Flexbility of design and research approach to accommodate for changes in context	Seek agreement with participants during data collection and ensure transparency of the process (no covert data collection)	Identify and reflect upon the learnings from each cycle Ensure that all voices are represented in the analysis (powerful and marginalised)	Ensure that findings are communicated in a comprehensible manner Use findings to collaboratively plan the next steps with the intention to address the practical issue

Ethics	Ensure that both the interest of the sponsor firm and those of the other parties involved are taken into account Refrain from exploitative questions and problems that would imply less egalitarian outcomes	Ensure confidentiality of the responses – preserve integrity. Make the effort to capture all the voices on the issue and not favour one side over the other	Ensure transparency of researcher's position and values Report on both positive and negative aspects – as collected in the interview to enable "true" picture	Confront researcher's analysis to that of participants and re-evaluate accordingly

It was mentioned earlier that the work presented in this thesis resembles an embedded single case study (Yin, 2003; Saunders, Lewis, & Thornhill, 2007). In order to address the question of transferability, the representativeness of the case of PepsiCo must be considered as well as its potential to lead to interesting insights into an under-explored phenomenon (Saunders, Lewis, & Thornhill, 2007)

PepsiCo UK working with its agricultural suppliers can be viewed as a case exemplar to study the implementation of SSCM. Considering the activities of single leading company in this research is in line with the theoretical sampling approach of the case study methodology (Eisenhardt, 1989). Despite the obvious limitation of generalisability advanced against single cases (Voss, Tsikriktsis, & Frohlich, 2002), studying the case of a leading company often leads to useful insights for benchmarking purposes and provides the depth of observation required for an underexplored phenomenon (Alvarez, Pilbeam, & Wilding, 2010; Barratt, Choi, & Li, 2011). Cases of single firms have been used in SSCM research for their longitudinal orientation and the access they offer to multiple contexts and units of analysis (e.g. Byron et al., 2008; Sigala, 2008; Alvarez, Pilbeam, & Wilding, 2010). PepsiCo UK represents a relevant, fairly typical and interesting case because of four main reasons:

i. The multinational company is behind four of the UK market leading consumer brands. It has been recognized for its proactive engagement around sustainability over the last five years. It is one of the FT500 companies and is ranked in the Dow Jones Sustainability Index. It has been a participant in the UN Global Compact since 2008 and is also an active member of the Sustainable Agriculture Initiative Platform (SAI) and of the Sustainable Food Lab.

ii. PepsiCo operates in the food sector, which is theoretically relevant for investigating inter-organisational relationships for sustainability, in particular when it comes to relationships between a large firm and its small agricultural suppliers (Pullman, Maloni, & Carter, 2009).

iii. It initiated a number of UK–focused sustainability projects in 2010, specifically aimed at improving agricultural sustainability and hence requiring working with growers. PepsiCo has rolled out a number of projects to its suppliers, such as carbon and water management, and has worked in collaboration with consultancies and non-governmental organizations (NGOs) to develop its strategy and tools. These projects constituted ideal settings to research the phenomena.

iv. PepsiCo UK initiated the project. It represents a relatively rare opportunity to be in contact with relevant stakeholders and to be able to follow the implementation and evolution of the projects and relationships in real time and not retrospectively.

As in any research project involving people, concerns must be raised about the implications of getting in people's lives, intruding in their everyday practices and simply working alongside them in a relationship based on trust. The involvement of

research participants as co-inquirers also raises a number of considerations regarding the political aspects of the research. Addressing these challenges revolved around three aspects in this project: building relationships, ensuring transparency and understanding power and politics.

In order to develop a deeper understanding of individual actions and interactions, we worked to get access to research participants' own environments. Building trust with and among the research participants has been a critical part of the research, which allowed going beyond usual topics of conversations to engage in more reflective discussions and foster moments of dialogue (Lüsher & Lewis, 2008).

In order to ensure transparency, I have written an introductory paragraph to the research that has been circulated to the main to the sustainability team at PepsiCo UK and to the suppliers (Appendix 3). This document provides details about the overall purpose and format of the research. Regular contacts with research participants via email and phone has allowed a continuous flow of information and a transparent research process as updates have been sent regularly. Not only did this contribute to the overall quality of the research, it also helped building strong relationships with the research participants.

There are political aspects that have been taken into account when conducing the research. I have been careful to have PepsiCo's voice come through the research without marginalising the other voices and perspectives. In such collaborative research, very early on the risks of the researcher being co-opted surface (Van de Ven & Johnson, 2006). In order to address these concerns, multiple viewpoints were sought during the interviews and workshops. Attention was paid to identifying patterns in what was said and also not said in order to seek supporting and contradicting evidence. In efforts to understand my own influence on the change for

sustainability and the research process, I have kept records of my reflections. The keeping of a reflective diary helped me understand my own biases and assess whether the conclusions that were drawn were good representations of the evidence collected rather than accounts of what the interested parties wanted to hear.

4.6.5 Summary and remainder of the thesis

In this chapter, methodological issues have been addressed and the research design has been presented in details. AR has been justified as an appropriate approach for this particular research project that seeks to advance both academic theory and offer practical managerial insights. As part of the AR approach adopted in this research, multiple methods have been employed. As noted early in the chapter, some additional details about specific research methods applied in the subsequent cycles of research are explained in the next chapters. This chapter is the final part of The Encounter as it sets out how the different cycles of inquiry have been conducted.

II. The Deep Dive

“My life is very monotonous,” the fox said. “I hunt chickens; men hunt me. All the chickens are just alike, and all the men are just alike. And, in consequence, I am a little bored. But if you tame me, it will be as if the sun came to shine on my life. I shall know the sound of a step that will be different from all the others. Other steps send me hurrying back underneath the ground. Yours will call me, like music, out of my burrow. And then look: you see the grain-fields down yonder? I do not eat bread. Wheat is of no use to me. The wheat fields have nothing to say to me. And that is sad. But you have hair that is the colour of gold. Think how wonderful that will be when you have tamed me! The grain, which is also golden, will bring me back the thought of you. And I shall love to listen to the wind in the wheat…”

“Please – tame me!” he said.

“I want to, very much,” the little prince replied. “But I have not much time. I have friends to discover, and a great many things to understand.”

“One only understands the things that one tames,” said the fox. “Men have no more time to understand anything. They buy things all ready made at the shops. But there is no shop anywhere where one can buy friendship, and so men have no friends any more. If you want a friend, tame me …”

“What must I do, to tame you?” asked the little prince.

“You must be very patient,” replied the fox. “First you will sit down at a little distance from me – like that – in the grass. I shall look at you out of the corner of my eye, and you will say nothing. Words are the source of misunderstandings. But you will sit a little closer to me, every day…”

The next day the little prince came back.

“It would have been better to come back at the same hour,” said the fox. “If, for example, you come at four o'clock in the afternoon, then at three o'clock I shall begin to be happy. I shall feel happier and happier as the hour advances. At four o'clock, I shall already be worrying and jumping about. I shall show you how happy I am! But if you come at just any time, I shall never know at what hour my heart is to be ready to greet you… One must observe the proper rites…”

“What is a rite?” asked the little prince.

“Those also are actions too often neglected,” said the fox. “They are what make one day different from other days, one hour from other hours. There is a rite, for example, among my hunters. Every Thursday they dance with the village girls. So Thursday is a wonderful day for me! I can take a walk as far as the vineyards. But if the hunters danced at just any time, every day would be like every other day, and I should never have any vacation at all.”

Antoine de Saint-Exupéry

The Little Prince (1943), Extract from Chapter 21

Chapter 5 – Understanding the relationships between PepsiCo and the growers on sustainability: Power vs. collaboration

5.1 Introduction

5.1.1 Objectives

Having developed an initial understanding of the practical context of the project and positioned it within broader research in SSCM, the time for deeper engagement and actual participation arrived. At the end of Chapter 2, I presented the overarching research question, which has served to guide the entire collaborative research process with PepsiCo:

RQG. How can SSCM be facilitated through the relationships between a large customer and its small suppliers?

In order to be able to provide a reasonable and useful answer to this question at the end of the research process, it was apparent that a number of sub-questions needed to be asked. As described in Chapter 4, AR consists of multiple cycles of inquiry, each guided by some question or problem that form the line of inquiry. This and subsequent chapters, form the different cycles of inquiry that have emerged and been conducted in this research with the purpose of reaching conclusions that would respond to the initial research question. That is how the Deep Dive began and this chapter presents the findings and analysis of the first cycle of inquiry, which consisted in developing an understanding of:

a. The working relationships between PepsiCo and its SME suppliers in the implementation of SSC practices, i.e. structure and governance mechanisms.

b. The factors that were helping and/or hindering the implementation process of sustainable SCM.

c. How to use this information in order to inform the subsequent cycles of inquiry and to articulate ways for improvement.

5.1.2 Structure of the chapter

The first section of this chapter discusses the background literature on buyer-supplier relationships in SSCM and the motivations for this first cycle of inquiry. More specific inquiry questions are articulated at the end of the section. The theoretical foundations to the analysis of the relationships between PepsiCo and the growers are presented in the following section. The interaction of two central elements of SC relationships management is specifically explored: collaboration and power. Next, more details about the application of methods in this cycle are provided. In particular, the development of the interview protocol was a critical stage in this cycle. The analysis draws primarily on the information collected through the interviews. In the remaining sections of this chapter the key findings and their implications on how they have informed the next stages of the research are discussed.

5.2 Background and sub-research question

The main theme behind this cycle of inquiry revolved around buyer-supplier relationships in SSCM so as to understand the specific characteristics of PepsiCo's relationships with its suppliers. Firms are challenged with managing their SC relationships in order to mitigate the reputational and operational risks that can emerge from unethical and unsustainable practices (Krause, Vachon, & Klassen, 2009). The depth and quality of the relationship between a firm and its suppliers was

the most commonly cited facilitator of sustainable supply chain management (SSCM) (Brammer, Hoejmose, & Millington, 2011). In Chapter 2 and 3, the importance of inter-organisational relationships in SSCM was already established. This cycle of inquiry explores in more depth the different existing paradigms of SSC relationships and their implications in the context of this research project. Background literature on inter-organisational relationships in SSCM as well as the research setting, have informed the development of this cycle. This section focuses on the practical research context as it triggered the main research question guiding this cycle of inquiry.

5.2.1 SC relationships for sustainability in the research context

This research has been conducted in the food sector, which is dominated by a relatively small number of large companies that exert a comparatively large control over the trade, production, and consumption of food and agricultural commodities (Henson & Humphrey, 2010), which has been coined "buyer-driven (-ness)" (Gereffi, 1994). Food SCs are therefore often characterized by an imbalanced distribution of power (Hingley, 2005; Hingley & Lindgreen, 2010). At the individual SC level, this means a power advantage for the "large" focal buyer, for example, food manufacturer or supermarket (Fearne, Duffy, & Hornibrook, 2005; Hingley & Lindgreen, 2010).

Some studies have considered the role of collaboration in developing sustainable food SCs (for e.g. Hamprecht et al., 2005; Kottila & Rönni, 2008; Smith, 2008). Authors have particularly emphasised the role of trust and social capital as essential relational factors supporting the implementation of sustainable practices in food SCs (Spence & Bourlakis, 2009). It has been shown that considering the

business environment of food SCs, buyers and suppliers have to be highly committed and trusting in order to develop true partnerships (Fearne, 1998; Kottila & Rönni, 2008; Leat & Revoredo-Giha, 2008). A long-term relationship orientation has been promoted in order to gain increased operational benefits and facilitate the achievement of sustainability goals (Matopoulos et al., 2007; Kottila & Rönni, 2008). However despite the recognition of the potential gains of collaboration, several authors have mentioned that the power balance between food SC actors needs to be taken into account (Matopoulos et al., 2007; Pullman, Maloni, & Carter, 2009; Spence & Bourlakis, 2009).

The power dynamics of food SCs have major implications on how sustainability practices are implemented and managed between SC members (Hingley, 2005). Food SCs are particularly sensitive with regard to sustainable development because of their distinctive social, economic, and environmental settings—for example, rural livelihoods, food security, and land use (Maloni & Brown, 2006; Pullman, Maloni, & Carter, 2009; Thompson & Scoones, 2009). The food industry presents higher risks in the SC related to agricultural sustainability (Hamprecht et al., 2005), accounts for a large number of sustainability standards (Tallontire, 2007; Henson & Humphrey, 2008), and is highly exposed to public criticism (Maloni & Brown, 2006). Companies have addressed these CSR issues by developing standards, certifications, or sustainability programs and defining new modes of governance of the production process (Henson & Humphrey, 2008). The sharing of the costs and performance gains of these sustainability practices is likely to be impacted by the power imbalances characterizing food SCs (Cox, Chicksand, & Palmer, 2007; Pullman, Maloni, & Carter, 2009).

The notion of interplay between power and trust in the SC was actually first brought to the discussion by one of the collaborators at PepsiCo UK who saw value in exploring its instances in the relationships with the suppliers. He suggested looking into the concept of power as defined by Lukes (1974) but also draw inspiration from the work of Kahane (2010) on power and love. He viewed power and collaboration mechanisms as complementary rather than opposed, and from his perspective, more productive relationships for sustainable change can be developed by combining the right dose of power and collaboration. In addition, early signs in the research suggested that collaboration was not the only way of framing the relationship between PepsiCo and its growers on sustainability. Insights gained through at the Sustainable Food Lab meeting in January 2011 and at a subsequent growers meeting in March 2011 revealed the complexity of the relationship around sustainability. The idea that sustainability is being 'forced on' the growers and is being 'pushed down (their) throat' by PepsiCo confirmed the relevance of exploring the power paradigm at that stage.

Impressions

January 2011 – Sustainable Food Lab Meeting

Cool Farm Tool is a tool to measure carbon emission on the farm but there was a striking absence of farmers at this meeting! Why so few when the tool (in the words of the creators) is supposedly designed for growers to better manage their own crops?

Is the CFT another top-down initiative? What does it reveal in terms of sustainability strategies in organisations? And about the way that sustainability is addressed in general?

Concerns on how to present myself to growers: not representing the interest of Pepsi but as an objective/neutral researcher, working on how the mutual benefits of sustainability cooperation → this concern emerged after a remark made by a farmer at the

meeting saying that my project was looking to "find new ways to exploit farmers".

March 2011 – PepsiCo potato growers forum

Surprising that it is a forum but there is more talking from one side than the other. It is a bit contradictory: a lot of things were said about the desire o move beyond the position of PepsiCo having to push the initiatives but PepsiCo led the forum with little room for growers' interventions

Striking conversation with one of the farmers during the tea break, me explaining my focus on sustainability and him saying: "what does it really mean? Is it just a term we are forced to use because it's fashionable?".

5.2.2 Sub-research question

The specific characteristics of food SC in terms of sustainability, the interests expressed by the collaborators at PepsiCo and early findings suggested that exploring the interaction between collaboration and power (Cox, 2004a; Nyaga, Whipple, & Lynch, 2010) was a possible way to help make sense of and define the type of relational dynamics between PepsiCo and it suppliers in the context of SSCM. The following sub-research question has guided this cycle of inquiry:

RQ5. How does a large buyer like PepsiCo work with its small suppliers to implement sustainable SC practices?

5.3 Theoretical foundations: Collaborative and power paradigms

In this section, the general aspects of the debate about collaborative and power relationships in SSCM are presented. Drawing on both streams of literature has enabled further sub-research questions to emerge. These are presented in the first part of this section. In addition, the way in which the concepts of collaboration and power were actually operationalised in this cycle is explained. Part of the role of the

action researcher is to relate the practical issues to theory. In this cycle, theory has informed the design and analysis of the interview cycles. In order to build the interview protocol for example, themes were drawn from both streams of literature. The collaborative paradigm is discussed in more depth, by specifically examining its instantiation in previous research. The second part exploring the concept of power is longer as not much work has been done previously to offer a solid conceptual framework to study power in SSCM.

5.3.1 Managing SSC relationships: collaboration vs. compliance

Previous research on SSC relationships has put a strong emphasis on collaboration between SC partners to facilitate sustainability initiatives (Seuring & Müller, 2008; e.g. Gold, Seuring, & Beske, 2010). Cooperation with suppliers has been identified as a common best practice of SCM related to better organisational outcomes and therefore, unsurprisingly, has become viewed as a decisive component of creating sustainable SCs (Pagell & Wu, 2009). This 'collaborative paradigm', which had first emerged in more traditional SCM theory (Chen & Paulraj, 2004; Vachon & Klassen, 2006b), has become a predominant view of SSC relationships.

Trust between supply chain partners has been identified as a critical relational mechanism for collaboration, as opposed to compliance-based relationship orientation relying on power (Simpson & Power, 2005). In much SSCM research, the development of strong forms of collaboration, such as partnerships, has been viewed as the most desirable path to follow (Vachon & Klassen, 2006a; Youn et al., 2011). On the other hand, compliance is often perceived negatively and associated with coercive approaches to relationship management (Boyd et al., 2007)

There is little research challenging the collaborative paradigm in SSCM, and for instance, the role of power in relationships remain underexplored (Hoejmose & Adrien-Kirby, 2012; Walker et al., 2012). This is surprising given that most research in the field considers the activities of large corporations often working with small suppliers at home or overseas to implement sustainable practices (Hall, 2001; Amaeshi, Osuji, & Nnodim, 2008; Lee & Klassen, 2008; Walker & Preuss, 2008). It is arguable that many case studies presented in the SSCM literature display some sort of power imbalance, which will not only determine who drives the agenda but also influence the implementation and outcomes of sustainability initiatives (Hall, 2001; Pedersen & Andersen, 2006; Boyd et al., 2007; Millington, 2008). Power inequalities are likely to influence the development of trust in relationships and, more generally, alter the dynamics of the exchange (Stephens, Fulk, & Monge, 2009).

In traditional SC literature, a significant amount of research has looked at the concept of power in buyer–supplier exchange (e.g. Oliver, 1990; Cox, 2004a; Benton & Maloni, 2005; Meehan & Wright, 2012). These studies have adopted different conceptualizations of power but share the view that power dynamics are central to understanding supply relationship-management practices. For instance, Terpend and Ashenbaum (2012) have shown that power affects different aspects of industrial relationships including trust, conflict levels, collaboration, commitment, and satisfaction. They found that the extent to which power can be effectively deployed depends on the size of the supplier network. The role that power plays in buyer–supplier relationships is often perceived as being negative (Caniëls & Gelderman, 2007; Nair, Narasimhan, & Bendoly, 2011). When considering the shift from SCM to SSCM, it is interesting to see how relationship-management strategies may significantly change to accommodate the goals of sustainability with, for example,

dominant buyers not exploiting their power over dependent suppliers but rather treating them like strategic partners (Pagell, Wu, & Wasserman, 2010).

This broad overview of the literature already signals an opportunity to compare the collaborative paradigm, often viewed as the best way, and the power lens, which specifies that there is no one best way but rather that relational circumstances need to be accounted for to define the best working type of relationship. The intention is therefore to draw upon themes from both streams of literature to build a fuller picture of the relationships considered in this research. In light of the literature, the following additional sub-research questions were articulated:

RQ5a. How collaborative is the relationship on sustainability between a large buyer like PepsiCo and its small suppliers?

RQ5b. How does power influence the management of sustainability practices between large buyer like PepsiCo and its small suppliers?

5.3.2 Collaborative paradigm

5.3.2.1 Collaboration and SSC performance

Buyer-supplier relationships have been studied when trying to understand the modes of relational governance that would contribute to increased performance. In the context of SSCM, the notion of performance is actually extended to encompass not only economic but also environmental and social dimensions (Carter & Rogers, 2008). Arguably successful SSC relationship management leads to increased value creation at all three levels of the triple bottom line (Pagell, Krumwiede, & Sheu, 2007)

Many authors have argued that a more cooperative approach to SC relationships was likely to be more fruitful in achieving sustainable development goals (Sharfman, Shaft, & Anex, 2009). In particular, several studies have been conducted in the context of green SCM, looking at the link between SC relationship management and environmental practices. Examples include a number of studies by Klassen and Vachon (Klassen & Vachon, 2003; 2006a; 2006b; 2007; 2008) considering green SC, which have shown that collaborative green practices and integration with suppliers were associated with higher performance. Verghese and Lewis (2007) and Rao (2004) argued that SC partnerships and integration increased SC efficiencies, enhanced environmental innovation, and greened the production process. Florida (1996) provided one of the earliest contribution on the topic and showed that collaborative SC relationships positively influenced the adoption and diffusion of environmental innovation. Looking deeper into this relation between collaborative practice and environmental innovation, Geffen and Rothenberg (2000) argued that a collaborative approach enabled customer firms to access the necessary expertise residing within the suppliers. They showed that supplier involvement was critical in developing successful environmental technologies. Rao's research (2002) actually offers additional supportive evidence for collaboration in green SCM as it showed that in Taiwan, higher levels of advanced environmental management practice could be attributed to collaborative SC relations.

Seuring (2004: 1059) actually argues that co-operation is 'the only way for companies to improve the competitiveness of the chain while reducing environmental burdens'.

5.3.2.2 Relational view of SCC relationships

When considering the link between cooperation and SSC performance, authors have essentially studied ways to create sustainable competitive advantage (Solér, Bergström, & Shanahan, 2010). This view of SSC relationship resonates with the core tenets of relational theory (Dyer & Singh, 1998), which shows that competitive advantage does not emanate solely from within the firm's boundaries, i.e. through the acquisition and use of unique resources (RBV Barney, 1991), but also from inter-organisational relationships. A key assumption of the relational view is that as firm are embedded in a network of relationships; collaborative efforts between organisations provide an opportunity to create value that could not otherwise be created by the organisations independently.

In the relational view, developing a competitive advantage is about generating relational rents, i.e. above normal economic gains emanating from the 'joint idiosyncratic contributions of specific SC partners' (Dyer & Singh, 1998: 662). Dyer and Singh (1998) identify four supporting mechanisms for the creation of relational rents and four potential barriers as described in Table 30.

Table 30. Enablers and barriers to relational rents (Source: adapted from Dyer & Singh, 1998)

Enablers	1. Investing in relationship-specific assets 2. Engaging in knowledge-sharing routines, including creating opportunities for joint learning 3. Combining complementary resources or capabilities that will result in the joint creation of new products, services or technologies 4. Developing effective governance mechanisms to reduce transaction costs, and in particular relying on informal rather than formal self-enforcement mechanisms
Barriers	1. Asset interconnectedness 2. Partner scarcity 3. Resource indivisibility 4. Institutional environment

The relational view has been successfully applied to study traditional buyer-supplier relationships, in particular strategic collaboration (Chen, Paulraj, & Lado, 2004; Chen & Paulraj, 2004; Paulraj, Lado, & Chen, 2008). The theory has helped defined some of the key competencies or capabilities supporting successful collaborative SC relationships. For example, communication and inter-organisational learning, in turn supported by partners' levels of absorptive capacity, have been identified as important factors enhancing both buyers' and suppliers' performance (Paulraj, Lado, & Chen, 2008; Zacharia, Nix, & Lusch, 2011). Applying the relational view has also helped authors identify barriers to collaborative supply relationships and procurement (e.g. Walker et al., 2013).

The relational view has been applied to a lesser extent in SSCM (Vachon & Klassen, 2006b) but several authors have integrated elements of the theory in their conceptual frameworks to explore relational aspects of SSCM or mentioned the relational view as part of their research on collaboration. For instance, Simpson and Power (2005) used relational theory to conduct some exploratory study on the development of lean and green suppliers. They show that a relational approach is more powerful than coercion when considering environmental performance. They propose that a collaborative buyer-supplier is positively related to both suppliers' lean performance and environmental practice. Vachon and Klassen (2008) drew on relational theory to study environmental collaboration and they showed that collaborative green practices with suppliers comparatively led to higher benefits. Gold et al. (2010) developed a conceptual framework of SSCM showing how strategic collaboration supports the development of inter-firm resources, which in turn ensure simultaneous economic, environmental and social performance. As a final example, Paulraj (2011) drew on relational theory to conceptualise SSCM as a

key relational capability enhancing organisational sustainability performance. None of these studies has systematically examined the congruence between SSCM and the relational framework.

5.3.2.3 Key aspects of collaboration in SSCs

Reviewing the main aspects and applications of the relational view shed some light on how the concept of collaboration in SC relationships has been operationalised in SSCM research. SSCM researchers have actually considered multiple variables and themes under the collaborative umbrella. It is possible to make a clear distinction between SSC activities and the relational mechanisms, or mediating variables, that influence these activities (Nyaga, Whipple, & Lynch, 2010). Many examples of green SC activities or practices have been investigated. Some examples include: collaborative waste reduction (Theyel, 2001; Simpson & Power, 2005), environmental innovation (Verghese & Lewis, 2007; Lee & Kim, 2011), adoption of environmental technologies (Vachon & Klassen, 2007), reduction of toxic material (Pagell, Krumwiede, & Sheu, 2007), and joint development of recyclable products (Simpson, 2010).

The link between SC collaboration and successful SSC practices is more nuanced than it initially seems. Collaboration presents benefits for SSCM through a number of relational mechanisms. In other words, the relationship between SC collaboration and enhanced SSC performance is mediated. A number of authors have shown that improved trust as a result of SC collaboration enhances SSC performance (Simpson & Power, 2005; Cheng, Yeh, & Tu, 2008; Alvarez, Pilbeam, & Wilding, 2010). Other mediating relational variables include communication (Verghese & Lewis, 2007; Cheng, Yeh, & Tu, 2008), commitment (Simpson & Power, 2005),

goal congruence (Pedersen & Andersen, 2006), information sharing (Theyel, 2001; Solér, Bergström, & Shanahan, 2010), learning (Theyel, 2001; Carter, 2005; Carter & Rogers, 2008) and participation (Cheng, Yeh, & Tu, 2008). Some authors have also suggested that greater collaboration on SSCM improves dialogue and relationship quality and constitutes an intangible asset that contributes to superior performance (Alvarez, Pilbeam, & Wilding, 2010). It appears that a collaborative approach to SSC relationships favours the emergence and preservation of more informal relationship safeguards.

So far, a rather ideal picture of collaborative SSCM has been painted, which has been presented as the opposite of more arms' length, coercive and compliance oriented approaches to relationship management. Research has emphasised enablers to collaboration in SSCs and this suggests a preference for positive findings. There are few studies that consider the barriers or lack of enablers to collaboration in SSCM, hence highlighting a gap in exiting research.

It is important to remain aware that in practice it is often difficult to find cases that clearly fall within one or the other category. The reality is grey, not black and white, and SC relationships for sustainability tend to exhibit a mix of both collaborative and compliance mechanisms (Sharfman, Shaft, & Anex, 2009; Alvarez, Pilbeam, & Wilding, 2010). A good example of this would be supplier development practices for sustainability, which usually include some form of assessment of suppliers' social and environmental performance (compliance) and providing training and technical assistance with regards to new sustainability requirements (collaboration) (Simpson & Power, 2005). Matopoulos et al. (2007) raise the interesting point that in a SC relationships multiple elements interact to determine the intensity of the collaboration. They identify sharing rewards and risks, trust,

dependence and power as elements affecting collaboration. This point naturally leads us to examine the concept of power as another important component of SSC relationships.

5.3.3 Power paradigm

5.3.3.1 Power as a construct

There exist multiple conceptualizations of power in the literature (Ireland & Webb, 2007; Chicksand, 2009), with extensive research focusing on power within organisations. In this research, power in an inter-organisational context is considered. However, I first provide a brief overview of some of the key contributions of the intra-organisational power literature, as research on power in an inter-organisational context builds on and draws heavily upon the former literature.

Power in organisations is typically viewed as a highly political concept (Pettigrew, 1973; Pfeffer, 1992; Fleming & Spicer, 2008) and it is conceptualised as an ability rather than an attribute (Belaya, Gagalyuk, & Hanf, 2009). Power is commonly defined as the ability of an actor to influence another actor's behaviour, including making them do something that they would not have done otherwise (Lukes, 1974). It is therefore difficult to separate the existence of power from its exercise (Pfeffer, 1992). This view of power has also been adopted in the literature relating to power between organisations.

The seminal works of Weber (1978) and Marx (1976) are often considered foundational to understanding the concept of power in organisations and specifically how power becomes legitimated through organisational structures (Hardy & Clegg, 1996). Foucault's ideas (1977, 1980) contribute to understanding surveillance mechanisms and the links among knowledge, discourse, and power. Interestingly, the

existence and exercise of power is often associated with the concepts of conflict and resistance (Pettigrew, 1973; Hardy & Clegg, 1996; Fleming & Spicer, 2008). French and Raven (1959) identify five sources of power: reward, coercive, legitimate, expert, and referent. These types of power describe different ways in which an entity can exert its influence and can help explain different reactions to this influence. A further classification proposes that these bases of power are either mediated or non-mediated (Maloni & Benton, 2000; Benton & Maloni, 2005). Mediated power encompasses reward, coercive, and legal legitimate power sources and corresponds to the competitive and negative use of power in organisational strategy. Non-mediated power, including expert, referent, and traditional legitimate power, is associated with a more relational and positive conception of organisational relationships (Benton & Maloni, 2005; Terpend & Ashenbaum, 2012). A distinction can be drawn between a capacity to influence (potential power) and the actual exercise of power (enacted power), with potential power emerging from the dependencies between individuals and organisations (Provan, 1980).

5.3.3.2 Power: A Resource Dependence Perspective

In considering the link between power and dependence in inter-organisational relations (Gaski, 1984; Handley & Benton, 2012), resource dependence perspective (RDT), which has evolved from the organisational power literature, is specifically adopted. From this theoretical perspective, the ability of a firm to influence another firm's behaviour (i.e., power) requires this firm to have control over certain resources on which the other firm is dependent (Cox, 2007).

The literature on RDT has power at its heart, and organisational success in RDT is defined as power maximisation (Ulrich & Barney, 1984). There are two

important characteristics of inter-organisational power: it is a relative concept, emerging from the specific context of a relationship, and it can serve as a way of managing the relationship (Frazier, 1999; Cox et al., 2002; Chicksand, 2009). Power, as conceptualised in RDT, draws upon the work of Emerson (1962) and defines power as a function of dependence. An organisation's ability to exercise power over another actor will depend on the actor's dependence on the organisation. In turn, the nature and availability of the resources controlled by the actors determine the level of mutual dependence. This point relates to Provan's view of potential power (Provan, 1980) but is extended to the context of inter-organisational relations.

RDT provides a useful framework to understand inter-organisational power relations. No organisation is self-sufficient, and therefore firms will seek to enter a relationship to be able to access resources they need to achieve their organisational outcomes. Inter-organisational relations are formed to manage interdependence between organisations (Pfeffer & Salancik, 1978; Paulraj & Chen, 2007; Singh, Power, & Chuong, 2011). Power can be understood in terms of the degree of dependence experienced by the parties in the relationship (Ramsay, 1996). There will be power imbalance (asymmetrical interdependence) if firm A is more dependent on firm B than B is on A. Power depends on the criticality of the resource (commercial and operational importance) and the availability of alternatives to source the same resource (scarcity) (Ramsay, 1996; Cox et al., 2002; Chicksand, 2009). Not all inter-organisational relations are characterized by power imbalance, that is, when levels of mutual dependence are equal; and not all situations of imbalance will be characterized by the same level of imbalance (Casciaro & Piskorski, 2005).

RDT offers predictions with regard to actions organisations will take to manage dependence in terms of power use or power restructuring (Casciaro &

Piskorski, 2005). Power comes into play in inter-organisational governance either when the dominant actor exerts influence over the disadvantaged party or when there are attempts to do so.

Having described how RDT can help understand inter-organisational relations, the next section looks more closely at how power in buyer–supplier relations has been previously discussed in the literature.

5.3.3.3 Power in Buyer–Supplier Relationships

While a number of authors have discussed the advantages of long-term collaboration and partnering to buyer–supplier relationships (e.g. Spekman, Kamauff Jr, & Myhr, 1998), an understanding of power dynamics can help explain barriers to such relationships. In a situation of power imbalance, the dominant organisation is likely to exercise its influence over the other party and act to maintain its power, whereas the weaker organisation is more likely to comply to continue accessing resources (Kumar, Scheer, & Steenkamps, 1995; Gulati & Sytch, 2007; Zhu et al., 2008).

The powerful firm may act opportunistically (Williamson, 1981; Frazier, 1999; Ireland & Webb, 2007), and make agreements that will favour its own interests or encourage suppliers to make the majority of investments or relationship specific adaptations (Ramsay, 1996; Casciaro & Piskorski, 2005; Cox, Chicksand, & Palmer, 2007). Powerful organisations are likely to resist entering long-term collaborative relationships, as it would signify a loss of power due to an increase in dependence (Ramsay, 1996; Casciaro & Piskorski, 2005). Less powerful organisations might be reluctant to collaborate with powerful organisations, as they might not benefit from the exchange and become over-reliant on a specific organisation. This has been

described as a ‘treadmill to oblivion’, whereby there is an expectation from suppliers to invest in continuous improvement with diminishing returns (Cox, Chicksand, & Palmer, 2007).

Power imbalances may have a negative impact on inter-organisational relationships, which can become less stable and less trusting (Heide, 1994; Kumar, Scheer, & Steenkamps, 1995). The exploitation of coercive power can undermine an organisation’s ability to achieve its goals and be “self-defeating in the long-run” (Kumar, 1996; Maloni & Benton, 2000). A careful and controlled use of power can, however, promote SC integration and have positive effects on performance, providing the power holder understands its chain partners and the sources of their dependencies (Maloni & Benton, 2000).

The work of Cox et al. (Cox, 2001b; Cox et al., 2002; Cox, 2004a; Cox & Chicksand, 2007c, a, b; Cox, Chicksand, & Palmer, 2007) provides a useful extension of RDT that enables not only mapping power dependencies in given relationships (balanced or imbalanced) but also measuring the consequences of those dependencies. Their work has shown that power is not static and that buyers and suppliers can use various strategies to alter the dependencies. Such strategies can help move, for example, from situations of buyer or supplier dominance to interdependence. They include seeking alternative and more buyers/suppliers, developing a closer relationship through long-term agreements, or engaging in joint product differentiation activities (Cox, 2001b; Cox et al., 2002). Their power regimes perspective combines RDT, thinking from the transaction costs literature (Williamson, 1981), and the work of Porter (1985) as a mean of linking attributes of buyer and supplier power to relationship-management styles. These are based upon

the way that value is shared in the relationships (equal or unequal) and the nature of the working relationship (arms' length or collaborative).

Imbalanced power clearly raises concerns with regard to the fairness of the sharing of risks and rewards in the relationship, which is likely to result in an appropriation by the powerful player of the larger share of benefits resulting from the exchange (Ramsay, 1996; Casciaro & Piskorski, 2005). This contrasts with cases of interdependence (i.e., cases in which parties are jointly dependent on each other), which can lead to more exchange stability and foster collaboration (Kumar, Scheer, & Steenkamps, 1995; Spekman, Kamauff Jr, & Myhr, 1998). Awareness of the specificities of the business ties and relative power is key to developing suitable value-creating and -sharing strategies (Chicksand, Ramsay, & Rehme, 2011).

5.3.3.4 Extending the RDT power perspective to SSC relationships

While collaboration has been advocated as the best way to manage SC relationships for sustainability (e.g., Alvarez, Pilbeam, & Wilding, 2010; Vachon & Klassen, (2008), Verghese & Lewis, 2007), it is interesting to note that most of SSCM literature tends to focus on the actions of large corporations. These large companies benefit from more resources at hand to address sustainability issues and are more exposed to external pressure (Zhu et al., 2008). When ethical dilemmas arise in a SC, large multinationals are often held responsible for the behaviour of their suppliers. In order to minimize the risk incurred by scandals in their SCs, these large companies will tend to act unilaterally and put pressure on their suppliers to adopt codes of conduct and more sustainable business practices (Hall, 2001; Pedersen & Andersen, 2006; Mollenkopf et al., 2010). This can be challenging for smaller suppliers that have limited capabilities (Lee, 2008; Pedersen, 2009). Rather

than viewing such imbalanced SSCs from a collaborative paradigm, it seems relevant to explore power in SSC relationships and how imbalanced relationships are coordinated to achieve sustainability.

A number of authors have called for more research into the role of power, and imbalanced power in particular, in influencing SSC practices. Pedersen and Andersen (2006) identified bargaining power as an important mechanism to safeguard codes of conduct. They call for further exploration of the cases of SMEs, which also need safeguarding mechanisms but may lack the bargaining power and resources. Boyd et al. (2007) suggest investigating the impact and use of imbalanced power bases on the ability to establish CSR between SC partners. Pullman et al. (2009) call for further research into the impact of power influences in the SC on sustainability performance. In their view, power imbalance is highly relevant to segments of the food SC and will affect the sharing of sustainability practice costs and resulting performance (Pullman, Maloni, & Carter, 2009: 49). Overall, relational exchanges in a SSC context are complex, and it may be too idealistic to view them solely from a collaborative perspective.

Power, as defined by RDT, helps understand the choices on how to manage sustainability along the SC. Power imbalance can provide opportunities to facilitate the implementation and monitoring of socially and environmentally responsible SC practices (Hall, 2000; Preuss, 2001). A powerful buyer has a greater chance of successfully implementing SSC practices because it can enforce sustainability requirements and codes over its suppliers (Millington, 2008; Ciliberti et al., 2009; Vurro, Russo, & Perrini, 2009). This view of power as an enabler for SSCM has been contested. Boyd et al. (2007) argue that the powerful player seeking compliance and using coercive mechanisms can become an SC "bully" rather than a "champion."

Hall and Matos (2010) show that power imbalance impedes inter-firm learning and knowledge diffusion and undermines SSC policies.

Managing SSC relationships raises some unique challenges, which lend themselves to a power perspective. Implementing SSCM requires stakeholder engagement and buy-in over time (Alvarez, Pilbeam, & Wilding, 2010) in order to perform, for example, social audits or environmental product development (Pagell & Wu, 2009). RDT has been applied to SSCM in a limited context and has been used to explain variations between firm sizes in SSCM (Zhu et al., 2008) and to explore the relationship between large corporations and SMEs, which often have limited capabilities to engage in SSCM (Lee & Klassen, 2008; Pedersen, 2009).

It is possible to investigate how power plays out in SSCM by extending RDT to encompass all dimensions of the triple bottom line (economic, social, and environmental). A firm that is powerful in commercial terms (controlling critical economic resources) may find itself increasingly dependent on other organizations when it comes to controlling social and environmental resources. Relative power has an impact on how value is shared in a relationship (Cox, 2004b) and may be expressed as social and environmental value as well as economic value (Markley & Davis, 2007; Carter & Rogers, 2008). Power imbalance and interdependence affect the outcomes of a relationship (Kumar, Scheer, & Steenkamps, 1995; Spekman, Kamauff Jr, & Myhr, 1998; Casciaro & Piskorski, 2005) and can influence SC partners in subtle ways (Provan, 1980; Maloni & Benton, 2000). A powerful firm may resist a restructuring of dependencies and will employ mechanisms to maintain its power advantage (Casciaro & Piskorski, 2005). But it is the dominant organization's choice whether to exercise this power (e.g., coercively to ensure compliance), and it may be advantageous to ensure suppliers remain in the

relationship and act in a mutually beneficial manner (Belaya, Gagalyuk, & Hanf, 2009).

This research makes a novel contribution by addressing the lack of empirical research into the effects of power on inter-organisational relationships in SSCM.

5.3.4 Exploring collaboration and power in SSCM

Overall, relational exchanges in a SSC context are complex, and it may be too idealistic to view them solely from a collaborative perspective. There is an intrinsic interplay between power and trust in SSCM. Shifting from SCM to SSCM will thus lead companies to significantly rethink their relationship-management strategies to accommodate changes in the business landscape driven by sustainability needs (Pagell, Wu, & Wasserman, 2010). Some authors have specifically identified the value of understanding both the degree of power and the degree of collaboration in SSC relationships (Hall, 2000; Matopoulos et al., 2007).

5.4 Application of methods: Interviews

Although an extensive discussion of the methodology and research design has been presented in Chapter 4, in this section more specific details about the methods applied in this cycle of inquiry are provided. Specifically, semi-structured interviews have constituted the primary mode of collection of information from the research participants. Particular attention is paid to the level of analysis and the interviews as methods of data collection.

5.4.1 Interview participants

The interviews were conducted with the research participants that have been previously described in Chapter 4 sections 4.6.2.1 and 4.6.2.3. In total, 37 interviews have been conducted during this cycle as shown in Table 31.

Table 31. Number of interviews per participating companies

	***N* Interviewees**
PepsiCo	15
Supplier A1	2
A1.1	1
A2	1
A3	1
A4	2
A5	2
A6	1
B1	2
B2	1
C1	1
C2	1
External stakeholders	7
Total for Cycle I	***37***

However, when considering specifically the dyadic relationships analysed in this cycle the number of interviews comes to 32 (Table 32). This is obtained when counting only the interviews with participants that provided information regarding these dyads. Within PepsiCo these include purchasing, agriculture, and sustainability managers who are key informants because of their position as "boundary spanners" (Simpson & Power, 2005; Andersen & Kumar, 2006; Eltantawy, Fox, & Giunipero, 2009; Wilhelm, 2011) and their level of experience regarding the specific relationships. Within the supplier firms, people with the highest level of expertise regarding the relationship with the customer are owners, managing directors, or

customer relationship managers. Three of the relevant interviews at PepsiCo can be counted three times, since the managers discussed suppliers across the three different supply chains. The other interviews conducted as part of this cycle provided more general background on the inter-organisational relationships in terms of history, strategic context and sustainability initiatives implemented.

Table 32. Number of relationships analysed and corresponding interviews

Supply Chain	Number of Relationships	Number of Interviews at Supplying Firms	Number of Interviews at PepsiCo
Potatoes	7	10	7
Oats	2	3	5
Apple	2	2	5
Total 1	11	15	17
Total 2		**32**	

Interviews lasted between 30 minutes and 2 hours. They were all digitally recorded and subsequently transcribed and were kept anonymous due to commercial sensitivity. Follow-up phone conversations and emails allowed for clarifications and additional details. Transcripts were sent to participants for feedback.

5.4.2 Level of analysis

In this cycle, the level of analysis is the triad: buyer–supplier–supplier. This means observing not only buyer-supplier relationships but also the relationships between the suppliers. In Chapter 3 it was shown that the inter-organisational relationships are a key construct of both SCM and SSCM research. Findings regarding this construct depend on the level of analysis at which it is studied. Classifications of levels of analysis in SCM research have been published previously (Harland, 1996; Croom, Romano, & Giannakis, 2000) and usually identify three

main levels: the dyad, the SC and the network. When considering the operationalisation of these levels in SSCM research, it appears that there has been a predominant focus on the dyadic level (Carter & Easton, 2011; Miemczyk, Johnsen, & Macquet, 2012). In addition, more often than not information is primarily collected from the focal firm, which is viewed as the central actor in SSCs, therefore implying a certain bias in existing research towards the perceptions of focal firm actors.

As pointed out by Miemczyk et al. (2012: 479) 'sustainability problems are likely to stem from indirect supplier relationships that are part of the extended supply chain.' The dyadic level of analysis is therefore not sufficient to grasp the full scope of SSCM issues. They argue that the network, which includes not only SC actors such as buyers and suppliers but also external stakeholders, is a pertinent level of analysis to study sustainability in order to account for the engagement between companies and stakeholders and the connections between economic, ecological and social systems and issues. The network level of analysis remains under-represented in SSCM research and hence constitutes a significant research opportunity. Adopting a triadic focus in this cycle offers a broader understanding of inter-organisational relationships for sustainability, which is a step towards a full network focus.

Recently authors in SCM have argued that considering triads could help link the dyadic to the network level of analysis and account for structural embeddedness (Choi & Kim, 2008; Choi & Wu, 2009; Wilhelm, 2011). Within the dyads, it is possible to study inter-firm exchange relationships and resource allocations, relational commitments, and governance mechanisms (Klein, Rai, & Straub, 2007; Nair, Narasimhan, & Bendoly, 2011). A further analysis of the findings at the horizontal level of relationships between suppliers was conducted. These

relationships were observable during meetings, through the informal conversations, and in the interviews. Supplier–supplier relations have strong strategic implications for a focal firm, as they influence the process and outcomes of buyer–supplier relationships (Wu & Choi, 2005). They represent a link between what the focal firm can control (the design of the network) and the more emergent, invisible part of the network (Choi & Dooley, 2009). This relatively hidden level can have significant implications on the successful management of sustainability initiatives. Relationships between suppliers are more complex and dynamic than vertical buyer–supplier relationships (Wu & Choi, 2005). They are characterized by *coopetition* – that is, simultaneous competition and cooperation – and can influence how power and collaboration play out in the network (Wu & Choi, 2005; Wilhelm, 2011). As described earlier, organisations performing well in sustainability may adopt strategies to manage the interaction between their suppliers (Pagell & Wu, 2009).

The triadic level is underrepresented in SSCM research (Carter & Easton, 2011) and this chapter therefore makes a pertinent contribution to the field. By adopting this theoretically relevant level of analysis, it was possible to offer some pertinent insights to the research participants.

5.4.3 Interview protocol

Information about the relationships between PepsiCo and its suppliers was collected in multiple ways including corporate documents and communication, participation in meetings and informal discussions. However, the primary source of information consisted in the semi-structured interviews that were conducted with the research participants.

A semi-structured interview protocol was developed, as it allows for both focus and flexibility (Gilham, 2005) and ensures that interviewees have freedom to develop their answers. Questions were constructed around both collaborative and power dimensions, with themes previously identified in the literature (see Table 33 below). A final group of questions on relationship management for SSCM allowed exploring manifestations of power in the structure and transaction processes of the relationship on sustainability (Premkumar & Ramamurthy, 1995: 307). Questions were adapted for the buyer and supplier sides. The full interview protocol is available in Appendix 4.

Table 33. Interview themes

Power/Dependence		
Theme	*Description*	*Literature*
Criticality	The more critical the resource for an actor, the more dependent this actor will be on the resource provider.	(Casciaro & Piskorski, 2005; Cox & Chicksand, 2007c; Chicksand, 2009)
Scarcity	If little or no alternative exists, the higher the level of dependence.	
Collaborative aspects		
Theme	*Description*	*Literature*
Relationship history	The history of interaction between partners is likely to influence present conditions and future exchange.	(Heide & John, 1990; Benton & Maloni, 2005; Wu & Choi, 2005)
Trust	The level of confidence that the parties have in each other. Perceptions of the other's reliability and integrity are indications of the level of trust in the relationship. Trust acts as an informal mechanism that contributes to higher relationship quality and facilitates knowledge sharing.	(Dyer & Singh, 1998; Fynes, De Búrca, & Marshall, 2004; Benton & Maloni, 2005; Simpson & Power, 2005; Cheng, Yeh, & Tu, 2008; Kottila & Rönni, 2008; Spence & Bourlakis, 2009; Alvarez, Pilbeam, & Wilding, 2010)
Shared values and goals	The extent to which the SC partners have common views and beliefs about what goals, behaviours and policies are important and appropriate. When perceptions are shared and compatible, the willingness to work together is higher. On the other hand a lack of shared values and goals can lead to misunderstandings.	(Premkumar & Ramamurthy, 1995; Lindgreen, 2001; Cheng, Yeh, & Tu, 2008; Cao & Zhang, 2011)

Communication	Evaluate the communication and information-sharing processes in place in a given relationship. The quantity and quality of communication impacts the quality of the relationship. Also serves to understand the level of interaction (one-way, two-way communication, type of information exchanged).	(Dyer & Singh, 1998; Monczka et al., 1998; Frazier, 1999; Lindgreen, 2001; Fynes, De Búrca, & Marshall, 2004; Benton & Maloni, 2005; Cheng, Yeh, & Tu, 2008; Cao & Zhang, 2011)
Commitment	Dimension that shows the willingness of both buyers and suppliers to cooperate and exert efforts for the relationship. Relationship-specific investments and adaptation are reflections of commitment. Power use influences the level of commitment of partners.	(Dyer & Singh, 1998; Monczka et al., 1998; Frazier, 1999; Lindgreen, 2001; Fynes, De Búrca, & Marshall, 2004; Benton & Maloni, 2005; Simpson, Power, & Samson, 2007; Chicksand, 2009)
Participation	This shows the extent to which partners cooperate in activities (level of joint and individual activities) such as development and design of sustainability programs. It also reveals the time orientation of the relation (short or long term).	(El-Ansary & Stern, 1972; Heide & John, 1990; Frazier, 1999; Lindgreen, 2001; Fynes, De Búrca, & Marshall, 2004; Benton & Maloni, 2005)
Continuity/mutual expectations	This measures both parties' expectations of future interactions and the perceptions of the durability of the relationship. This is a future-oriented dimension, complementing the historical duration dimension.	(Heide & John, 1990; Forman & Jørgensen, 2004)

Relationship Management for SSCM

Construct	*Description*	*Literature*
Contractual arrangements	Understanding the contractual arrangements as formal inter-firm governance mechanisms revealing the relationship orientation (adversarial, collaborative, etc.). Terms and enforcement of contracts can be influenced by the power structure of the relationship and reveal the equal or unequal sharing of costs and benefits. They also reveal the time orientation of the relationship (short or long-term).	(Monczka et al., 1998; Frazier, 1999; Benton & Maloni, 2005; Simpson, Power, & Samson, 2007; Chicksand, 2009)
Implementation process & monitoring	Understanding governance mechanisms in place to reduce opportunistic behaviours and information asymmetry. Evaluation is viewed as an important mechanism in SSCM and, in particular, supplier assessments are often conducted to increase performance. Also indicates use of compliance and engagement mechanisms.	(Heide & John, 1990; Frazier, 1999; Simpson, Power, & Samson, 2007; Chicksand, 2009)
Problem resolution	The problem- and conflict-resolution techniques will influence the quality of the relationship and performance. The way problems are addressed reveals if there are coercive influences or more constructive joint approaches.	(Monczka et al., 1998; Lindgreen, 2001; Benton & Maloni, 2005; Chicksand, 2009)
Sharing of benefits & risks	Level to which costs and performance gains of the relationship are shared between partners. Understanding if relationship-specific investments and adaptation are equally or unequally shared.	(Benton & Maloni, 2005; Chicksand, 2009; Pullman, Maloni, & Carter, 2009)

The interview protocol was refined and shortened through discussions with the collaborators at PepsiCo and piloted with two individuals. It was then further reviewed after each interview. For example, in addition to asking the participants' own definition of SSCM and views on sustainability, a definition from the literature was discussed in order to clarify the focus on three dimensions of sustainability. In fact, in AR, each individual interview represents a cycle within the broader inquiry cycle (Zuber-Skerritt & Perry, 2002; Reason & Bradbury, 2008).

5.4.4 Methods of analysis

The evidence collected was analysed in several steps. The first part of the analysis consisted in assessing the extent or degree of collaboration in the relationships between PepsiCo and their suppliers. A grid of analysis using the constructs from the interview protocol was used to facilitate the analysis of transcripts. Additional themes were added as they emerged from the data. Particular attention was paid to identify the factors that were either supporting or hindering collaboration. It was therefore necessary to examine within each construct what aspects were positive and could be built upon and which aspects were on the contrary barriers to developing a collaborative approach to SSCM. Finally considering the lack of systematic application of the relational view to SSCM, it seemed appropriate to reflect back on the enablers and barriers to relational rents presented in Table 30 and analyse if and how the findings may fit with a relational theory framework

The second part of the analysis related to power, drawing from the power regimes matrix proposed by Cox and colleagues (Cox, 2001b, a; Cox, 2004a; Cox & Chicksand, 2007c, b; Chicksand, 2009). Reviewing the literature on power in buyer-supplier relationships revealed that although RDT had been adopted widely in other

disciplines, it has had a lesser impact in management studies and SCM in particular (Cox et al., 2002). Furthermore, there have been few attempts at operationalising the concept of power in an inter-organisational context. Measures of power influences and sources have been suggested (e.g. Maloni & Benton, 2000) as well as survey items for measuring dependence based on perceptual measures of dependence (Gulati & Sytch, 2007). The model by Cox and colleagues is different from these approaches as it enables mapping and comparing the different degrees of power/dependence in given dyadic relationships and assessing the consequences of these dependencies (Chicksand, 2009). The main advantage of adopting this model in the research is that it enables capturing and visualising the evolving power dynamics between buyer and suppliers, and considering their outcomes in the context of sustainability. Although there are other approaches for assessing inter-organisational power, the power relationships matrix (Cox et al., 2002; Chicksand, 2009) provides a practice-oriented framework that is consistent with seminal works on RDT (El-Ansary & Stern, 1972; Casciaro & Piskorski, 2005). It therefore fits the practical focus of this research on relationship management for sustainability as well as the theory testing and extension orientation.

Each dyadic relationship was evaluated in terms of power/dependence and whether it could be categorized as buyer dominance, supplier dominance, independence, or interdependence (Table 34 below).

Tables 34. Power relationships types and classification criteria (Source: Adapted from Cox et al., 2002; Chicksand, 2009)

Attributes of Buyer Power Relative to Supplier		
HIGH	**Buyer Dominance** Buyer power is high when the dependence on the supplier is low, that is, criticality of the resource is relatively low (low operational and commercial importance) and the scarcity of alternative is low (i.e., availability of other suppliers). Supplier power is low because the buyer is very critical for the supplier and there is no or little alternative to supply somewhere else.	**Independence** Situation in which both buyer and supplier show a low level of dependence on each other (low levels of resource criticality and low levels of scarcity).
LOW	**Interdependence** Situation in which both buyer and supplier show a high level of dependence on each other (high levels of resource criticality and high levels of scarcity).	**Supplier Dominance** Buyer power is low when the dependence on the supplier is high, that is, criticality of the resource is relatively high and the scarcity of alternative is high (i.e., limited availability of other suppliers). Supplier power is high because the buyer is not critical for the supplier and there are alternatives/substitutes available for the supplier.
	LOW	HIGH

Attributes of Supplier Power Relative to Buyer

Responses regarding relationship management were analyzed according to themes (Table 33) in order to explore manifestations of power in the implementation of sustainable practices in the SC. I analyzed whether the existence of a power imbalance meant that the powerful player used power through different relational mechanisms (enacted or not) and in what ways it was used. I also analyzed positive or negative attitudes from the parties under influence and if there were any signs of resistance to change. I looked at how equally the risks and benefits from engaging in sustainability projects were shared between buyer and supplier. Evidence from statements about investments, contractual terms, price, and impact on business performance were used to support our judgment as to who benefits or suffers more in the relationship.

Horizontal relationships between suppliers in the different SCs were analyzed subsequently, looking at both the buyer's strategic intent for these relationships and relational patterns observed between suppliers during fieldwork. Once all relationships were analyzed individually, tables were used to draw comparisons between them and let patterns and differences emerge.

5.5 How collaborative is the relationship on sustainability between PepsiCo and its suppliers?

5.5.1 Overview of collaborative aspects on sustainability

Findings from the interviews with research participants revealed the multifaceted nature of the relationships between PepsiCo and the suppliers. In addition to the themes from the interview protocol, 'resources and capabilities' was identified as another element influencing the collaboration between PepsiCo and the growers. Within each aspect, it is possible to identify some factors that are supporting or actually hindering a fully collaborative approach between the parties. I have found more hindering factors (21) than supporting factors (14). There is also a striking interconnection between the different aspects of collaboration explored during the interviews. For example, on the positive side, the length of the relationship over generations has favoured mutual trust and the development of relation-specific assets. On the other hand, there is a clear link between the fact that communication on sustainability tends to be top-down and one way, and the lack of involvement of the suppliers in the design and development of the sustainability strategy. A full list and evidence of the different factors are presented in Table 35 below.

Table 35. Factors supporting and hindering collaboration

Themes	Supporting factors	Hindering factors	Illustrative quotes
Relationship history	Heritage growers	Nostalgia	PepsiCo "If we were a company with bad intentions they wouldn't have been supplying us for 3 generations." A2 "We are heritage growers" A5"And don't get me wrong I'm not living in the dark ages, but we used to do contracts around a bottle of wine, sitting down somewhere and we would chat about… Your word was your word."
Trust	Loyalty to relationship	Eroding trust	A.5 "Our motivation to continue supplying is loyalty to our business relationship" PepsiCo " We have got this structure of the grower group and you trust that when you convey something to the grower group that it filters down to the growers below it. It doesn't." A4 "You know in 3 years time or even 1 year time we could easily have different personalities and they would handle the situation better and differently"
	Importance of personal contacts	Lack of visibility beyond 1st tier	
	-	Frequent change of procurement personnel	
Shared goals/values	"Sustainability makes business sense"	Doubting authenticity of sustainability agenda	A5 "If we thought that they were being genuine about things…You always think there's a secondary motive, there's an ulterior motive somewhere behind what they're actually saying." C2 "In short term, in layman's terms, putting their money where their mouth is." A4" It's just a commercial bandwagon." B2 "From a moral point of view, I think it's the right way to go anyway and I'm very much in favour of that. And secondly, if it can maintain the value of the brand through marketing, then that's important as well."
	Top management support from buying firm to lead sustainability agenda	-	

Communication	Supplier groups as platform for horizontal communication	One-way communication	A5 "But it just seems as though I'm shouting into a dark hole." A2 "That is particularly environmental, the land and the farm that we are using, it is the resources we use, are they finite or not, it's wastage, it's attention to detail and its financial. To be all these things you've got to have a view environmentally, financially and socially. I think for farmers it's not difficult because it's what farming has been about for generations." PepsiCo "I'd like the growers to be able to have the confidence and the security of the relationship with us that they can feel free to be talking about things."
	Group meetings, forums	Lack of informal communication on sustainability	
	-	Limited feedback from growers	
	-	Tense commercial negotiations	
	-	Lack of information sharing between competing suppliers	
Commitment	Existing relationship-specific investments	Extent of financial investment necessary for sustainability	A.5 "We get the sustainability bit, really we do, genuinely we do, we want to make a difference but you'll bankrupt yourself doing it, you know they'll just move on and take someone else on." A1 "Our commitment is very high. Certainly on an aspirational level, it is extremely high and on a practical level, there are some enormous challenges to overcome to get there." A6 "And we're we are all aware that we need to invest in technology to improve but we need the commercial angle to cover that. We will we all struggle to resource massive investments without some sort of payback." C2 "there's this missing link again in that to achieve these kind of efficiencies for carbon footprint you have to make some sort of an investment some of the time and of course they don't want to make any investment."
	Desire to develop new knowledge	Suppliers' resistance to change	
	Investment for addressing green and social sustainability requirements	Perceived inequity of pain and gain sharing	
Participation	Supplier development activities (training, assessment…)	Unilateral approach to sustainability	PepsiCo "if you go back, the tradition is a one-year contract and there were never any thoughts for anything else."
	-	Reliance on suppliers for data	

	-	Misalignment of time frames	A1 "We tend to be more the recipients of their expectations." A6 "And you know it's very much we know that we've got to you know do what we're told but we need to operate in a world that they want us to or else we would come out of the circuit…it's tough."
	-	No formal mechanisms to capture growers' expertise	
Continuity/Mutual expectations	Desire to purse sustainability through the relationship in the long-term	Uncertainty about ability to change	A5 "So I think there'll be a growing feeling of unrest within the Pepsi suppliers." B1 "I expect our relationship with them to continue and to continue in a healthy manner." B2 "I fully expect in the longer term sustainability will become perhaps even a contract requirement to some extent. (…) And it's probably the best way, as it's simply just building into the whole production system for their customers to do this."
Resources and capabilities	Development of common resources: e.g. adoption and diffusion of IT based tool to measure carbon emissions	Growers' limited absorptive capacity	PepsiCo "These are some of the best growers in the country and they have the expertise" A.5 "Farmers haven't got a clue what to do. So our new employee is now actually doing the carbon measurement for the farm 'cause the farmers don't have the time, don't have the resources or the knowledge to actually complete what's being done."
	Growers' expertise and environmental accreditations	Lack of procurement skills to deal with sustainability questions	
	-	Limited number of "good" growers in the UK	
N	*14*	*21*	

5.5.2 Factors supporting and hindering collaboration on sustainability

5.5.2.1 Supporting factors

The relationship history between PepsiCo and the suppliers is an intangible asset but there is a feeling of nostalgia from the growers' perspective about "the way things used to be" and impression that the relationship has weakened. There is a strong feeling of trust between the multinational and the growers, which is mainly related to the history of the relationship and linked to some key people or personalities who have worked in these relationships for a long time.

Commitment is another prominent theme in the conversations with the research participants. In particular, many examples were given where growers have shown their commitment to supplying PepsiCo – e.g. harsh weather conditions, etc. Growers also talked about how they viewed PepsiCo as a reliable buyer, paying on time and respecting contract terms. In addition, as the relationships have been ongoing for several decades, both parties have invested substantially in the relationship. In particular, crops like potatoes and apples are capital-intensive and therefore imply long-term commitment for payback. This constitutes a fertile ground to build long-term collaborative relationship on sustainability.

There is also strong connection that is emerging through the various projects led by PepsiCo such as their new crop management system to help farmers have more water efficient production, and there are relationship-specific investments, in time and money, made in this direction. PepsiCo has specifically invested in supplier development activities such as training on how to use the new tools, which they coordinate in partnership with a third party (agricultural consultancy).

PepsiCo and the growers benefit from complementary resources and capabilities, which is a strong foundation for a collaborative approach to sustainability. The growers have the expertise and connection with the land that complement the technological and innovative knowledge brought by PepsiCo. Several growers are also quite proactive regarding environmental protection with for instance a grower running a separate 100% fossil-fuel free business and many growers having received LEAF (Linking Environment and Farming) accreditation.

5.5.2.2 Hindering factors

The main challenge to further collaboration is the lack of alignment of systems and technologies between PepsiCo and the growers and even between the growers themselves, which makes it difficult to work in a unified manner towards the same goals.

In terms of knowledge sharing mechanisms, there are still barriers to transparency mainly arising from the tension around commercial negotiations. Much information has been collected from the growers regarding carbon and water, but there seems to lack a feedback loop or regular points of contact and updates about progress and how the data is used. The growers therefore feel that much of their efforts are pointless and they are disincentivised to provide further data. It is also possible to notice that the focus has primarily been put on gathering hard facts and data and little on capturing the tacit know-how that has emerged from the long-standing relationships.

Growers seem to lack the resources to appropriately develop an absorptive capacity that would allow them to get the new information and apply it successfully. They particularly struggle when it comes to finding the financial resources to invest

in new infrastructure that would help them achieve the sustainability goals, for example more energy efficient storage. Furthermore, as many of the growers are small businesses, addressing PepsiCo's sustainability requirements represents more work for them and they often do not have the expertise to deal with it and/or lack the resources to hire additional personnel who would be dedicated to it. One of the main factors that also prevents the development of the growers' absorptive capacity is that they tend to consider additional relationship-specific investments as highly risky as they do not benefit from the formal assurance of a long-term commitment from PepsiCo.

Despite obvious complementarities, there is a lack of channels and mechanisms to actually capture the growers' expertise. This is related to the way that communication and participation on sustainability are orchestrated in the relationships. A clear distinction can be made between existing formal means of communication (general meetings) and informal ways of communicating (conversations between individuals). Sustainability tends to be discussed in formal meetings organised by PepsiCo while informal communication remains centred around commercial aspects of the relationship. The growers are not consulted or involved to a great extent in the development of sustainability strategies, which results in many of them not understanding fully what is expected of them and/or actually resisting the change that they perceive as dictatorial. Communication and participation around sustainability is unilateral and it remains general rather than focussed individualised exchanges. This is a particularly challenging aspect, as it appears that no common frame of understanding about sustainability exists between PepsiCo and the growers.

5.5.2.3 Reflecting on the relational view in this research

Overall, findings from the interviews have shown that although there exist supporting conditions for successful collaboration on sustainability, a number of factors are impeding a truly collaborative approach to SSCM. Reflecting back on the core elements of relational theory identified in the literature review (see section 5.3.2.2) in the light of the findings enabled assessing the extent of the fit of the relational framework in the context of this study. Supporting and hindering factors identified in Table 35 were grouped into three categories corresponding to the relational framework: enablers, barriers and lack of enablers to collaborative advantage for SSCM. It is possible to note that the lack of enablers plays a more critical role in preventing further collaboration on sustainability than actual barriers. Table 36 shows how the findings fit with the elements of the relational view.

Table 36. Enablers, lack of enablers and barriers from relational view

Enablers from relational view	Enablers identified in the study
Investments in relation-specific assets	Relationship history: heritage growers Existing relationship-specific investments Loyalty to relationship Proactive behaviour from buyer to engage in green and social initiatives Desire from suppliers to develop new knowledge
Knowledge exchange, including exchange that results in joint learning	Supplier development activities on sustainability (training, assessment…) Existence of forums and meetings to support sustainability communication
Combining complementary resources or capabilities leading to innovation	Adoption and diffusion of IT based tool to measure carbon emissions Growers expertise and environmental accreditations
Effective governance	Top management support at the buying firm Supplier groups structure of the SCs as a platform for horizontal collaboration and communication
Lack of enablers from relational view	**Lack of enablers identified in the study**
Lack of investments in relation-specific assets	Lack of visibility beyond 1st tier suppliers Lack of trust in authenticity of buyer's sustainability agenda
Lack of knowledge exchange, including exchange that results in joint learning	Limited growers' absorptive capacity related to environmental and social management Lack of two-way cooperation on sustainability issues Lack of informal communication Lack of environmental information sharing between competing suppliers
Lack of combining complementary resources or capabilities leading to innovation	Lack of financial resources to invest in sustainable technologies Lack of standardised mechanisms to capture growers' expertise on the natural environment Lack of procurement skills to deal with sustainability questions
Lack of effective governance	Lack of informal governance mechanisms to manage sustainability Lack of attention to growers resistance Misalignment of time frames for achieving sustainable goals
Barriers from relational view	**Barriers identified in the study**
Asset inter-connectedness	Increasing dependence over growers to access environmental and social data results in loss of control by buying firm
Partner scarcity	Limited number of "good" growers in the UK who are able to comply with the requirements
Resource indivisibility	Perceived inequity of pain and gain sharing regarding sustainability Suppliers resistance to change
Institutional environment	Geographic dispersion and isolation of suppliers UK legislation on renewable energy as a disincentive to investment in agriculture

Analysing the themes from the interviews in the light of relational theory enabled a more nuanced categorisation of the factors that affect collaboration on sustainability. In particular, a distinction has been made between lack of enablers and barriers, hence contributing original findings to the literature that currently tends to focus on the positive aspects of SSC collaboration. In addition, further factors related to the institutional environment have been identified.

In terms of newly identified barriers, participants in this study expressed their concerns about partner scarcity and asset inter-connectedness when considering the achievement of long-term sustainable goals. On the one hand, managing the growing interdependence between PepsiCo and the suppliers regarding the management of environmental and social issues is proving difficult, and it results in tensions. On the other hand, it appears difficult for PepsiCo to find agricultural suppliers with an appropriate level of awareness regarding the management of environmental and social issues, which are also able to match the standards of crop quality.

Regarding the lack of enablers, several factors translate into a lack of ability to combine complementary resources or capabilities leading to innovation. The first is the inability to access the financial resources to invest in sustainable technologies and infrastructures. This theme can be linked with the 'perceived inequity of pain and gain sharing regarding sustainability' identified in the barriers. The other factors are the 'lack of standardised mechanisms to capture growers' expertise on the natural environment' and also the 'lack of procurement skills to deal with sustainability questions'. Both these aspects mean that the approach to sustainability in the SCs tends to remain unilateral and not fully integrated with the commercial aspects of the relationships. In terms of lack of effective governance, the 'misalignment of time frames for achieving sustainable goals' is closely related to this divide between

commercial and sustainability aspects. The 'lack of informal governance mechanisms to manage sustainability' and the 'lack of attention to growers resistance' support the finding about the unilateral approach to sustainability and reveal the difficulty to achieve collaboration in asymmetric SC relationships.

5.6 How does power influence the management of sustainability practices between PepsiCo and its suppliers?

This part will focus on highlighting how power plays out in the relationships, as an alternative perspective on how SSCM is advanced between PepsiCo and the suppliers.

5.6.1 Measuring power imbalance between PepsiCo and its suppliers

5.6.1.1 Power at the dyadic level

The interview findings regarding criticality and scarcity have allowed mapping the different relationships on the power/dependence matrix (Table 34 above). The analysis of the power relationships is presented in Table 37.

Table 37. Power relationships at the dyadic level

Relationship	**Buyer Power**	**Supplier Power**	**Relationship Type**
PepsiCo – A1	HIGH	LOW	Buyer dominance
PepsiCo – A1.1	HIGH	LOW	Buyer dominance
PepsiCo – A2	HIGH	MEDIUM	Buyer dominance
PepsiCo – A3	HIGH	LOW	Buyer dominance
PepsiCo – A4	HIGH	LOW	Buyer dominance
PepsiCo – A5	HIGH	LOW	Buyer dominance
PepsiCo – A6	HIGH	LOW	Buyer dominance
PepsiCo – B1	LOW	HIGH	Supplier Dominance
PepsiCo – B2	MEDIUM	HIGH	Supplier dominance
PepsiCo – C1	LOW	HIGH	Supplier Dominance
PepsiCo – C2	HIGH	LOW	Buyer dominance

All the relationships reflect an existing power imbalance between customer and supplier. Most relationships between PepsiCo and its SME suppliers fall into the buyer dominance category. Only three relationships can be categorized as supplier dominance. Details and evidence of the dominant relationship types are presented in Table 38.

Table 38. Dominant relationship types with PepsiCo

Relationship Type	Critical Themes	Illustrative Quotations
BUYER DOMINANCE	Buyer represents high proportion of supplier's revenue Lack of alternatives to supply Captive supplier situation Multiple suppliers available	A.2 "For crop A, there is nowhere else for them to go." A.6 "The vast majority of crop A we grow are for PepsiCo." A.1 "We are sole suppliers, we are not supplying any other customer of A." A.2 "I have never added up what capital is behind the thousands of tons that we supply, I don't quite have a figure, but it's millions and millions." A.4 "PepsiCo regards a contract over a year as a liability." B.F. "There have been some tense contract negotiations over the last few years." C.2 "Our current business was initiated by PepsiCo about 8 or 9 years ago to provide a better avenue for their supply of crop C into the future." "We used to supply 100% of crop C for the brand but then PepsiCo chose to have more suppliers because they felt that having one supplier wasn't the most cost effective and least risky way." "Most of their contracts are for short-term supply and they are reluctant to sign long-term agreements."
SUPPLIER DOMINANCE	Buyer represents small proportion of supplier's revenue Criticality of crops for buyer's new product portfolio Small number of suppliers for the crop Lack of relationship specific investments from suppliers (flexibility)	PepsiCo "In certain ways crop B suppliers are very tactical. They play the market. If the prices go up for something they will all go there, if prices go down…" "B is a crop you can go in and out, it doesn't have the capital requirements of other crops. We have more of a battle in our hands to have these suppliers keep growing B." B.1 "Because this area is a big producer of B, there has been an interest for PepsiCo to speak and trade with us." "There are other commercial opportunities for us suppliers on the open market." C.2 "From their point of view they want the security of supply because crop C is important for their economic viability." "They are expanding their requirement of C because of their new product portfolio and their main priority is to safeguard future suppliers." "The motivation to supply PepsiCo is very minimal because we aren't in crop C for them. It just happens that PepsiCo is a useful way of selling the leftovers of crop C." "The longer the contract, the bigger the risk to us as merchants."

5.6.1.1.1 Buyer Dominance

All relationships with Food A suppliers were dominated by the buyer. PepsiCo accounts for a relatively high proportion of supplier revenue, between 10% for supplier A2 and 90% for supplier A3. Suppliers of Food A mentioned the lack of alternatives to sell their agricultural products, which results in a high level of dependence on PepsiCo. This lock-in is reinforced by the capital requirements of growing crop A. PepsiCo has more flexibility regarding its supply base, with more than 100 growers producing the crop. Supplier A1 and Supplier C2 can actually be considered dedicated suppliers, as the former supplies crop A to PepsiCo only and the latter was created at the request of PepsiCo to provide a secure supply of crop C.

Suppliers' accounts of tense price negotiations and tough contractual agreements provide further evidence of buyer dominance. Although most of the relationships have been ongoing for several decades, contracts have been signed every year, with a push from PepsiCo to drive prices down. PepsiCo is reluctant to enter long-term agreements with the suppliers. The supplier base is managed through supplier groups, which nominally appear to be aimed at strengthening the connection between suppliers and buyers. However, in practice, this has primarily allowed PepsiCo to exert more operational control over these dedicated suppliers through, for example, more stringent quality requirements, vendor assurance audits, and a transfer of operational responsibilities to the growers (e.g., washing, storage, quality control).

It was evident however that there were varying degrees of buyer dominance between PepsiCo and the suppliers. This had an impact on the level of SSCM compliance. In relationships with the most significant power differentials (e.g. A.1.1, A.1, A3), the suppliers were more inclined to comply and respond to PepsiCo's demands for fear of losing their contract. This translated into, for example, supplier's

quickly sending back filled in questionnaires to appear responsive and acquiescent. These suppliers were also more willing to trial new initiatives such as testing alternative crop varieties. The degree of power therefore provided PepsiCo with more potential to impose their sustainability agenda. In the relationships with a lesser degree of buyer dominance (e.g. A.2, A.6), suppliers complained about having to comply with multiple sustainability demands from different customers. As they were less reliant on PepsiCo they were able to postpone responding to their demands, for example, providing carbon measurement information. The relationship with PepsiCo provided these suppliers with opportunity to develop an expertise on sustainability, which they were then able to use to leverage better contracts with other customers.

5.6.1.1.2 Supplier Dominance

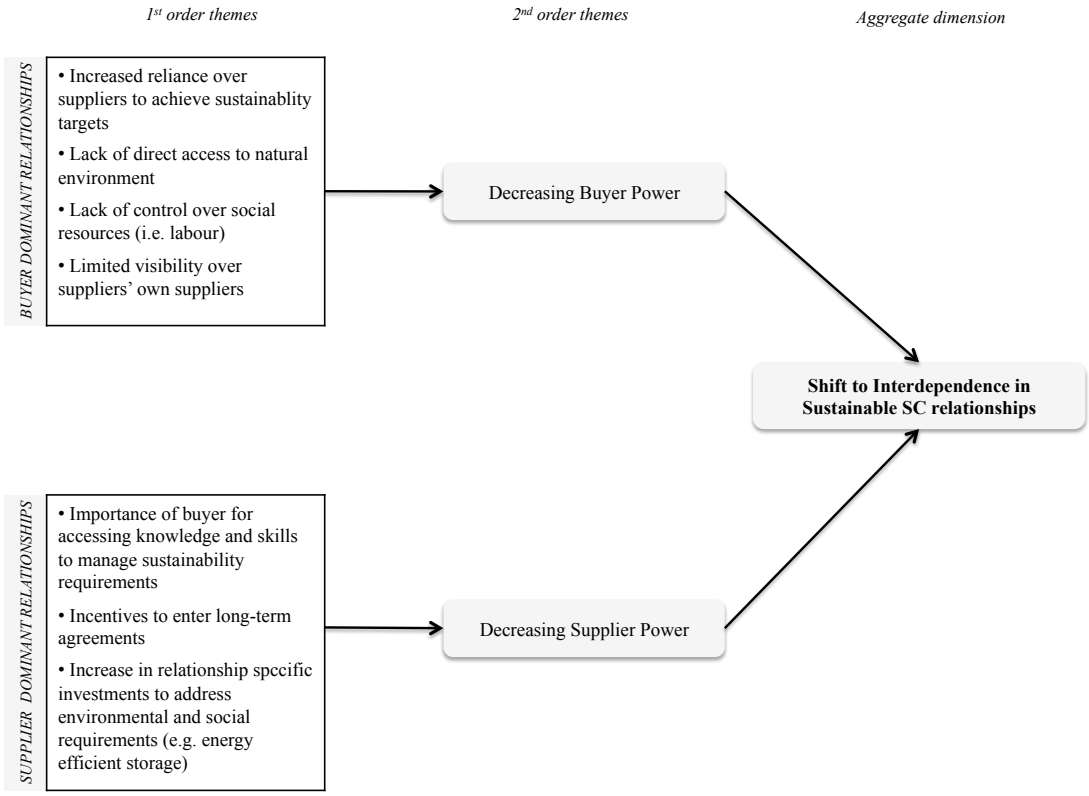
Suppliers B1, B2, and C1 are in a dominant position compared to PepsiCo mainly because of the flexibility of their positions. While they are happy to maintain the relationship with PepsiCo, they have a number of alternative supply options for their crop, and in the case of B, they are able to exit the relationship without having to incur additional costs. This means that PepsiCo finds itself in a position in which it has to rely on these suppliers to obtain the crops that are central to its new "healthy and sustainable" product portfolio.

Evidence of supplier dominance is also visible in the contractual arrangements. In these cases, the suppliers seem reluctant to enter into long-term agreements with PepsiCo because this may present a risk to them, as it would mean being locked in to PepsiCo.

5.6.1.2 Shifting Levels of Dependence

The findings presented above primarily reflect the power/dependence structure of the relationships in commercial terms. There is evidence suggesting that the recent inclusion of sustainability in the relationship has led to a restructuring of dependencies. Figure 18 illustrates evidence of the shift to interdependence.

Figure 18. Evidence of shift to interdependence (Source: Author)



PepsiCo is becoming increasingly reliant on its suppliers to achieve its sustainability targets. When talking about the necessity to reduce carbon emissions and improve water-management practices, the agricultural team expressed concerns about PepsiCo's ability to reach its targets, considering that it was the growers who were responsible for managing the environmental resources.

"It is not us delivering because we are not farming anything, we don't farm things."(Agronomist at PepsiCo)

This highlights the fact that the growers have privileged access to the natural environment compared to the buyer. The suppliers also deal with social issues such as managing seasonal/temporary labour hired for harvesting. The growers are therefore very critical for the buyer in terms of environmental and social sustainability in the SC.

The intermediary role played by the suppliers is another important aspect, which revealed that PepsiCo's dependence was increasing when it came to SSCM.

"The big concern from me is how you get out to all the growers because this is the agriculture team [pointing at 3 members] so physically we cannot do it ourselves." (Head of agriculture team at PepsiCo)

The relationships with the first-tier suppliers are key to ensure engagement with sustainability farther up the chain. One of the suppliers highlighted that "good growers" were disappearing, and it was in PepsiCo's interest to try and retain them through their first-tier relationships.

"Our job is to cascade that down to the growers further up the chain and generate the interest and the understanding and how important they find it." (Supplier A1)

Similarly, there was evidence that dominant suppliers' dependence on PepsiCo was increasing in the context of managing environmental and social resources. In particular, as the food industry is becoming stricter regarding environmental and social standards, the suppliers see the relationship with PepsiCo as a way to access the knowledge and skills they will need in the market.

"Discussing sustainability with PepsiCo had an impact on us in terms of making us think differently about where our industry is headed (...) I think that PepsiCo are several steps ahead of everyone else. And we're very much looking at the relationship that we have with PepsiCo now as being probably quite a good insight into the way we will trade with a lot more people in the future." (Supplier B1)

In addition, dominant suppliers were incentivized to enter longer-term agreements with PepsiCo. From PepsiCo's point of view this was a way to ensure the continuity of supply for their healthy product portfolio. From the suppliers' perspective there was a price advantage in entering into a longer-term agreement, despite the relative loss of power.

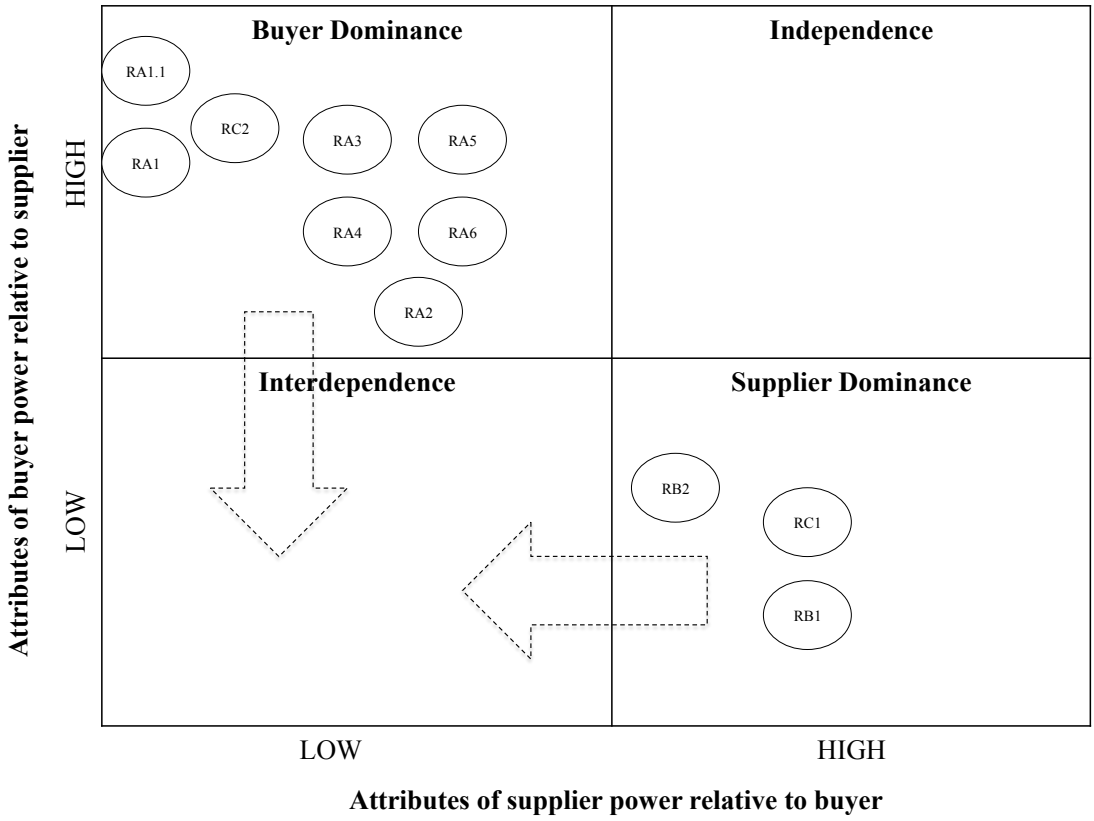
"We've been able to get a slightly better price in return for giving that commitment." (Supplier B2)

The relationships have been mapped according to the power dynamics observed, as shown in Figure 19. The analysis presented in Table 37 illustrates that the power dynamics within the relationships were not always the same. Some relationships were clearly aligned with the classification criteria shown in Table 34 and the key themes as identified in Table 38. These relationships were therefore positioned toward the boundaries of the quadrants, demonstrating a greater degree of buyer or supplier dominance, i.e. RA1 and RB1. In contrast, those relationships that showed only a partial fit were positioned relative to how closely they matched the profiles described in Table 34 i.e. RA2 and RB2. This process required interpretation, as the existing power model (Cox, 2001b; Cox, 2004a) did not incorporate varying degrees of power imbalance within the four broad categories.

The analysis has therefore captured the degree of power imbalance within the relationships, rather than fitting them into one of four broad categories (i.e. buyer

dominance, supplier dominance, interdependence, independence). Having a more nuanced approach to the categorization of power relationships is a significant finding, but one which requires fuller investigation and explanation in the future. The dotted arrows indicate that as the relationships evolve to encompass sustainability goals, there is evidence that dependencies are shifting toward interdependence. Regardless of whether the starting point is supplier dominance or buyer dominance, through the actions of the different players or simply as a result of increasing dependence on now-key resources (i.e. 1st order schemes shown in Figure 18), there is a convergence towards interdependence. A move to interdependence for either dominant buyers or suppliers will result in a loss of power. However, in return it is likely that there will be advantages such as preferential terms, increased security, knowledge exchange, more significant joint learning opportunities and hence a greater potential to fulfil the sustainability agenda.

Figure 19. Mapping of relationships in terms of power/dependence (Source: Author)



5.6.2 Power Influences in Relationship Management for Sustainability

Another aim of this cycle of inquiry was to understand the ways in which power was affecting the implementation of SSCM between PepsiCo and the growers. There are several indications from the interviews of how power affects the management of relationships around sustainability issues. They have been labelled "power influences on SSC relationships" and classified according to which dimension of the relationship they affect. Evidence of these power influences is presented in Table 39.

Table 39. Power influences on SSC relationships

	Description	Illustrative Quotations
Contractual arrangements Sustainability requirements in contract	Additional clauses in contracts related to environmental and social goals	A.4 "With sustainability in the contracts, it's more a policing way." "This is not the sort of negotiations need to be doing. This is hugely short termist. They are very short-termist considering what they are trying to achieve the other side on the carbon reduction and sustainability." B.F. "I think at the moment it is a real struggle to get supplier B1 and B2 to contract."
Tense contractual negotiations	Difficult to reach agreement on prices and contract clauses	
Contract length	Short-term contracts for commercial flexibility	
Contractual uncertainty	Difficult to contract with dominant suppliers	
Planning and goal setting Multiplying sustainability requirements	Increasing number of environmental and social projects to be completed by suppliers	C.2 "They have introduced a huge raft of requirements." A.1 "We tend to be more the recipients of their expectations." A.1 "They are always looking for the next problem or the next challenge or the next opportunity and it is good to work with companies of that calibre."
Short- vs. long-term orientation	Sustainability goals are set over period of 5+ years and commercial goals are set every year	
Unilateral decisions	No involvement of suppliers in the development of sustainability initiatives	
Sustainability leadership	Buyer's access to new technology and knowledge on sustainability	
Implementation process & monitoring Sustainability push	Top-down implementation and enforcement of sustainability projects	B.F. "It's definitely a push for sustainability." "We don't want to keep shoving it down their throats." B.2 "And so in conjunction with the requirement eventually to carry out a carbon audit, they're really emphasizing the sustainability message when we meet them."
Supplier auditing	Detailed and systematic examination of suppliers' environmental and social practices	
Supplier training	Organization of specific sessions and meetings with external facilitator to teach suppliers how to deal with new requirements	
Delegation	Suppliers responsible for ensuring compliance of other suppliers	
Minimum compliance	Suppliers not willing to go beyond box-ticking exercise	

Communication & information sharing Lack of sustainability conversation	Sustainability issues are not part of daily informal conversation	B.F. "They are not terrifically disciplined in terms of data collection." A.2 "Sustainability is another one of those terms that they want us to use because it's fashionable."
Buyer's terminology	Terms and issues part of the sustainability agenda defined by the buyer	
Formal sustainability meetings	The main platform to discuss sustainability issues is biannual meetings organized by the buyer	
Forensic supplier data collection	Initiatives aimed at gathering data from suppliers about costs and environmental and social impacts	
Commitment		B.2 "Sustainability might take a back seat until they can encourage production of more B from their suppliers." "We haven't spent a lot of time on it so far."
Suppliers' sustainability investments	Upfront investments made by suppliers to comply with buyer's sustainability requirements	
Minimum efforts	Limited amount of time and investment spent by suppliers to address buyer's sustainability requirements	
Supplier resistance	Unwillingness to comply or engage in further requirements	
Benefits and risks sharing Buyer's reputation benefits	Buyer's enhanced visibility and reputation for addressing sustainability issues (e.g., awards, press coverage)	A.1 "(The requirements) are putting pressure on us as a business." "They are guiding us down that route and are putting pressure on us to move that way, without having to pay us a great deal more money." C.2 "To achieve these environmental goals, you have to make some investments but of course they don't want to be making those investments."
Buyer's financial benefits	Buyer's returns on investment and cost reduction from encouraging environmental and social compliance from suppliers	
Rising supplier costs	Small return on capital and upfront investment with no increase in prices	
Supplier differentiation	Advantage of being compliant when dealing with other customers	
No sustainability reward system	Price negotiations and bonuses not linked to sustainability requirements	
Expectations & continuity Expectations of compliance	Buyer's expectation to reach 100% compliance from growers	A.1 "If we want to be a supplier of theirs, which we have been for many years, we need to and want to go with them." A.5 "Growers are saying, 'Why would I want to do this? I have got enough on my plate
Shared responsibility	Desire that decisions and responsibility will be more equally shared between buyer and suppliers	

Commercial necessity	Reason for staying in the relationship and complying driven by high dependence on buyer	without having to fill in 800 lines of Excel spreadsheets, which isn't even finished yet.'"
Supplier disenchantment	Perception of degrading relationship quality and general discontent about terms of relationship	

Themes related to supplier power

PepsiCo has been using its powerful position to advance its sustainability agenda with the growers. The terms employed by members of the agriculture and purchasing team within PepsiCo confirm the idea of a push for sustainability and the necessity for the suppliers to comply with requirements. There is evidence of coercive power in the contractual arrangements and in the one-way communication, with emphasis on monitoring and the lack of involvement of the suppliers in planning and setting the sustainability goals.

Power imbalance is also reflected in the unequal sharing of investments and risks in relation to sustainability (e.g., storage investments required from the growers, climate change risks for growers). This inequality is reinforced by the lack of alignment between the commercial goals ("more forensic on costs") and the sustainability agenda of the buyer. The suppliers have a challenge to find the necessary resources to comply with the sustainability requirements. As its dependence on suppliers increases, PepsiCo is reluctant to enter long-term agreements, which could provide further engagement on sustainability.

The use of power to implement sustainability appears to have its limits, as PepsiCo is faced with growing resistance and resentment from the suppliers. All the suppliers interviewed have expressed their desire to see greater demonstration by the buyer of the mutuality of the relationship and greater recognition of the specific efforts they make and difficulties they face in addressing sustainability issues. Power imbalance has impacted how sustainability goals have been defined, with little consideration for the growers' perspective and expertise. This has reinforced suppliers' negative feelings about the quality of the relationship with PepsiCo. This resistance has led to a lot of uncertainty for PepsiCo in terms of whether it will achieve its sustainability goals (e.g., carbon reduction). For instance, PepsiCo faces

uncertainty regarding the accuracy of the environmental data it requires from the suppliers and finds it difficult to move beyond minimal levels of compliance.

Interestingly, when dealing with dominant suppliers, there was a minimal level of engagement around sustainability in the relationships, which are more focused on commercial aspects and price. PepsiCo has made recent attempts to try and restructure the relationships with the suppliers in its favour by trying to negotiate longer-term agreements. This is a way of reducing the suppliers' bargaining power while advancing sustainability. Conversely, weaker suppliers can also adopt the same strategy to increase PepsiCo's dependence and increase their bargaining power. It is evident therefore that power relationships are dynamic and that buyers and suppliers can employ strategies to restructure the dependencies.

In terms of outcomes, PepsiCo has managed to significantly reduce the carbon emissions (≈27%) and water consumption (≈70%) in its SCs since 2010. Despite this progress, PepsiCo is not sure of being able to reach its goal of halving CO_2 by 2015. Suppliers are required to measure the carbon impact of their activities through a computer-based tool. However, gathering the data represent big challenges. PepsiCo employees send out many reminders and have to constantly chase suppliers, who view these requirements as additional hurdles with no additional benefits. The focus has been put on environmental projects and primarily carbon, and social initiatives have not been implemented to the same extent because they are viewed as more difficult to measure and less relevant to agricultural suppliers in the UK.

5.7 Horizontal Relationships and SSCM

Analyzing the relationships between suppliers reveals that the PepsiCo's strategic intent is to try and manage the relationships between the suppliers, especially in the case of A, to achieve both its sustainability goals (encourage them to collaborate) and more short-term economic goals (foster competition between them). However, as the suppliers are increasingly collaborating, they become more conscious of their own power over PepsiCo and become more resistant to changing their practices. Characteristics of horizontal relationships are summarized in Table 40.

Table 40. Horizontal supplier–supplier relationships in the different SCs

	General Description From Cases	Buyer's Strategic Intent	Supplier–Supplier Relationship Characteristics Observed
SUPPLIERS A	Suppliers are geographically dispersed but organized in supplier groups. Group sizes and organization vary. Head of groups are the main points of contact for B.F.	Exert competitive pressure between supplier groups to keep prices low, high quality, and stimulate compliance. Reduce supply and environmental risks by sourcing from multiple large suppliers in different regions. Stimulate performance and transparency around newly introduced environmental and social projects by having suppliers collaborate (e.g., supplier group training on carbon measurement tool).	Collaborative relationships and information sharing within groups Some individual affinities across groups but limited amount of information sharing as proprietary information is viewed as competitive advantage Head of groups are in charge of negotiating contracts for the group, passing down sustainability requirements, and managing the relationships between group suppliers. Solidarity between suppliers around degrading quality of relationship and increasing requirements Coopetitive relationships
SUPPLIERS B	Limited number of suppliers in two distinct geographical locations.	Reduce supply and environmental risks by sourcing from two main supplier groups in separate regions. Increase performance by making the two main suppliers compete to supply the most environmentally efficient farm-to-factory services.	Limited interaction between supplier groups Cordial relationships between supplier groups as perception of being different types of suppliers (complementary) Transparency within supplier groups but no information sharing between groups Primarily competitive relationship
SUPPLIERS C	One dedicated supplier and other ad hoc suppliers selling leftover supplies of C that couldn't be sold to retailers. Limited continuity of supply base except for C2.	Reduce costs of sustainability by tapping into suppliers' previous experience and certifications acquired for other buyers. Stimulate competition between C2 and other suppliers to get better prices and reduce risks.	Knowledge of identity of other suppliers but no interaction C2 negatively perceive other suppliers Minimal explicit information sharing Competitive relationship

From a collaborative point of view, the supplier groups represent an effective platform for horizontal collaboration and communication on sustainability. The suppliers are gathered during forums and meetings a few times a year and they appear to be willingly sharing their frustrations, achievements or simply their

comments regarding PepsiCo's initiatives. There is a certain level of openness between the suppliers when it comes to sustainability but mostly related to the impact of the new initiatives on their operations and the difficulties they face rather than actual performance achievements. The existing relationships between the suppliers can help PepsiCo diffuse their sustainability strategy and can also facilitate the gathering of feedback as suppliers may feel less comfortable to share their problems individually.

Bargaining power shifts in favour of the suppliers when considering the horizontal relationships. Relationships between potato suppliers are coopetitive, and PepsiCo attempts to advance sustainability while encouraging price competition. Coopetition is visible through the expectations from PepsiCo for suppliers to collaborate and share learning on carbon and water management within the group but compete on price, and when competing suppliers share the cost of investing in new environmentally friendly storage facilities. This approach implies that suppliers in A are willing to maintain a long-term relationship and comply with the buyer's requirements while tolerating a short-termist behaviour regarding contracts and prices. As it is often difficult for suppliers to understand the antagonistic pressures from the buyer, this leads to resentment and solidarity among them despite competition.

In this study there is a clear imbalance between PepsiCo and individual suppliers. Although this power differential still remains, when considering the suppliers as a group (i.e. A) there are some subtle changes in how power manifests itself in the relationship. While on an individual basis the suppliers find it difficult to resist the demands from PepsiCo, they have a more effective voice as a group. When PepsiCo purchased drip irrigation equipment and gave it to the suppliers, as a group

they discussed PepsiCo's initiative and most of them chose not to take on the technology. This was because they had not been consulted before the purchase and they thought the solution would add extra costs to their operations. Without the forum to be able to talk over this issue, suppliers of A would have been unlikely to resist this initiative. Clearly the supplier groups are a setting imposed by PepsiCo but the non-expected side effect of this is the emerging sense of group power when it comes to questions of sustainability, which does not exist on an individual supplier basis. There is a high risk of relationship failure in A, as PepsiCo continues to exploit its power position to try and manage the relationships between its suppliers.

5.8 Conclusion and practical implications

This cycle of inquiry has helped developed a comprehensive understanding of the nature of the relationships between PepsiCo and its suppliers. The implications of this cycle of inquiry are twofold. First, drawing on the findings on collaboration and power serves to address RQ5 "How does a large buyer like PepsiCo work with its small suppliers to implement sustainable SC practices?" and makes for an interesting theoretical contribution to SSCM. Second, the insights gained through this cycle of inquiry have practical implications for the rest of the research and inform the design of the next cycle of inquiry.

5.8.1 How does a large buyer like PepsiCo work with its small suppliers to implement sustainable SC practices?

The collaborative and power aspects of the SC relationships between PepsiCo and the suppliers have been explored. The main contributions of this chapter to the field of SSCM are the nuanced view of collaboration and the adoption of a power perspective, extending the RDT model to explore SSC relationships.

This cycle started from the premise that relationships in SSCs are intricate and although current research seems to favour a collaborative approach, reality is such that SC relationships for sustainability tend to display characteristics that are related to both collaboration and compliance. In attempting to gain a comprehensive understanding of the ways of working between PepsiCo and its small agricultural suppliers, evidence collected from the research participants was interpreted from two different theoretical perspectives, namely collaboration and power. Comparing and contrasting between the paradigms enables gaining a fuller understanding of the dynamics at play in transforming SC relationships to encompass sustainability.

There exists a certain degree of collaboration between PepsiCo and the suppliers, which primarily depends on relational capital. The strength of the relationship history between PepsiCo and the suppliers is conducive to increased collaborative efforts related to sustainability. Based on existing levels of trust and commitments, PepsiCo has engaged on a number of initiatives with the growers that require that responsibilities be shared. However, there are multiple factors that hinder full collaboration between PepsiCo and the suppliers such as varying levels of capabilities and commitment. It is difficult for PepsiCo to adapt its approach to each individual supplier and therefore there is a growing perception from the growers that sustainability is implemented in a unilateral fashion. Applying the relational view to analyse the findings showed the existence of several enablers to collaboration but particularly served to highlight the importance of the lack of enablers and barriers to achieving collaboration on sustainability in the context of the relationship between a large buyer and small suppliers.

The power perspective seems particularly suitable to the case of PepsiCo and the growers. The findings support RDT in explaining how commercial dependence

can foster compliance and how PepsiCo as a dominant player can use power to drive sustainability in the SC. In this sense, power can undermine the advancement of sustainability in the SC, as it has created resistance from the small suppliers but also weaken their ability to engage in longer-term sustainability strategy by reducing their economic bottom line. Horizontal relationships among suppliers, although creating a platform for PepsiCo to encourage supplier collaboration on environmental and social projects, can create concerns for the long-term pursuit of sustainability goals as the small suppliers develop a sense of group power and combine forces against PepsiCo.

The findings suggest that the evolution from a commercially focused relationship to one that encompasses sustainability issues has resulted in a change in the levels and nature of dependencies. This transition may lead to conflict situations between PepsiCo and the suppliers. This situation is a potential barrier to further engagement between parties to address key sustainability issues.

Power imbalance is not necessarily detrimental to the advancement of SSCM. Rather, it is crucial for PepsiCo and the suppliers to develop a clear understanding of the dependence structure of SC relationships in order to identify appropriate management strategies that can facilitate the simultaneous advancement of environmental, social, and economic goals.

5.8.2 Practical implications and next inquiry cycle

This cycle of inquiry has been foundational to the progression of the research, as it has enabled identifying the critical areas that would need to be addressed with the research participants in the subsequent cycle of inquiry. This cycle also spurred personal reflection, as shown in the diary extract below.

Diary – "Of relationships and sustainability", September 2011

The more I talk to growers and learn about them and PepsiCo, the more I feel there exist such an untapped amount of opportunities to capitalise on the knowledge and expertise of the growers. They have been running their businesses for years and they know the tricks of their industry as much as PepsiCo knows the tricks of its own. I am not saying that they are some sorts of gurus but at least they are able to provide the best information about their activities. Gathering them in meetings with the agro team and presenting them with the new initiatives in terms of sustainability and what should be done and so on and so forth is not the most effective way to engage them. A supplier who also runs an organic vegetables business would most certainly bring some insights on the table regarding the preservation of the environment and how to deal with long and hard processes of certification.

There are stories out there that remain untold to the customers. Farming is the hidden side of the business (yeah ok apart from the picture of the tractor on Walkers Crisps bags…) and it needs to go public. There is nothing to be ashamed of regarding the way things are done on the farm, it is a learning process for all but also a rewarding one and it would be nice for everyone involved to rip the benefits of the sustainable image.

Another thing is that farming is by nature an uncertain and risky activity. It has been through years and despite the advancement of science, there some aspects that don't change and one year can be better than other and it's very variable. So even if change is a scary thing and it feels like there is going to be resistance, it is very likely that the main source of the resistance will not be uncertainty for farmers because they deal with it on a daily basis. Rather, resistance may come from how things are communicated or not communicated for that matter and what kind of incentives and support is provided in case of failure. Sharing responsibility is about sharing support and benefits.

The findings from this cycle have led to identifying several key areas to build upon for further work with PepsiCo and the growers. These areas are:

i. The existence of strong relational antecedents between PepsiCo and the growers that can be built upon;
ii. The necessity to take into account the growing interdependence, and its implications in terms of power dynamics, between the parties when dealing with sustainability issues;
iii. The relative lack of a 'growers' voice' in the development and implementation of sustainability projects;

iv. The absence of a clear common framework of understanding of sustainability;
v. The need to find new/alternative ways to communicate about sustainability in the context of the relationships.

Overall, discussions with the various stakeholders revealed the importance to explore synergies in order to support the development of successful relationships for sustainability.

Chapter 6 – Co-exploring the way forward: making sense of SC relationships for sustainability

6.1 Introduction

6.1.1 Objectives

Once again let us recall the overarching research question that has guided the project:

RQG. How can SSCM be facilitated through the relationships between a large customer and its small suppliers?

In the previous chapter, the first level of the research was covered. It served to develop a better understanding of the existing relationship dynamics between PepsiCo and its suppliers. This was a critical first step towards addressing the second dimension, which is about exploring ways for change or improvement. This constituted the primary focus of the second cycle of inquiry, organised around rounds of participatory workshops. Contrary to the previous one, this research phase was more participative, engaging a selected number of research participants in the co-exploration of the ways to improve the working relationships on economic, social and environmental issues. This chapter presents the findings and analysis of the second cycle of inquiry. Particular attention is paid to describe and analyse both the process and content of articulating possible ways to change. This chapter focuses on the individuals that take part in the relationships.

6.1.2 Structure of the chapter

The first section of this chapter offers a reminder of the findings from the previous cycle of inquiry, and a more specific sub-research-question is proposed to guide this second cycle. The following section delves deeper into the theoretical

backdrop to this cycle, namely the role of individuals in SSCM and sensemaking theory for sustainability. The section provides details about the ways in which sensemaking theory has shed light on novel aspects of SSCM through this cycle. The participatory workshops as primary mode of co-exploration and sensemaking are explained in the subsequent part. The next three sections present the findings. The last part of this chapter offers some conclusions and practical implications of this cycle of inquiry.

6.2 Background and sub-research question

6.2.1 Findings from the previous cycle

Findings so far primarily revealed the lack of a unified and congruent approach to sustainability between PepsiCo and the suppliers. Findings from the interviews also revealed that the various stakeholders held different views about what sustainability meant and entailed for the relationship. Drawing from the work of Vlaar et al. (2006) can help explain that inter-organisational relationships are often characterised by high levels of uncertainty and ambiguity, which results in the different parties involved in these relationships to develop different and sometimes divergent interpretations and understandings of the same issue. By attempting to address sustainability through their existing relationships, PepsiCo and their suppliers are bound to face some "problems of understanding" that impede coherent collective action (Vlaar, Van den Bosch, & Volberda, 2006). Sustainability poses new challenges and therefore requires that business relationships evolve to accommodate it. PepsiCo and the growers are in the midst of this transformation, caught between existing relational structures and the necessity to address new requirements, and face the difficulty to understand what type(s) of relationships they

are currently engaged in and the context in which these are embedded. Vlaar et al (2006) actually note that power asymmetries are likely to affect the way in which the supply chain partners deal with these "problems of understanding" as it affects for instance who controls the agenda and the style and extent of communication. All of these aspects have already been identified as critical relationship mechanisms in the case of PepsiCo and the growers.

6.2.2 Sub-research question

Reviewing the findings from the previous cycle of inquiry has highlighted two critical points at this stage of the research. First, the challenge faced by PepsiCo and the growers is about finding common grounds on what constitutes the best way to address sustainability in the context of their commercial relationships. Second, individual stakeholders have a critical role to play in this process. This second cycle of inquiry has therefore been guided by the following question:

RQ6. In what ways can SC stakeholders build a shared vision of what sustainable SC relationships should look like?

6.3 Theoretical foundation: Individuals, sensemaking and sustainability

In this cycle, the primary focus was at the second-person level in the sense that it was about how "we", as a collaborative group of co-researchers, could articulate what a coordinated approach to sustainability would look like in the context of the relationships between PepsiCo and its suppliers. Sensemaking theory rapidly emerged as a relevant perspective that fit the line of inquiry and would enable shedding light on under-explored aspects of SSCM. In line with the abductive research process, the theoretical lens described in this chapter was not pre-

determined at the beginning of the research. The theoretical grounding of this cycle of inquiry therefore emerged inductively as the cycle progressed. Its suitability started to become clear when analysing the interview transcripts where the role of individuals emerged as a key dimension and the different understandings of sustainability were evident. Applying sensemaking theory to SSCM issues is a conscious creative effort to shed light on novel aspects of the phenomena (Kovács & Spens, 2005). Although the theoretical background did not precede this cycle of inquiry, it is presented early in this chapter in order for the reader to understand the concepts that will be referred to in subsequent parts. The theoretical background also served to support the choice of methods applied and clarify *a posteriori* the reporting and writing of this cycle of inquiry as will be explained in section 6.4.

The first part of this section reviews literature on the roles of individuals in SSCM. Then background to sensemaking theory is given and its core premises are discussed. This sections also reports on how the theory has been previously applied in research exploring organisational change and sustainability. Finally, the rationale for adopting a sensemaking approach in this cycle is described, showing how the theory has informed both process and content.

6.3.1 Individuals in SSCM

In order to understand how the change process of SSCM unfolds, the *relational* dimension of SSCM, as described in Chapter 3, must be taken into account as well as the role of the individuals who take part in these relationships.

Each SSC represents a network of diverse stakeholders with various interests and levels of power, who take part in developing, implementing and managing approaches to sustainability (Alvarez, Pilbeam, & Wilding, 2010; Park-Poaps &

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Each SSC represents a network of diverse stakeholders with various interests and levels of power, who take part in developing, implementing and managing approaches to sustainability (Alvarez, Pilbeam, & Wilding, 2010; Park-Poaps & Rees, 2010). The role of these SC stakeholders becomes particularly visible when considering intangible assets such as communication, trust, commitment and mutual learning, which emerge in SSC relationships and have been shown by a number of authors as contributing to increased SSC performance (Carter & Jennings, 2002; Mena et al., 2009; Alvarez, Pilbeam, & Wilding, 2010; Gold, Seuring, & Beske, 2010). Much effort in the literature has been paid to understanding how the governance and management of such relationships influences and enables SSCM, for instance when considering risk management (Foerstl et al., 2010) or the adoption of environmental technologies (Vachon, 2007). The micro dynamics of the change for sustainability in the SC remain largely unexplored and little research has considered the role of individual stakeholders taking part in SC relationships.

Papers mentioning 'SC actors' generally refer to the firm as an actor, rather than individuals within these firms. Carter and Easton (2011) suggest that there is an opportunity for future research to consider the individual as the unit of analysis, in particular to better understand drivers of managers' behaviours and decision-making

adoption of environmental practice. He shows that the potential of individuals in the purchasing function in sustainability is not fully maximised due a lack of integration of environmental issues in their reward and decision-making systems. It is fair to assume that the role of the purchasing function has evolved since and that procurement staff are given responsibilities in communicating and implementing operational policies and will act as boundary spanners (Meehan & Bryde, 2011; Preuss & Walker, 2011).

SC stakeholders will contribute to shaping the advancement of sustainability through their interactions. Definitions of sustainability in the SC will emerge as a result of the subjective construction between stakeholders of what impacts and issues are relevant and need to be addressed, and of the nature of sustainable value (Boons & Mendoza, 2010). .

Ryan et al. (2012) adopted an interaction and network perspective to understand how relationship building capabilities influenced corporate sustainability. They propose a multi-level framework to conceptualise change for sustainability. They emphasize the role of relational capability at the network, dyadic and organisational level as a critical dimension to enhance learning for sustainability. They discuss the role of the firm as powerful change agent and propose that companies should adopt a more holistic network perspective to change. While their research acknowledges the interactive nature of change for sustainability, they offer a perspective at the level of inter-organisational relationships and do not address the micro contributions of individuals in networks.

Understanding the way in which procurement managers, and individuals within organisations in general, shape the advancement of SSCM is complex. Some studies have drawn upon psychology theories to explore individual factors in SSCM

practice. They have identified the influence of individual mechanisms such as cognition, motivation, attitudes, affect and values, on the adoption and implementation of sustainability projects (Handfield et al., 1997; Min & Galle, 2001; Kogg, 2003; Park & Stoel, 2005; Preuss & Walker, 2011). These articles highlight the responsibility of individuals in diffusing principles of sustainable development, ensuring compliance, and simply acting on behalf of the organisation in driving the change for sustainability. Sarkis et al. (2011) highlighted the need to better understand and explain the complex social interaction between the various SC actors in the implementation of SSCM.

In Chapter 3 it was shown that the current theoretical lenses employed in SSCM research have resulted in a lack of research at the micro level and around the behavioural aspects of SSCM. The objectives of this cycle of inquiry are line with addressing these gaps. In attempting to explore the role of individuals and support them in the development of SC relationships for sustainability, sensemaking theory emerged as a relevant theoretical perspective.

6.3.2 Sensemaking theory: an overview

Sensemaking theory is traditionally associated with the work of Karl Weick (Weick, 1995, 2001; Weick, Sutcliffe, & Obstfeld, 2005), which was then further developed by a number of authors (e.g. Gioia & Chittipeddi, 1991; Allard-Poesi, 2005; Lüsher & Lewis, 2008). The core tenet of sensemaking is the social construction of meaning (Berger & Luckmann, 1966). Shared meanings about organisations are created, legitimated and sustained through the micro interactions and communications between individuals (Allard-Poesi, 2005; Weick, 2012). Adopting a sensemaking approach is recognising the pivotal role that individual

actors play in the shaping and enactment of organisational activities. Sensemaking provides a dynamic/process rather than static/content view of organisations (Maitlis, 2005; Basu & Palazzo, 2008).

Organisational members engage in sensemaking as a way to deal with uncertainty (i.e. about their role and the implications of certain situations on them) and ambiguity (i.e. confusion often created by a lack or overload of information) in the organisational environment. Actors will attempt to reduce the confusion by developing self-presentation and interpretation that can help them justify their actions in the face of ambiguous situations (Weick, Sutcliffe, & Obstfeld, 2005; Angus-Leppan, Benn, & Young, 2010). In this sense, sensemaking is a retrospective and inter-subjective process of giving meaning (Weick, 1995). Sensemaking is not a theory about the emergence of truth or about getting it right. Rather it is about the continued drafting of an emerging story that progressively becomes more comprehensive, plausible and resilient (Weick, Sutcliffe, & Obstfeld, 2005).

Sensemaking efforts engage multiple stakeholders with diverse interpretations in an interactive negotiation of meaning, which allows the translation of fuzzy issues into practice (Vlaar, Van den Bosch, & Volberda, 2006; Schultz & Wehmeier, 2010). Sensemaking is rooted in communication and action. Weick argues that "organisations are built, maintained, and activated through the medium of communication" (2001: 136). Given the idiosyncratic nature of interpretations, what organisational members come to share are not meanings but experiences, such as "activities, moments of conversations and joint tasks" (Weick, 1995). It is through communication (language, discussions, narratives, etc.) that interpretations are shared and confronted about the nature of organisational issues and how they should be addressed.

Authors have operationalised sensemaking in different ways around the premise that it was a primarily cognitive and conative process, i.e. related to what people know about an issue (or perceive they know) and how they behave in relation to this issue (e.g. Cramer, Van Der Heijden, & Jonker, 2006; Basu & Palazzo, 2008; Angus-Leppan, Benn, & Young, 2010; van der Heijden, Cramer, & Driessen, 2012). Little attention has been paid to the affective aspects of sensemaking (Bartunek et al., 1999). Actors not only share their intentions and thinking but also their feelings. Furthermore, emotions can trigger sensemaking and affect decisions made regarding ways to address certain issues. Considering the affective processes of sensemaking can enable understanding the role of personal values in organisations (Weick, Sutcliffe, & Obstfeld, 2005).

6.3.3 Sensemaking and organisational change

A number of studies consider sensemaking and organisational change (Maitlis, 2005; Lüsher & Lewis, 2008). Strategic change is an attempt to implement new modes of cognition and action to enable organisations to seize opportunities or deal with threats (Gioia & Chittipeddi, 1991). The successful implementation of change relies on an ability to "convey new visions and priorities" to organisational stakeholders and to get "buy-in" (Kotter, 1996; Fiss & Zajac, 2006: 1173).

Under changing conditions, sensemaking efforts take place between individuals who attempt to come up with interpretations that will help them deal with the situation and convert strategic expectations in actionable definitions (Weick, 1995; Dunford & Jones, 2000; Fiss & Zajac, 2006). The creation of shared (or equivalent) understandings that can support collective action is key but particularly

challenging considering the many organisational members engaged in the process (Maitlis, 2005; Weick, Sutcliffe, & Obstfeld, 2005)

Change and sensemaking are greatly political (Hope, 2010). Issues of leadership and power have been addressed in several studies in order to understand how influence was exerted and received among change participants. The work of Gioia and Chittipeddi (1991) has complemented sensemaking theory by describing the interplay between sensemaking and sensegiving in organisational change. Sensegiving describes the ways in which parties explicitly attempt to influence change according to their interpretations. Sensegiving is primarily perceivable through strategic decisions regarding actions to engage in, aimed at influencing others' meaning construction (Gioia & Chittipeddi, 1991; Hope, 2010).

It is not possible to separate sensegiving from sensemaking when studying change. While change initiators or leaders may attempt to frame and legitimate the process in a certain way (e.g. adoption of new language, types of events), change recipients will develop their own interpretations (Dunford & Jones, 2000; Hope, 2010). Hence, change outcomes are affected by how people make sense of change initiatives. This view resonates with Pfeffer's idea that "what we do comes from what and how we think" (2005: 128).

Research on sensegiving and sensemaking in strategic change has primarily looked into the role of a minority of managers (senior or middle management) and leaders, often considered as change agents (Bartunek et al., 1999; Fiss & Zajac, 2006; Hope, 2010). Several authors have highlighted opportunities to research the role of other stakeholders in order to develop a fuller understanding of the negotiation process at play in changing organisations (Bartunek et al., 1999; Dunford & Jones, 2000; Maitlis, 2005).

6.3.4 Making sense of corporate sustainability

Considering the contested nature and emergent change orientation of corporate sustainability, it is surprising that a relatively small number of studies have adopted sensemaking theory (Klostermann & Cramer, 2007; van der Heijden, Cramer, & Driessen, 2012). Many studies have focussed on the content of corporate sustainability initiatives rather than adopting a more processual view of the phenomenon (Basu & Palazzo, 2008). Viewing the implementation of sustainability as a "process of change that takes place via a process of sensemaking" (Cramer, Van Der Heijden, & Jonker, 2006) allows exploring the mechanisms at play in the translation of such a multi-faceted concept into practice (Angus-Leppan, Benn, & Young, 2010; Schultz & Wehmeier, 2010).

The concept of sustainability is ambiguous and attempting to embed it within corporate practices creates uncertainty for the diverse stakeholders involved in and affected by such change. Corporate sustainability is ambiguous and this is largely due the fact that it has been developed and evolved in a context dominated by an economistic view of the firm (Angus-Leppan, Benn, & Young, 2010). Ambiguities arise when attempting to understand how the economic, human and ecological dimensions inter-relate and the relative importance of these elements. The main challenge in implementing sustainability is translating the concept into tangible actions and embedding within and between organisations (van der Heijden, Cramer, & Driessen, 2012). This requires engaging people in sustainability efforts so that meanings are discussed and that a common understanding of the nature of the challenges ahead emerges (Basu & Palazzo, 2008).

Diverse stakeholders hold different perceptions, definitions and expectations of the dimensions of sustainability and connections between them (Angus-Leppan,

Benn, & Young, 2010). Hence a number of authors have specifically focussed on the role of leaders and change agents in facilitating CSR sensemaking (Angus-Leppan, Metcalf, & Benn, 2009; van der Heijden, Cramer, & Driessen, 2012). The embedding of corporate sustainability is difficult and hardly predictable. Leaders and change agents are confronted with the emergent nature of change for sustainability, which requires the ability to translate long-term goals into rather small steps. New thinking about leadership may be required to resolve the intrinsic confusion that exists between explicit (strategic corporate level) and implicit (personal values level) CSR/Sustainability. These articles provide insights into the role of individuals in driving sustainability but once again little research has considered the perspectives of the multiple stakeholders involved in the change for sustainability. I will show that this is particularly relevant to understanding the implementation of SSCM.

6.3.5 Relevance of sensemaking in sustainable SCs

The implementation of sustainability in the SC poses particular challenges compared the context of a single organisation. The development of a common understanding and the role of organisational culture and personal values have been acknowledged as key aspects of sensemaking. When considering the SC, sensemaking happens in the relationship between organisations as well as within the organisations themselves and therefore involves a large group of stakeholders. The relationships between these stakeholders provides a platform for collaborative sensemaking where problems of understanding can be addressed (Vlaar, Van den Bosch, & Volberda, 2006)

There have been calls for researching sensemaking occurring among diverse stakeholders, who hold different frames of reference and may play different roles in

the process (Maitlis, 2005), such as for instance in global SCs. The relevance of researching sensemaking for sustainability at the SC level has been highlighted recently (Ryan, Mitchell, & Daskou, 2012; van der Heijden, Cramer, & Driessen, 2012). Given the complexity of sustainability challenges, 'individual isolated organisational efforts are insufficient' (Ryan, Mitchell, & Daskou, 2012: 579) and it is necessary to understand how change can be driven through inter-organisational relationships. Clearly, implementing sustainability initiatives in the context of SC relationships creates both uncertainty and ambiguity for the parties involved in these relationships, which have been identified as key triggers of sensemaking.

Sensemaking is relevant in this research because the ambiguities that arise from attempting to translate sustainability into practice are exemplified in the context of this study. When considering PepsiCo's approach to sustainability with their suppliers, primarily revolving around the development and implementation of new tools, it is possible to understand how the suppliers, who have been supplying the company for generations using more or less the same practices, may feel insecure and confused about how these initiatives will affect them and also simply about what the purpose of these new practices. The uncertainty and ambiguity transpire through the questions that are asked by the suppliers, e.g. how does measuring carbon help advancing sustainability? How much will I have to invest to meet the new requirements? What will be the impact of this on my contractual arrangements? In other words, the desire to integrate sustainability within the SC relationships has disturbed the usual flow of actions, and therefore triggered sensemaking.

In light of the theoretical background, it is argued that the emergence of SSCs can be viewed as a result of the sensemaking efforts of SC members, who give meaning and interpret what the SSC is, how it should work and be organised, and for

what purpose it is to be enacted. Overall, this cycle seeks to understand how SC stakeholders co-create the change for sustainability by engaging in sensemaking. I am not aware of any studies specifically adopting a sensemaking approach to understand how stakeholders contribute to the co-production of SSCM as a new SC paradigm. In light of the theoretical background on sensemaking, two additional sub-research questions emerged:

RQ6a. How do SC stakeholders make sense of the change needed for sustainability?

RQ6b. How do stakeholders' meanings and sensemaking processes affect the development and implementation of sustainability practices in the SC?

6.4 Application of methods: Participative workshops

As mentioned in Chapter 4, a series of iterative workshops has been organised with the research participants. These workshops constituted the main method in this cycle of inquiry. In this section, a supporting argument for the use of workshops as part of inter-organisational sustainability sensemaking is presented. Details about the organisation and running of these workshops are given as well as a description how the information collected was subsequently analysed and communicated to the research participants.

6.4.1 Participative approach to sustainability sensemaking

One of the core challenges in AR is to develop 'research designs and processes to avoid communicative domination but foster dialogue, confrontation and debates' (Allard-Poesi, 2005: 188). Although there exists a wide array of participatory methods that are used by action researchers, methodological details are

widely absent of published AR studies. Here I follow Bartunek's view (1993: 1223) that it is 'important that attempts be made to describe with some precision the collaborative practices involved in interventions'. The cycle of inquiry described in Chapter 5 was more about capturing information from the research participants while this cycle focuses on exploring the information collected for the purpose of changing current practices.

Participative approaches provide a way to overcome the paradox involved in much of traditional sensemaking research, namely: 'seeking an objective science of subjectivity' (Allard-Poesi, 2005). While much research on sensemaking consists of researchers observing and attempting to capture processes of sensemaking from an external perspective, several authors have advocated a co-researching approach to sensemaking (Allard-Poesi, 2005; Uhl-Bien, 2006; Lüsher & Lewis, 2008). Participative methods are therefore useful for developing both academic and practical knowledge by bringing people together to explore issues and meanings and work towards mutually agreed solutions or ways forward (Koplin, Seuring, & Mesterharm, 2007; Reason & Bradbury, 2008).

Participative methods support sensemaking research by promoting a more relational orientation (Bradbury & Lichtenstein, 2000; Cramer, Van Der Heijden, & Jonker, 2006). Hence research on sensemaking for sustainability can benefit from a participative approach, which allows researchers to 'uncover the invisible assumptions that generate social structures' (Bradbury & Lichtenstein, 2000: 557) and support the transformation processes for sustainability within a company or in the case of this research, between companies in the supply chain (Cramer, Van Der Heijden, & Jonker, 2006). Cheung et al. (2011) argue that joint sensemaking in supply chain relationships can be viewed as a type of relational learning that supports

relationship performance. They also showed that engaging in joint sensemaking activities enhance the relationship value for suppliers, even though buyers tend to view it as an additional cost.

In this research, relationships for sustainability become both an 'outcome' of investigation and a context for action (Uhl-Bien, 2006) and the adoption of a participative approach allows developing a processual understanding of SSCM. Content and process of the research become interwoven. This cycle aimed at not only capturing the research participants' perspective but also at stimulating sensemaking and change around the question of relationships for sustainability. An additional sub-research questions has therefore been explored in this cycle:

> *RQ6c. How might the participative workshops support sensemaking for sustainability and provide the means to build the momentum for change between the SC actors?*

6.4.2 Design and running of workshops

In this section, the collaborative process, in the form of participative workshops, is described. It became the means of making sense of what relationships for sustainability between PepsiCo and the growers would imply. In this thesis, I report on the series of three iterative workshops organised in a dialogical fashion. It must be noted that although these workshops have led to identifying key areas for action, the process continues beyond the scope of this PhD project and additional workshops with PepsiCo and the growers are being planned.

6.4.2.1 Workshops aims and flow

The workshops have been organised iteratively to facilitate the co-exploration of ways to improve the working relationships between PepsiCo and the growers on sustainability. The workshops aim at creating a new form of engagement as they represent new spaces of dialogue, which are open and different from other meetings between PepsiCo and the growers. I have drawn partly on the model of search conferences and on some principles of appreciative inquiry, as detailed in Table 41 below, to design these workshops.

Table 41. Inspiration for workshop design (adapted from Austin & Bartunek, 2006)

Approach	Key aspects
Search conference	Participative method where participants articulate a desired future and develop a strategic plan to try and accomplish it.
Appreciative inquiry	Identify and focus on positive elements in the system to stimulate change.

Key aims of the workshops have been to:

- Open a dialogue space around sustainability between the growers and PepsiCo
- Bring participants together for joint working
- Gather the different perspectives on sustainability and explore synergies
- Develop the understanding of drivers, barriers and other issues regarding current sustainability initiatives
- Explore thoughts, feelings around sustainability and increase engagement

Each workshop has been designed around three core activities: research feedback, discussion and reflective time, and analytical work for change. These activities did not necessarily take place in this order during the workshops, and for

instance phases of reflection and discussion were included throughout the sessions. For each workshop, I attempted to visually represent the flow of the day. The visuals can be found in Appendix 6. The insights from the previous cycle of inquiry were critical in determining not only the content but also the way in which the workshops would be organised. Taking into account the existing power dynamics and the sensitivity of the topic, I proposed to organise the workshop in a dialogical fashion, i.e. alternating a growers' workshop and a PepsiCo workshop, with the aim of being able to hold a workshop with both sides together at some point in the medium term. Details of the specific purpose and content of each workshop are presented in Table 42 below. Further details about the facilitation of the workshops and the specific activities that were run are presented in Appendix 5.

Table 42. Purposes and contents of workshops

	Group	Purpose	Content
WORKSHOP I	Growers	Explore the growers' perspective on sustainability and help identify what they view as barriers and enablers of a relationship for sustainability. Help articulate what their contribution to the sustainability agenda can be.	<u>Research feedback</u> Presentation of findings from the interviews around 4 key themes, using quotes.
			<u>Reflection and discussion</u> Reflections on the interviews and implications for relationship with PepsiCo Creative individual reflective time to represent their ideal sustainable business.
			<u>Analytical work on change</u> Identify the barriers and enablers to building a relationship for sustainability with PepsiCo.
WORKSHOP II	PepsiCo	Feedback the initial interviews findings as well as what had emerged from the previous workshop with growers. The first part of the workshop was dedicated to the research presentation and first reactions. The second part of the workshop focussed on more specific and practical outputs, which could be used as a basis for change and for further work with growers during the next workshop.	<u>Research feedback</u> Presentation of findings from the interviews around 4 key themes, using quotes. The growers' reactions to the findings expressed during the first workshop were also presented.
			<u>Reflection and discussion</u> Reflect on the growers' reactions and try to understand their roots. Discuss the enablers and barriers identified by the growers and identify what the participants viewed as the most important ones (either from the list or new ones)
			<u>Analytical work on change</u> Thinking about how to address – or make the most of – the barriers and enablers highlighted previously led to building a list of potential actions/activities that could be put in place. Build a list of questions about what they'd like to ask the growers to move the relationship forward.

WORKSHOP III	Growers	This workshop was organised only a few days following the PepsiCo workshop. The main objectives of the workshop were to: 1. Assess the situation/perspectives of growers 1 year on 2. Feedback the outputs of the PepsiCo workshop	<u>Research feedback</u> Presentation of PepsiCo's reactions to their reflections and from the outputs from Workshop I. Presentation of outputs from Workshop II.
			<u>Reflection and discussion</u> The session started with an activity to reflect on the year that had passed since the last workshop. Participants were asked to each tell one positive and one negative story, event, feeling or anecdote that had happened over the last year. They were also prompted to reflect on these with regards to their relationship with PepsiCo. Discussion time on the outcomes from Workshop II.
			<u>Analytical work on change</u> The second part of the workshop was dedicated to more constructive activities, which specifically answered the questions and suggestions made by the PepsiCo team during their workshop. Participants worked in groups, focussing first on answering PepsiCo's questions and then on discussing what they viewed as the priority actions to implement.

6.4.2.2 Workshop participants

As mentioned above, the three workshops gathered a number of selected participants. The primary aim was to have the same participants taking part throughout the rounds of workshops in order to ensure the continuity of the dialogue. The growers' workshops brought together key potato suppliers as one of the key stakeholder groups in PepsiCo's SCs. The rationale for running the growers' workshops with potato growers only is that they had been more engaged on sustainability projects than growers from other SCs, the reason being that Walkers Crisps is PepsiCo's best selling brand in the UK. From PepsiCo's side, the aim was to gather the people who have the most contact with growers and are involved in developing and implementing sustainability projects. The number of participants in each workshop was intentionally kept low to ensure greater participation and discussion. Table 43 below summarises details from each workshop, including the number and positions of participants.

Table 43. Workshops details

	Date	Duration	Number of participants	Details about participants
WORKSHOP I Growers	15/05/2012	1 day	5	A1 Owner A2 Director A3 Owner A4 Owner A5 Owner and group founder
WORKSHOP II PepsiCo	30/05/2013	½ day	4	Agricultural raw materials buyer Europe agricultural sustainability manager Agricultural procurement director European sustainability analyst
WORKSHOP III Growers	5/06/2013	½ day	5	A1 Commercial director A2 Director A3 Owner A4 Owner A5 Owner and group founder

6.4.3 Analysis

6.4.3.1 Reporting and analytical framework

As described in Chapter 4, the analysis process in AR is continuous. Efforts have been made to record the information collected thoroughly. With prior consent gained from the participants, all the workshops were digitally recorded and transcribed in order to facilitate the analysis. During meetings and informal conversations, notes were taken and then typed. In this cycle the lines between analysis at second and third person levels become almost blurred. Immediately after each workshop, the transcripts were coded and analysed in order to write and circulate reports to the workshop participants. The purpose of these reports was threefold. First, it helped identify the key emerging themes and issues very shortly after the actual intervention. Second, they ensured the transparency of the process and supported reflection and feedback of the research participants. Last, the reports are tangible outputs that both PepsiCo and the growers can keep for their own records.

Keeping in mind the sub-research questions of this cycle and drawing on the theoretical background presented previously, a tentative analytical framework was developed inductively to guide the reporting process and strengthen the theoretical contribution of this work. In order to build a consistent and clear framework to report on the complex process I have been engaged in, inspiration was drawn from the work of van der Heijden et al. (2012), of Lüsher and Lewis (2008) and from broader contributions on sensemaking (Bartunek et al., 1999; Weick, Sutcliffe, & Obstfeld, 2005). The table below details how the analytical framework includes both three key sensemaking elements, i.e. communication, action and emotion (Bartunek et al., 1999; Weick, Sutcliffe, & Obstfeld, 2005; van der Heijden, Cramer, & Driessen,

2012), and the actual process of supporting sustainability sensemaking between the SC actors (Lüsher & Lewis, 2008).

Table 44. Analytical framework for inter-organisational sensemaking for sustainability

Aspects of sensemaking			Co-exploration process
Communication	Action	Emotion	Developing SC relationships for sustainability
Meanings and interpretations of sustainability Stories told in relation to sustainability Language and jargon used and developed around sustainability	Attitudes and behaviour towards sustainability Types of actions for sustainability at inter-organisational level Expectations and perceived influence on the sustainability agenda	Feelings about sustainability in general Affective aspects of evolution of SC relationships for sustainability Affective aspects of evolution of role/position for sustainability	Description of how the workshop process supported sensemaking in the context of developing inter-organisational relationships for sustainability.

6.4.3.2 Analytical puzzle: putting the pieces together

The analysis in this cycle is like a puzzle composed of various inter-connected pieces. The first piece was key to the preparation of the workshops and implied going back to the interviews and identifying individual meanings of sustainability articulated by the various stakeholders. To enable comparisons between the interpretations of sustainability in the SC, findings were grouped according to the three main stakeholder groups (PepsiCo, Suppliers and External). Content analysis was conducted to reveal terms appearing more frequently in definitions. The findings served to create word clouds, which were used in the participative workshops to foster discussion around meanings of sustainability. The word clouds can be found in Appendix 7. The second piece of the analysis puzzle looks at processes of sustainability sensemaking by considering communication

(meanings, language, stories), action (attitudes and behaviour, implications and imperatives for actions, expectations, inter-organisational relationship development), and emotions (feelings about sustainability, about position, about the nature and evolution of relationship). During the first round of coding of the workshop transcripts that served to produce the reports, the focus was put on identifying the key discussion themes and offer reflections on how the sessions unfolded. By linking the findings of the first and second piece it became possible to show how stakeholders' meanings and interaction have impacted on SSCM in terms of content (issues addressed, nature of sustainability projects) and process (how it is implemented, power dynamics and level of engagement). Another important piece is the collaborative analysis that occurred during the workshops themselves regarding ways in which to progress the relationship forward and resulting from the co-exploration of the issues by the research participants.

In the remainder of this chapter, I try to do justice to this intricate analytical puzzle, where process and content of sensemaking are intertwined. The next section presents meanings of sustainability from the different stakeholders' perspective, and therefore delve deeper into the communication aspects of sensemaking. The following section will focus on the actual development of sustainable SC relationships through the workshops, with an emphasis on both communication and action. The next findings section reports on the emotional aspects of sustainability sensemaking in this research. Finally some reflections from across the workshops are presented, which enable answering the sub-research questions RQ6, RQ6a, RQ6b and RQ6c.

6.5 Meanings of sustainability

In this section, the focus is on trying to grasp the various stakeholders' perspectives that were initially expressed during the interviews regarding sustainability and describe how the growers and PepsiCo subsequently reacted and interpreted those meanings during the workshops.

6.5.1 One challenge, multiple views?

6.5.1.1 Findings from the interviews

Findings from the semi-structured interviews reveal that the various SC stakeholders' interpretations of sustainability may be more similar than they seem to believe. The interviews captured not only what sustainability meant to each of them but also reflections about how they perceived others' conception of sustainability. When comparing the various stakeholders' definitions of sustainability, it is possible to notice that they shared some aspects, which are presented in Table 45 below. In order to identify the main themes, definitions of sustainability were extracted from the interview transcripts and coded. In the table, N stands for the number of appearances of a given aspect or theme across all interview (NB. 43 interviews in total).

A second method consisted in combining the key words (noun, verbs and adjectives) from the definitions across stakeholder groups to identify what terms have been predominantly used. Interestingly, the most frequent terms associated with sustainability by stakeholders are "way", "thing", "think" and "make". The terms "better" and "right" also featured in the list in the second most frequent category. The vagueness and generic nature of these terms shows that sustainability is not interpreted in a precise manner but nonetheless represents an imperative.

Table 45. Common aspects of stakeholders' meanings of sustainability

Aspects of sustainability definitions	Description	Illustrative quotes	N	%
Environmental and economic resources	The importance of protecting the natural environmental while ensuring business longevity and profitability	"It is about making better use of our resources" "It is all around how I grow my crops in the most holistic way."	43	100%
Future generations	Sustainability is associated to a sense of responsibility for the next generations, and in particular a strong desire that children and grandchildren will be able to enjoy the same (or even better) things as we do.	"Our responsibilities towards the way we operate in the world, respecting future generations and trying to make sure we don't consume things that are not ours"	38	88%
Inescapable future	Sustainability is an imperative and must addressed, both because it has become widespread on customers and governments' agendas and because we have reached an ecological turning point.	"(…) Part of the global way that things are changing" "To put it bluntly, we have only one planet and we have to take action to preserve it" "But logic tells me that if you do not have backup for it there will be a time when it comes to an end."	30	70%
Time balance	Addressing sustainability requires aligning the agendas, and primarily reconciling the short-term profit maximizing and commercial philosophy with long-term goals of preserving the natural environment.	"It is about balancing the short-term and the long term"	27	63%

Looking more specifically at the 3 stakeholder groups nonetheless shows some differences in interpretations of sustainability as shown in Table 46.

Table 46. Differences in stakeholders' meanings of sustainability

	Meanings of sustainability	Illustrative quotes
PepsiCo	Business case for sustainability Concept related to new conception of business around environmental and social responsibilities, and innovation Normative dimension of sustainability definitions	" It is the right thing to do" "The issue… and I think everyone would agree in the world it's the right thing to do… The issue becomes about money. All it comes down to is money and the commercials."
Suppliers	Sustainability as integral to farming. Concept associated primarily with natural resources exploitation and farming. Limited reference to social aspects of sustainability as defined by PepsiCo (e.g. health and safety, treatment of workers) but reference to community Strong interconnection between environmental and economic sustainability.	"Sustainability is the nature of my business" "That is particularly environmental, the land and the farm that we are using" "When we come to sustainability we say it's tomorrow's food. We know that we're going to be under immense pressure over the next 20 years to not just compete but deliver food that people can afford and is high quality. Sustainability to us is actually protecting our asset, our farmland."
External	Diverse group (consultants, NGOs, researchers) but sustainability intrinsically attached to purpose and nature of their role Reference to accepted frameworks (e.g. 3BL, Brundtland definition) Deep personal dimension revealing commitment to their role	"You know it's always nice to think that what you do could be making a difference." "I think it ties in all the sort of things of the economic, it's the social side, it's the environmental"

6.5.1.2 Researcher's meaning

As an action researcher, I recognise that my own views and understanding of sustainability have certainly impacted on the research and on the direction it has taken. I have had opportunities to reflect on what sustainability actually meant to me throughout the research. Although my perspective has not been captured as such in the interviews, I do fit within the category of "external stakeholders" and my conception of sustainability very much resonates with aspects included in this category. The diary extract below illustrates my perspective on sustainability.

Diary - 21 November 2011

I was sitting on the train this morning on my way to a meeting with Helen in Cardiff. I like the train journeys to Cardiff because it gives me plenty of time to reflect and think about my ideas. I also have this tendency to write things in my head, without sometimes daring to then actually put them on paper. That happens quite often and I wonder if it is just the fear of not being able to reformulate my thoughts properly and be able to transmit them in the best way possible. Anyway, back to the train journey, I was sitting next to this woman who was reading the newspaper. At the beginning I don't think she was actually reading it but turning pages in search of the piece or article that she wanted to read. When she finally stopped turning the pages and I felt that she was concentrating on something, I turned my head slightly out of curiosity to see what it was that she had aimed to find. And there it was: her horoscope.

I think it's because it's been a long time since I have travelled in early morning transports, when they are full of people going to work. I had forgotten that many of these people actually read their horoscope in the morning before starting their day. I have to admit I even was one of them when I used to take the tube every morning to go to university in France. We would even read it together with my friends and make fun of what was presented as our expected day.

I don't know why this simple gesture, so common to a lot of people, appears more significant this morning while I am thinking about my research. I guess it seems to resonate quite well with the question of predictability and reassurance associated to sustainability in my research. It is interesting how people always tend to look for things that may bring a bit more certitude in their own life and over things that they have no control over.

In the case of the horoscope, it is reassurance over the happenings of a day and the uncertainties of daily life. In the case of my research, it is more widely linked to the notion of risk aversion, and specifically regarding the risks presented by issues of sustainability and climate change and how to deal with them. Change and uncertainty are not popular amongst us humans and I would say it is not surprising then that many of us find comfort in spiritual texts and practice, may it be religion or more casually the daily read of the horoscope. Somehow we are unconsciously hoping to increase control over our destiny and over the future.

I am not actually pointing my finger at anyone here and trying to distinguish right from wrong. I think it is merely a penchant of our species to try and predict and exercise control. We have been doing it for centuries and certainly one of the main reflections of this is how we have exerted control over our own environment and nature. One could argue that the fact that society has become so advanced is a result of our quest for knowledge. I would argue that knowledge and control or power, are intertwined notions. Which one drives the other is a complex matter.

The linkage however is quite clear and as much as a high level of power might allow access to more knowledge, developing knowledge is a way to better control and to exert power. Understanding our environment better has been the way in which we have managed to mitigate the risk emanating from it and reduce the uncertainties. While there was a time when entire families and villages would perish in earthquakes, which were often associated to godly interventions or punishments, we are now able to measure and even signal the arrival of an earthquake as we have developed our understanding about the Earth tectonic dynamics. This is one example amongst many but it serves to illustrate how control and knowledge are related.

These developments have certainly served the 'interest' of the human species if I may express myself in these words. What I mean by our 'interest' is that we have managed to dominate much of the natural system and in that sense preserve our own species, most of the time to the detriment of others. If you look at recent news, we have never been so many on the planet and never had so much food. More and more people would be expected to live above 100 years old and the quest for more medical solutions to ageing carries on.

I wouldn't say that all of these developments aren't incredible because they surely are. It is quite impressive what one species on Earth has achieved in so little time (considering the whole life of our planet and the universe). But I would admit that it is quite scary, this eternal quest for increased control. Even more so when I am now actively engaged in research that looks how we can become more sustainable. It is interesting to see that in this area of research there is a lot that is done looking at how we could possibly control the risks that we have ourselves created, like climate change or the depletion of forests. Very interesting indeed that very few question our behaviour and relationship to the world. We have come to forget that we are only one little part of a whole ecosystem and that after all, we are only a minuscule and insignificant element in the universe. We have been so obsessed at trying to improve our own condition that we have ended up in actually quite a threatening position. We seem to have lost respect for the planet that accommodates and feeds us and for the environment where we extract our power. And in that way, we have put ourselves and other species and organisms in danger of extinction...

The more I think about it, the more I realise that we need to think outside the box and question our own practices. We seem to be limited by our own thinking and not be able to even dare think how things could be different. I am just worried that this is an eternal cycle and that we are doomed to repeat the same mistakes whatever path we take. And me like any other in this case. As much as I would like to see deep behavioural change happen and go beyond my own assumptions and my own habits of control and accumulation, I am just human. It is sometimes difficult to accept things that affect us closely, like the potential loss of a cherished relative because of a cancer or other terrible illnesses. But it seems inevitable to reconcile ourselves with the idea of finitude. We cannot keep on pushing the limit further and further simply to avoid facing the truth. Everything comes to life and dies eventually. And we are one of those

things. We should not overestimate our importance on this Earth because we are not essential.

Coming back to where I started, I think this is part of reflecting on my own approach to life. I am on a journey myself, trying to understand what I want to achieve in my short life to try and ensure that other lives after mine get also a chance at experiencing the beauties of the world around us. I am like everyone scared of change, risk averse and prone to control-freakism… But one thing that I have noticed is that I haven't read my horoscope in years!

6.5.2 Reactions to meanings

Whilst the findings have revealed some similarities between the different SC stakeholders' interpretations of sustainability, the major source of contention lies in the way they perceive each other's interpretations and levels of understanding of sustainability. As mentioned earlier, the findings about meanings of sustainability were presented during the workshops in the form of word clouds and using quotes from the interviews.

It is particularly interesting to examine the reaction of the growers to sustainability as PepsiCo presents it to them. While some of them are actually quite enthusiastic at the move towards more sustainable practices, they still tend to question the actual 'motivations' behind this relatively new focus on sustainability, in particular with references to sustainability as a means to achieve greater performance on stock markets / improved reputation. Many of the suppliers expressed their doubts about the honesty of PepsiCo's views and commitments. Some referred to their interpretation and engagement as a "commercial bandwagon". This seems to link with the growers' account of the discrepancies or what seem to be conflicting commercial and sustainability practices (e.g. harsh negotiations for short-term contracts at low prices vs. sustainability requiring long-term investment in better quality infrastructure). The suppliers as a group seem to have a rather monolithic

perception of PepsiCo's sustainability perspective, without evoking how individual' views within the company may vary. In contrast, from the PepsiCo's stakeholders' perspective, the suppliers' understanding of sustainability is rather limited and disparate. One stakeholder said "they are those who get it and those who don't get it". Both sides hold rather strong impressions about each other's lack of understanding of what sustainability "truly" means.

The reactions from both sides, as captured in the workshops, are summarised in Table 47 below.

Table 47. Reactions to meanings

	Reactions	Illustrative quotes
Growers	Noticed the differences: Business and Right as major words for PepsiCo, Resources and Use as key words for growers Showing polarisation of views but also commonalities Some find the question of meanings of sustainability unimportant and would rather discuss actions One grower pointed out that the word "relationship" is not present in the word clouds although working together is how sustainability is implemented	"Should we get passed the meanings?" "It's surprised me how undefined sustainability is and I think that's a big big problem"
PepsiCo	Growers are talking resources and farming and PepsiCo is talking business Important to highlight the commonalities between the two sides and positive impression that growers have some understanding of sustainability Surprise that money does not appear in the growers' word cloud because much of the growers' relationship to sustainability and preserving the land is money driven.	"That is their life, that's what their money is tied up in, land and farming. So for them to be talking about resources and farming, that is talking business, it's the same word for me." "I'm happy to see that the sustainability message seems to have got through because a lot of the word cloud stuff was very similar if you read the big words."

There is an apparent lack of open discussion about meanings of sustainability, which prevents the development of a shared understanding and results in sustainability projects being developed and implemented rather unilaterally and without buy-in from the growers.

6.5.3 Reflecting on participants' meanings

There are two interesting points to note regarding the different understandings of sustainability that have been presented in this section. The first point relates to the issues of talking about sustainability in the context of commercial relationships and of business in general. Some tensions start to appear regarding values that are brought in conversations in relation to sustainability, and this seems to relate to the definition of sustainability as embraced by most businesses (i.e. the triple bottom line and 'performance with purpose' in the words of PepsiCo). On the one hand, there are clear references of the actual 'necessity' to become more sustainable because it matters for next generations. This implies preserving nature and resources and it would allow continuing the farming traditions that have been passed down generations. On the other hand, sustainability is also defined as the ability to maintain and even improve business performance and therefore what is relevant for sustainability are behaviours that primarily make business sense (e.g. cost saving) and then might decrease the impact on the environment. The intrinsic complexity and ambiguity posed by sustainability is therefore apparent: the definitions and aims are diverse, i.e. no consensus, and it seems to appeal to values that would be dissimilar or even incompatible (e.g. self-transcendence vs. self-enhancement). The expression "as long as it makes business sense" can be found in many interviews and is a reflection of how sustainability has been conceptualised so far and shows the primary importance of the economic dimension. There are definitely implications on the nature of the actions taken to achieve sustainability, and possibly on what is viewed as acceptable.

The second point is closely related to the first one and is about the use of values in the sustainability rhetoric between PepsiCo and the growers. Understanding

how values play out in the use of language around sustainability may provide a way to understand the link between power and change for sustainability. Power can be reflected in the use of language (managing meaning) on sustainability, and in parallel how through language one can appeal to values to drive change towards sustainability. This is clearly related to the concept of sensegiving. PepsiCo currently drives the sustainability agenda and interestingly the lines between corporate values and personal values seem blurred what has been captured through the interviews. PepsiCo's stakeholders' views of sustainable change revolve around values of innovation, business excellence and novelty. This clearly impacts on the type of sustainability projects that are put forward and implemented. The values found in the growers' perspectives on sustainability are those of conservation, farming tradition and heritage. While both aspects are relevant to sustainability and there is no right or wrong, there is a clear need to explore commonalities and find a way to appeal to the whole spectrum of values.

6.6 Constructing sustainable SC relationships

While the previous section has primarily focussed on the communication aspect of sensemaking by looking in details into the meanings that the different research participants attach to sustainability, this section considers the dynamic process of making sense of sustainable SC relationships through both action and communication. The section follows the flow of the workshops around three main phases of constructing sustainable SC relationships. These phases include reflecting on the SC relationships as they currently stand, expressing desires and wishes about the future and what it could become, and finally drawing up a potential action plan to make it happen.

6.6.1 Where we are: A confused relationship

The interviews and a substantial part of the workshops were spent discussing the relationships as they are currently and how they have recently evolved to encompass sustainability.

6.6.1.1 Forms of communication and action

A sense of tension and conflict emanates from the content, form and spaces of communication about sustainability between SC stakeholders. A key theme in suppliers' interviews was the actual lack of proper communication around sustainability and reference to the "dictatorial" way in which the change was taking place. Evidence of this one-way communication is found in the language used at meetings between the growers and PepsiCo. For examples, through expressions such as "push" for sustainability" and "the need for shared responsibility". During one of these meetings, a supplier commented about the term sustainability itself, which appeared like "something we are forced to use because it's fashionable". An interesting point is the very labelling of these meetings where sustainability is discussed. Some of them are called "growers meeting" and others "forums". However, the input from the suppliers has tended to be minimal (presentations from PepsiCo). Overall, there seem to exist a dominant voice in the language that has been used to implement sustainability initiatives between the SC stakeholders.

Communication and interaction about sustainability remains very formal (meetings, contract clauses) and sporadic. It appears as an added dimension to the relationship. "Normal" conversations (on the phone or face-to-face) are not framed within the sustainability discourse. They remained focussed on what are perceived as the usual relationship aspects such as prices, evolution of crops, quality, etc. Contract

negotiations are critical moments of the relationships and from the evidence gathered, it appears that although the "new" contract includes appendices on sustainability requirements, these are not discussed during the negotiations. Looking at the different sustainability activities and contract clauses, it appears that the terms "measurement" and "carbon", have dominated the sustainability language. Several suppliers noted their difficulty to understand the notion of carbon measurement and relate it to sustainability. Consultants seem to act as communication facilitators between PepsiCo and the suppliers because they help explain the technical terms. The development of a sustainability jargon is linked to the work of PepsiCo and consultants in that domain. Growers tend to discard the term "sustainability" itself and refer to elements individually (" do what makes business sense", the "natural capital").

Stakeholders within PepsiCo's agriculture team told us what they considered success stories with the suppliers and interesting anecdotes about unexpected suppliers' initiatives regarding sustainability. The stories and anecdotes shared by the suppliers present a rather negative picture of how sustainability has been addressed. Their anecdotes tend to focus on the difficult aspects and moments of misunderstanding and miscommunication. Another interesting aspect of suppliers' stories was the emphasis on farming values to describe the strong connection between the nature of their activities and the natural environment (e.g. "farmers are the custodians of the countryside"). Some talked about the "strong moral code in the British countryside" in relation to the more social dimension of sustainability. The different stories reveal that sustainability represents a tense issue.

The resistance exhibited by the suppliers and the rather assertive attitude of PepsiCo stakeholders seems anchored in the way their relationships have evolved in

the last decade. Suppliers are required to provide large amounts of data that can contribute to establish a benchmark for sustainability projects. PepsiCo stakeholders talked about the difficulty to obtain the data and ensure it was accurate. They explained the problem as partly related to the growers' lack of knowledge about the tools used to build sustainability measurements and partly to their reluctance to engage. Despite an expressed willingness to reduce "farmer bothering", the ability to discuss sustainability openly and reached a common ground for successful actions is compromised by the negative assumptions held by the growers. Yet, through the interviews and the workshops, all stakeholders said they had high expectations from their relationship to advance the sustainability agenda and hoped they will be able to work through their divergence. The suppliers are most worried about the implications of PepsiCo's sustainability agenda on the continuity of their relationship: "Are we wanted or are we not wanted?"

6.6.1.3 Making sense of the relationship across workshops

The workshops have created a new form of communication and interaction around sustainability between PepsiCo and the growers, where participants can freely and openly discuss issues regarding the relationship with the other group, outside the usual context of formal meetings often orchestrated by PepsiCo.

After each workshop, reflections about what had been discussed and how the workshop went were written. When writing the reports, it was possible to reflect more deeply about the content and process and the core topics of each workshop.

It is possible to summarise the way in which the participants make sense of their current relationships around five core concerns that permeate throughout. These concerns and the underlying issues they relate to are presented in Table 48.

Table 48. Issues of the current relationships for sustainability

Core concerns expressed	Stakeholders' perspectives	Underlying issues	Illustrative quotes
Lack of dialogue, trust & communication	Perception of deterioration of relationship from growers' point of view, no feeling of mutuality and impression that relationships are taken for granted Confusion from PepsiCo stakeholders as they feel that there is a lot of communication and that the relationships would not have lasted if there was no trust	Growers' fear of bringing issues up and perception of lack of power Lack of informal communication and less moments of contact Lack of alignment between commercial and sustainability goals Lack of involvement and consultation of growers on sustainability strategy: unilateral, top down approach.	*"But where the trust has gone is between the growers and the negotiation, you know, people have lost the trust with where we're going forward negotiating."* *"There's still this dichotomy between what they say about sustainability and what we want to do in sustainability, or what their commercial imperatives they're bound by."* *"Would they rather not do anything on sustainability?"* *"Our growers in the UK are very conservative, they don't want to change. They've inherited a system from their fathers and their fathers – their generation and the supplier's generation, and benefited on their farm, not just with us, with huge subsidies."* *"(...) They want to keep status quo, hence all the comments, we already do this, there's no issues with labour in the UK. All this kind of stuff it's all utopia. And you're right, so we're coming in saying we want to do things differently, they want to keep things the same."* *"If we want things to happen, if we want them to happen in a reasonable timeframe, then maybe an element of this push or whatever it was called, it unavoidable."*
No ownership from growers & mandated approach	PepsiCo's perception that there is a large amount of conservatism and resistance to change, and therefore the best approach is to push sustainability Growers' perception that they are not involved or consulted when it comes to developing the sustainability initiatives Feeling that goals and projects are only one-sided and don't capitalise on the readily available expertise from the growers		
Inconsistent demands and agendas	Growers view the commercial and sustainability agendas as currently not aligned and they attribute this to a lack of connection between PepsiCo's agro and commercial teams.		

Lack of willingness for long-term engagement	From both sides, there is a perception that the other does not want to engage or find a way to engage in long-term contracts. From PepsiCo's perspective, the growers do not want to feel constrained by a long-term agreement and want to be able to play the market. For the growers, PepsiCo has a long-term strategy for sustainability but it wants to maintain short-termist commercial strategies to push the prices down.	Lack of two-way dialogue about each other's expectations from long-term agreements Primacy of formal means to implement sustainability rather than informal: is the context of contract negotiations in its current form the appropriate context for sustainability to be addressed in a holistic manner? Lack of integration between the economic, environmental and social dimensions of sustainability Necessity to link contracts and pricing to the requirements/investments for sustainability	*" Money is the tool we use to get to a more sustainable place."* *"Actually you can work with people in business, you can talk to them, you can actually negotiate on much more a sort of holistic basis when it comes to dealing with the whole process of delivering what the company wants. And these guys just don't do that, they're just like prices, prices, prices."* *"I'll ask for various ideas from growers. Have you got any other ideas that would be mutually beneficial or trusting, so there's equal chance the pricing can go up or down, depending upon whatever's happening. And they can't. You know, we've tried to implement various methods about doing that, it's really difficult."* *"It's interesting, but if you put down what the growers want us to say, the key enabler is the money. You can flower around all the other bits, saying, oh it's people and that, but I think if we gave them significantly more money than the market, we'd probably get a lot more done."*
Money and costs of sustainability	Contentious issue for both sides. Growers have the perception that they are bearing all the costs of sustainability and that their economic sustainability is threatened. On the other hand, PepsiCo stakeholders feel that growers focus too much on the price and monetary aspects and the investments in sustainability projects all have rewards. For the growers, sustainability is presented as an ad-on to an already difficult commercial relationship.		

6.6.1.3.1 Reflections on growers' workshops

The growers' workshops spurred a lot of emotions and frustrations, especially at the beginning, but the discussion was positive. As pointed out by one of the participants, the workshop is the only space available where these emotions can be fully expressed and explored. The growers expressed a real desire for improvement and the willingness to engage.

One of the underlying issues throughout the sessions was the idea that growers were faced with the challenge of dealing with inconsistent demands/antagonistic pressures. This relates more broadly to the question of short-term vs. long-term orientation and the way in which the overall relationships are designed and managed to fulfil both short-term commercial goals and long-term environmental and social issues. The frustrations and the criticism about lack of trust and dialogue mainly lie within this broader issue of non-alignment of agendas.

Another issue that emerged was the difficulty to bring issues up directly, which links with the point made about the context and framing of the dialogue but also with perceptions of power. Resistance to the current projects and ideas may have simply become the way to express frustrations and flag up the necessity for dialogue. Through the workshops however clarifications were made regarding perceptions and misunderstandings, and they allowed each party to express their views and ask questions.

6.6.1.3.2 Reflections on PepsiCo's workshop

The workshop also spurred a whole range of reactions and emotions and it was interesting to end with a more positive and constructive note about change. From

a third party, external point of view, a number of underlying issues/topics have emerged from this workshop.

The elephant in the room was most certainly the question of communication, dialogue and trust. It appeared as a sensitive issue and there was a lack of understanding around what the growers meant when they pointed out the lack of these aspects. Specific examples were given to show that communication and dialogue on sustainability were occurring (through growers forums, etc.). The point that all was open to dialogue was also made. But the necessity to interrogate why these reactions might have come up among the growers is relevant was only partially addressed by formulating it as a question to ask them.

Change aversion and leadership also emerged as critical issues. In particular the dichotomy between mandate vs. ownership was particularly strong. While a mandating approach may be preferable to avoid the chaos of following individual paces, the necessity of ownership is central for the environmental and social agenda to move forward. How to drive ownership was not a topic that was explicitly addressed during the workshop, however it transpired during the "barriers/enablers" and the "ideas for action" activities. It seems that the opposition between mandate and ownership links with broader concerns over questions of types of leadership for sustainability. Traditional leadership would relate more directly with a mandate approach and a top-down view while ownership would be a characteristic of shared leadership, where individual agency is put to the fore.

The last point also touches on opposing views, which were articulated at different times during the workshop. One the one hand, there is the view that advancing the sustainability requires a different way of thinking about relationships and the promotion of more collaborative/knowledge sharing practices. On the other

hand, the necessity to stimulate competition between growers in order to avoid complacency and there to drive innovation and efficiency was highlighted. Both these views relate to conceptions of what is the best way to achieve high results.

6.6.2 Where we want to go: envisioning sustainability

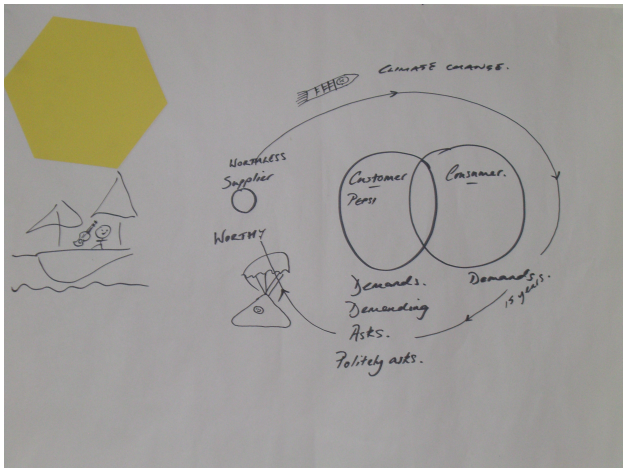
One of the core aims of the workshops was to capture the participants' ideals and desires around sustainability and their relationships.

6.6.2.1 Growers' sustainability ideals

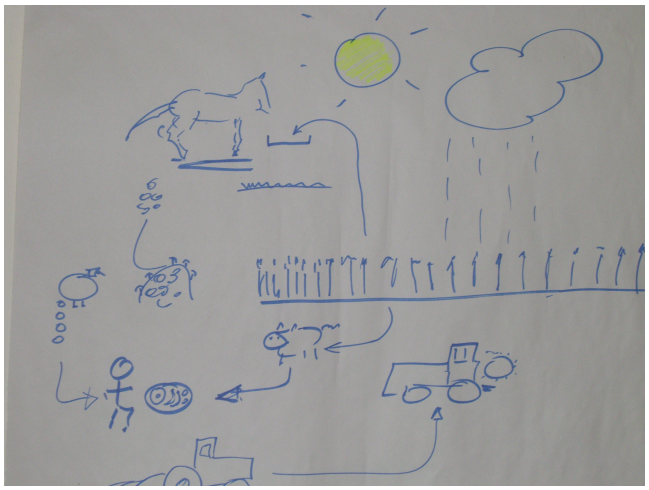
During the first workshop growers were asked to try and represent on paper their vision of the ideal sustainable business. The interpretations were open and the only requirement was for the research participants to include themselves in the picture. The idea for this activity stemmed from the realisation of a relative lack of growers' voice in the way that sustainability was currently approached. It was also a way to capture sensemaking in a different manner. Each grower then presented his drawing to others. Below are photos of the drawings, accompanied by short extracts from the growers' presentations.

I think the countryside is where I naturally fit but it's recognising that there's this and there's a whole world as well, so we, I have some resources but other resources exist elsewhere in the world and in an ideal situation it's all sort of working together, rather than conflicting in any way, it's stable. But it's not like that, but it would be nice if it was.

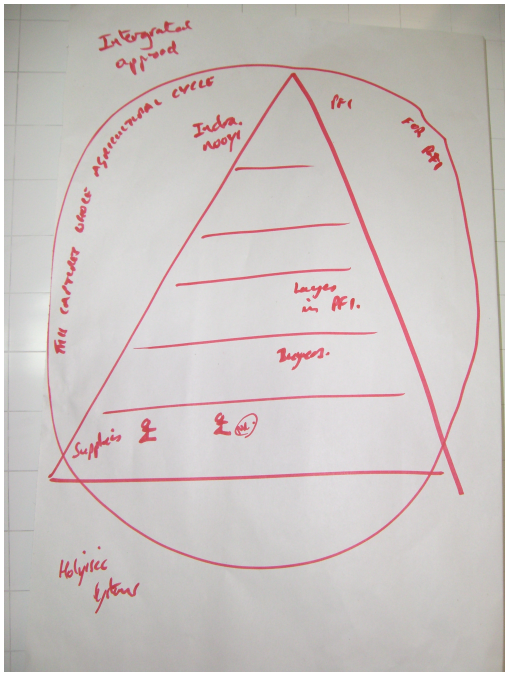
I just saw you know the sun still being in, on earth, it's still green, there's still water and hopefully ...It's supposed to be something in the future, it's supposed to represent the future generations.



I've got my idea on the right and on the left there's me playing guitar on my yacht, somewhere on the southeast coast of Spain, Valencia, somewhere like that. There's my trajectory, the rocket from the supplier being slightly worthless at the moment and then through time and change we're going to be needed, they're going to need us and the demands, demanding, asks, politely asks is what I, potentially might happen and there's my landing back in the rocket, back into the water with a happy face on.



So I eat the egg and bacon, then I get on my tractor and I was going to draw a plant but I couldn't ... and that's meant to be a combine harvester, I go into the field and cut the grain and feed it to the horse.



This is me, this is supplier at the bottom and this is Indra (PepsiCo's CEO) at the top and this captures the entire agricultural cycle and it's not supposed to be a perfect circle, because life isn't perfect.

Looking at these drawings, one can notice four salient features:

i. The circular and/or systemic representations, showing the importance of links/connections for sustainability. The "bigger picture" is there although the way sustainability has been addressed can feel fragmented. Growers have represented the importance of being part of a system.

ii. The inclusion or exclusion of PepsiCo in the drawings. For some "the ideal sustainable business" appears strongly connected to the relationship with PepsiCo or to aspirations about what the relationship could be. In pictures where PepsiCo is not represented, this doesn't mean that the relationship is less important but plays a different role in the interpretations of sustainability.

iii. Feelings/emotions are present in all the pictures. Frustration, hope, pride, disappointment, etc.

iv. The activity stimulated a discussion about the nature of farming/the implications of being a farmer. Themes that were discussed include the lack of control, stress and stereotypes about farmers.

6.6.2.2 Desires for the relationship

The workshops were not only an opportunity to gauge the growers' sustainability visions but also to surface each party's desires for the relationship in that respect.

From the growers' point of view, and quite surprisingly given their "tough" façade, much was said about the soft aspects of the relationships and the desire to feel wanted as suppliers. They said that essentially they were not against the content of PepsiCo's sustainability agenda but they would like to see more engagement going forward and more mutuality in the relationship. Many of them explained that they felt misunderstood and not listened to. The growers as a group have been particularly engaged in the work and have solicited more workshops to address these relational issues, which reveals their willingness to work hard on improving the relationship with PepsiCo.

Participants at the PepsiCo workshop also expressed a desire to see the relationship become more balanced. However, this was primarily meant in the sense that they considered that at the moment the sustainability agenda was driven by them and they would like to see the growers taking ownership of the projects and becoming more proactive in terms of environmental and social ideas. As mentioned previously, there was some confusion about why the growers felt that there was no communication and some participants expressed their desire to see the growers expressing themselves freely about the potential issues they face.

6.6.3 How to get to mutually satisfactory SC relationships for sustainability

Ultimately both sides have made clear their intention to make the relationship work and a number of the workshops activities were designed with the intention of supporting change. They primarily revolved around identifying the enablers and barriers to relationships for sustainability and discussing the potential changes and actions that could be put in place. This represents the trickiest part of this collaborative work: all voices and existing relational dynamics must be taken into account while attempting to foster cooperation on mutually defined actions.

6.6.3.1 Enablers and barriers to relationships for sustainability

During the first growers' workshop, the last part of the day aimed at stimulating a discussion about what enabled and prevented the desired change to happen. The activity consisted in identifying the barriers and enablers to building a relationship for sustainability with PepsiCo, which were then stuck on the wall (picture below). The issues were grouped in 6 clusters (Table 49), all encompassing both negative and positive aspects. In total, the growers identified 36 themes.

Table 49. Enablers and barriers for growers

CLUSTERS		ELEMENTS
1	Communication	- Lack of communication, + Trust, - Lack of trust x2, - Communication between people, + Dialogue, + Start talking
2	Time	+ Correct long-term contracts, - Poor time-frame, - 3 year policy, - Timescale, - Time, + Educate over time
3	People	- Changing personnel, + Change personnel, + People, + Family, + People, + Social
4	Financial	+ Correct price, - Cost, + Benefits, + Financial reward, - Lack of money, + The money pay back
5	Resources	- Lack of knowledge, - Lack of resources (land/£), +/- Power, + Capability, + Data, + Understanding the supply chain
6	Risk	- Supply, + Demand, - Risk x2

During PepsiCo's workshop, the barriers and enablers identified by the growers were presented, and then participants were asked to identify the themes that were most important to them (either from the list or new ones). The picture below represents the 23 themes that emerged from the discussion. The themes were then grouped into three clusters, as detailed in Table 50 below.

Table 50. Most important enablers and barriers for PepsiCo team

CLUSTERS		ELEMENTS
1	Communication & Social	+ Two way communication + Listening more + Communication between growers + Role of people in driving change
2	Resources	+/- Money and negotiations (above market?) - PepsiCo's resources: 1 buyer many growers + Knowledge and education
3	Strategic direction	Mandate vs. ownership to drive sustainability? - Confusion around "sustainability" +/- Competitive environment: is it too comfortable?

6.6.3.2 Moving forward: action plan

Thinking about how to address – or make the most of – the barriers and enablers highlighted previously led the PepsiCo team to building a list of potential actions/activities that could be put in place. From the list of 11 actions/ideas for activities that had emerged from the PepsiCo workshop, the growers felt that five were important, with the first two as priorities, as shown in Table 51.

Table 51. Suggested activities to implement

PepsiCo		Growers
1. Change the context of the conversation (i.e. restaurant, etc.) 2. Create a forum/specific interest group about sustainability 3. Have an open talk about costs/payback 4. Use "catalysts" for discussion 5. Hand-over to third-party (LEAF accreditation…) 6. Promote recognition (awards, incentives, grants) 7. Have proactive growers who would invite on farm 8. Model farm for sustainability practices 9. Ask/listen to growers' priorities 10. Have grower-led meeting 11. Bringing external experts to present	➔	**1. Open discussion about costs/payback: talk margins and fair returns for both parties** **2. Creation of a forum/specific interest group about sustainability: fundamental change in style of engagement.** 3. Ask/listen to growers' priorities: links with previous one 4. Use "catalysts" for discussion: idea of bringing PepsiCo and growers together and need of a mediator 5. Bringing external experts to present.

6.7 Emotional aspects of sustainability sensemaking

The emotional aspects of sustainability sensemaking were evident in this research. Participants –including me as researcher – hold strong feelings about the topic itself, about our positions (change in responsibility, ability to deal with issues, etc.) and about the nature and evolution of the relationships with the other stakeholders. Emotions transpired in every stage of the research and form an integral part of the way stakeholders make sense of sustainability. I have attempted to classify the emotions identified through this collaborative process on a negative to positive spectrum. This is obviously a simplistic division but I felt it enabled encompassing a broad range of emotions encountered and felt. Some of the emotions are classified as more neutral. Table 52 provides some examples of these emotions.

Table 52. Emotional aspects of sustainability sensemaking

	Emotions	Description	Illustrative quotes
Negative	Frustration	Feeling upset, misunderstood and annoyed.	"Because they don't understand, they don't think about agriculture, about farming, about what we have to deal with on a day to day basis." "And to understand actually that what we are putting back to Pepsi is real data. We're not trying to pull the wool over their eyes, we're desperate to get the product into the factory."
	Anxiety	Feeling worried and nervous, mainly due to uncertainty.	"It's a scary business to be in because of the amount of risk that we take" "To be fair sustainability and reducing your carbon footprint, a lot of this is to do with investment to be honest (…) And the dilemma for us is to be able to find the amount of capital."
	Anger	Expressions of hostility and exasperation with the current situation or specific events.	"Thinking this is 50 years or something we've been growing for you, and it's just gone, just like that, because you are so pig headed and not understanding the economic situation that you're putting us all in, not just us, but everybody."
	Mistrust	Feeling of suspicion and lack of confidence.	"When they're negotiating they'll say, all the other groups have signed up. You know from a conversation with colleagues that that's not true. But as soon as you come in the room it's presented as you're the only group that hasn't signed up yet"

	Disappointment	Expectations or hopes about a certain behaviour or event are unfulfilled.	"If I look at 50 in 5, there's a disappointment from me that they're not taking ownership and actually come banging on the doors, I've got some great ideas or whatever."
	Helplessness	When a situation is out of control, with feeling of being powerless.	"(…) Utterly out of your control, it was just the weather, there was nothing – no matter what you threw at it, there was nothing you could do to stop it."
Neutral	Nostalgia	Feeling of attachment and longing for the past and how things were done then.	"And don't get me wrong I'm not living in the dark ages, but we used to do contracts around a bottle of wine, sitting down somewhere and we would chat… Your word was your word and we would say right okay we will do this."
	Relief	Feeling reassured about something that was causing anxiety or stress.	"I think for me, the positive aspects, the sustainability message seems to have got through because a lot of the Wordle stuff was very similar if you read the big words."
Positive	Appreciation	Expressions of respect and value for a certain behaviour or aspect of the relationship. Recognition of the positives.	"Compared to some other factories and some other customers, we've looked at in the industry, they have treated us well."
	Excitement	Expressions of enthusiasm and enjoyment.	"When sustainability suddenly became a big part of my job, everything changed and I no longer felt like I wanted to retire. I am very excited about this." "It's been great fun. I thoroughly enjoyed it and it's been an education."
	Pride	Pleasure or satisfaction expressed with regards to personal or closely related achievements.	"I think naturally most people want to look after the environment and I think as farmers we have done that really rather well for generations really. I think the British countryside is pretty good."
	Hope	Feeling trust and expectation that something will happen.	"If they're directed to build a relationship, a long term stable relationship, they want that going forward, which the hope is that's a direction from the top, we can maintain this group we've got…"

Classifying an emotion as positive does not mean it is necessarily positive in sustainable relationship sensemaking terms, and vive versa for negative. For

example, pride can be associated to viewing sustainability as a vehicle of higher achievement but also reveal a certain level of comfort with the way things are (i.e. conservatism). At the other end of the spectrum, when feeling anxious about sustainability or related issue, people may feel less inclined to commit to it or make adaptations. However, this may constitute a fertile ground for opening discussion and for the other parties involved to find ways to reduce this anxiety (e.g. financial help, training, etc.).

6.8 Sensemaking across workshops

6.8.1 Reflecting against the research questions

Having discussed in details the content and process of this cycle of inquiry, it is now possible to offer responses to the research questions by linking and summarising the findings.

6.8.1.1 How do SC stakeholders make sense of the change needed for sustainability?

Through this chapter it has become clear that all sensemaking processes (action, communication and emotion) are intertwined and that participants use of a number of mechanisms to give meaning to sustainability in the context of their relationship with PepsiCo but also in the broader context of their work and life. While the change for sustainability within the relationship seems rooted in the existing tensions and conflicts, when considering the individual definitions of sustainability there are many common grounds and shared views. One of the most interesting outputs of the workshops was the collection of growers' sustainability drawings, which helped tease out their voice on the question as a group. The drawings and subsequent discussion highlighted the systemic view of sustainability

that prevails among the suppliers, although they may not use the term sustainability to describe it. Emotional aspects of sensemaking permeate this chapter. Sustainability is associated with strong feelings, which affect how stakeholders view their role in the change process, perceive what is acceptable and unacceptable, and understand each other.

6.8.1.2 How do stakeholders' meanings and sensemaking processes affect the development and implementation of sustainability practices in the SC?

While there are commonalities in the meanings of sustainability, stakeholders across the SC hold different interpretations of how it should be addressed as part of the relationship. There is a lack of open communication about the nature and implications of sustainability. PepsiCo represents a dominant voice. There is evidence of their strong sensegiving efforts in the way communication and actions around sustainability are orchestrated. This seems to have affected the implementation of SSCM in two ways. First, the content of sustainability projects has primarily focussed on the environmental aspects, which have appeared as more measurable and straightforward. There has been a lack of comprehensive approach to sustainability issues. Second, the approach to SSCM has been rather fragmented and unilateral. Stakeholders have engaged in a multitude of small sustainability projects (some of them overlapping), which have been driven by PepsiCo with little inputs from the suppliers. Despite the high sensegiving efforts from the PepsiCo stakeholders, a plurality of individual accounts have been gathered revealing that a high level of confusion still exist about to address sustainability issues. The feeling that growers are reluctant to go beyond minimal compliance is salient and is certainly related to how sustainability has been approached in the relationship (i.e. a

push) rather than to the content of the projects, which all appeal to the growers' vision of sustainability as expressed in the drawings.

6.8.1.3 How might the participative workshops support sensemaking for sustainability and provide the means to build the momentum for change between SC actors?

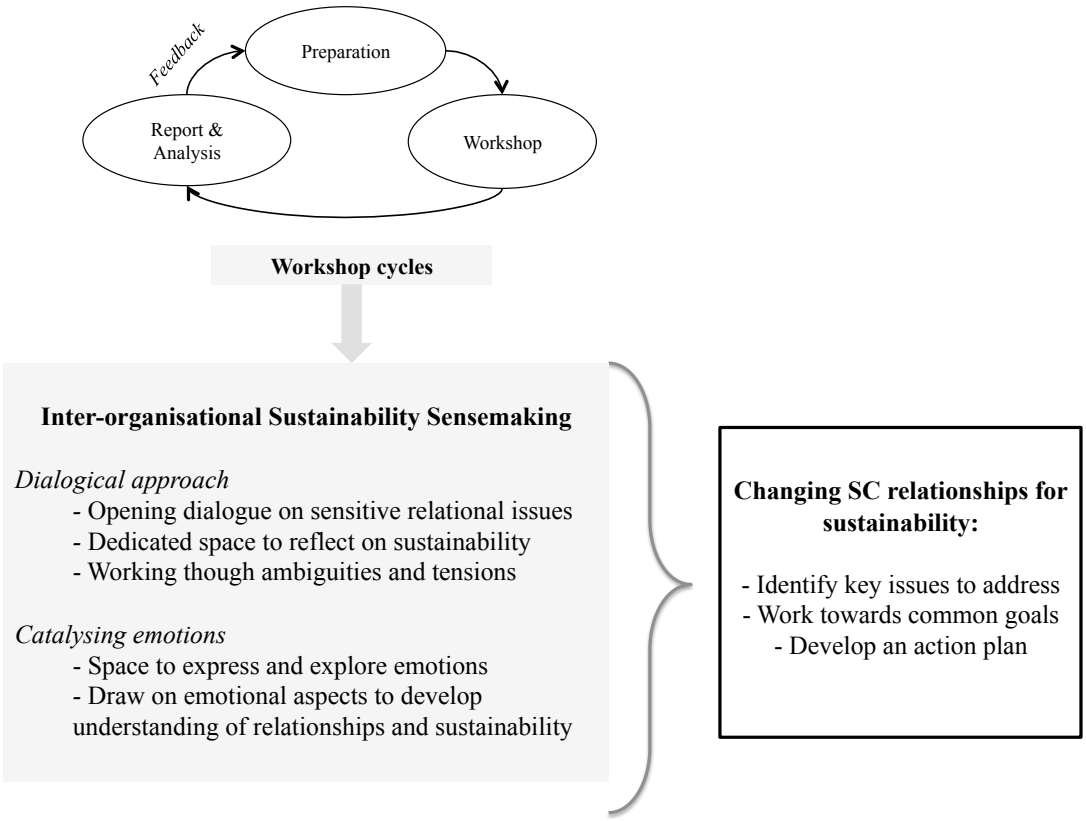
This cycle of inquiry has shown that the participative workshops in this research have created the "shared experiences" that are key to sensemaking (Weick, 1995). The workshops have supported sensemaking and change for sustainability in the context of PepsiCo and the growers' relationship in two fundamental ways.

First the workshops have opened a dialogue on sustainability between the SC parties that did not exist previously. Through this dialogical approach, it has been possible to identify and delve deeper into critical relational issues that could not be expressed in other contexts (Bradbury & Lichtenstein, 2000; Cramer, Van Der Heijden, & Jonker, 2006). In particular, the workshops have been an opportunity for the participants to step back and reflect on their relationships outside the actual space of these relationships. Through these dedicated sessions, the research participants had an opportunity to "work through" the difficulties, tensions and ambiguities, and eventually construct a more workable certainty (Lüsher & Lewis, 2008).

The second area of contribution of this cycle relates to the emotional aspects of developing SSCs. The workshops played a role in catalysing individual and interpersonal emotions. Research participants have been able to express their frustrations and desires, and actually explore the roots of these emotional reactions. The approach can support sensemaking through a recognition that emotions are central to organisational practice (Lawrence & Maitlis, 2012), notably in shaping behaviour and in the development of business relationships (Andersen & Kumar,

2006). Figure 20 is an attempt at illustrating the participative workshops as a dialogical approach to sensemaking, which can serve as an enabler of change.

Figure 20. Participative workshops as enabler of sustainability sensemaking and change (Source: Author)



It is nonetheless difficult to evaluate the full effectiveness of the participative workshops to build lasting change across the SC given the limited scope of this research. The richness and depth of the findings in this cycle are an indication that this is a promising and fruitful approach for these relationships. The question of feasibility of such a method in the context of extended SCs needs to be posed, with for instance less homogeneous, more international and geographically scattered audiences. Designing and organising the workshops has required time and resources – not simply material but also in terms of specialised skills – and considerable efforts have been spent trying to coordinate the schedule of the workshops. Finding

mutually dates was a tricky aspect. Considerations about the resources that would be needed to scale up this kind of approach are required.

6.8.3 Unexpected consequences and findings

In this final section, I would like to discuss the unforeseen consequences and findings from the research.

The first and most striking event that occurred during the course of this inquiry is that one of PepsiCo's heritage grower groups decided to leave the relationship. The group chairman attended both growers' workshop and the decision was taken between the first and the second workshop. He shared his experience during the second workshop and explained how his group viewed it as a really positive development, not only commercially but also in terms of sustainability. They have now entered a new relationship with a local crisp manufacturer, who has involved them closely in the development of their sustainability agenda. Beyond the obvious question of whether or not this was a desirable outcome for the relationship and for sustainability more generally, it spurred reflections about the nature and implications of participative research. The workshops contributed to opening a space for discussing sensitive relational topics and one of the side effects has been to bring to the fore some of the latent issues. In this particular case, the workshops have certainly contributed to increasing the growers' consciousness of their own power. The extent of the connection between this work and the group's decision to cease the relationship is not direct or even obvious. However, it made me aware as an action researcher of the importance to try and anticipate the potential side consequences of my work.

A second unforeseen consequence of the workshops has been the extent of the impact it has had on me as a researcher and on a personal level. Designing and organising the workshops has appealed to my inter-personal skills and enabled me to gain confidence and develop new skills as a facilitator, such as the ability to engage in reflective questioning. On a more personal level, I have developed strong connections with the research participants. This means that I am finding it difficult to draw the line and move on, and envisage what comes next after the end of this PhD research. This certainly also raises a number of issues when it comes to "passing the torch" and with regards to the expectations developed by the participants and the fear of failing them. It is a difficult but worthy experience to confront one's own desires and fears.

Diary extracts January 2012 – October 2013

Extract 1. It is funny to notice that doing research permeates all throughout your life. Having been a few days away in the Yorkshire Dales, I found myself looking around at the fields and wondering if they might be growing potatoes for PepsiCo. Is there a chance that I know them? And then ending up discussing sustainability and conservation with the B&B owners.

Extract 2. I am becoming more and more self-conscious as a researcher and I try to reflect upon the way I behave and transmit my own opinions through the conversations with the different participants. I find it really hard not to question my perspective and always ask myself if the way I formulated such and such questions wasn't already hinting at a certain expected answer. Keeping the distance and developing affinities are two hard things but I have to make sure I keep reflecting on this, and where I position myself.

Extract 3. The end of the last growers' workshops was definitely an emotional moment in the research… None of them wants it to end; none of them wants me to leave. One quote from the transcripts sums up the discussion that we had around lunch: " We need an extension to your contract. Because otherwise they'll time out and you'll disappear and nothing's changed." Where does this leave me? What do I want to happen after this cycle is over? Who owns this work and the change that may come from it?

6.9 Conclusion and practical implications

This final section is an opportunity to present an answer to RQ6 and describe practical implications of this cycle of inquiry.

6.9.1 In what ways can SC stakeholders build a shared vision of what sustainable SC relationships should look like?

In this chapter, sensemaking theory has been applied to explore and support inter-organisational sustainability sensemaking between PepsiCo and the growers. There are some key lessons that can be drawn from this cycle of inquiry with regards to finding ways of building shared vision of SSC relationships between SC stakeholders.

The existing structure and governance of the SC is likely to impact on how sustainability initiatives are introduced and implemented. In turn this will affect the way in which SC stakeholders make sense of them and their willingness to cooperate on building a shared vision and action plan. While the different stakeholders may already hold similar views about what they consider important to address as part of the broader environmental and social agendas, they may not be able to perceive the commonalities due to existing tensions and predominant forms of working.

As a consequence, it is necessary to understand the existing forms of communication and actions as well as the emotions held by the different SC stakeholders in order to be able to articulate a potential way forward. The participative workshops process has been extensively described and discussed as a way to support collaborative sensemaking between SC actors. Building a shared vision is a long process, which involves numerous political aspects. The role of an

external facilitator or researcher may be valuable to enable opening sensitive discussions and linking the different voices.

6.9.2 Practical implications for PepsiCo-growers relationships

A number of practical insights have been gained through the workshops, and there are three main implications for the relationships between PepsiCo and the growers around sustainability:

i. Commercial relationships and relationships for sustainability cannot be treated as two separate things. Including sustainability clauses within the contract only means that sustainability is framed within the old/traditional relationships, which isn't fully embraced by the growers. The starting point to reframe relationship must be around openly discussing costs and economic dimensions.
ii. The growers' expertise remains untapped and there exist positive desires to change from both sides. The research aimed at capturing all the different voices and perspectives around sustainability. It has also helped assess the extent of the willingness and/or resistance to change. Moving forward, the social capital and expertise emanating from the relationships with a large grower base needs to be exploited.
iii. It is possible to learn from the process as much as the content of the workshops. Both parties have expressed the willingness to move the relationships forward and continue this stream of work. The workshops are a new form of engagement as they have created new spaces of dialogue, which are open and different from other meetings. Advancing sustainability means

attempting to do things differently and therefore spaces must be created for this to happen.

Finally the issue of continuity was brought up at the end of the series of workshops and particular concerns were raised about what will happen to the findings once the research finishes. The format is perceived as a new type of communication, which needs to continue. While the research fits within the timeframe of a PhD, the outcomes and insights should inform future practice and a discussion about who will take ownership of continuing the process, if it were to continue, needs to be held.

The discussions held at the end of the workshop cycles highlighted the necessity to reflect upon the actual impact of the work conducted with PepsiCo and the growers and hence address the question of change. This will be the focus of the next chapter, which constitutes the final part of the Deep Dive.

Chapter 7 – Questions of change agency in shaping sustainable supply chains relationships

7.1 Introduction

7.1.1 Objectives

As mentioned at the end of Chapter 6, the final stages of the research with PepsiCo and the growers triggered the need to reflect on what had been achieved through this work and address the question of change. Let us recall the overall research question:

> *RQG. How can SSCM be facilitated through the relationships between a large customer and its small suppliers?*

In Chapter 1 and 4, the improvement and change orientation of this research have been discussed as well as the desires of PepsiCo to see some practical impact from this work on their relationship with growers. This chapter is about bringing all the pieces of the puzzle together and build a full picture of inter-organisational change agency for sustainability as experienced and explored in this work. Particular attention is paid to:

- Discussing the role of change agents in SSCM, as the research has been conducted in collaboration with a number of individuals;
- Including an insider perspective and self-reflective accounts, as an essential part of any action research work
- Framing and linking the discussion with the relevant literature

7.1.2 Structure of the chapter

This chapter is shorter than the others chapters in The Deep Dive as it does not rely on the application of new methods but rather represents a reflective cycle.

The first section discusses the motivations for focussing specifically on the question of change and the role of change agents. The second section presents the literature reviewed on change and change agency for sustainability. The third section describes the analytical focus of this chapter. The next two sections respectively describe the insights gained during the research on the evolution of sustainable supply chain relationships and the role of the various individuals involved in this context. Finally, conclusions and implications are presented about the key aspects that have emerged.

7.2 Motivations and sub-research question

In more or less subtle ways, the notion of change for sustainability has been addressed in this work. However, claiming to be engaged in some aspects of organisational change raises the necessity to provide some sort of evaluation of its unfolding and considerations about the question of agency. Exploring some aspects and events of the PhD journey can help understand the motivations for making change agency the core theme of this final cycle of inquiry. This section uses a first-person account to explain how the question of change has been present throughout this research.

I have thought about the question of change since the very beginning of this research project. From the original proposal for this work as part of the *ESRC EREBUS* framework to the formulation of the overall research question and the choice of AR as research approach, it is clear that the research project is linked to the question of changing practice. The reflective extract below recalls a particular memorable moment that occurred fairly early on the PhD journey.

Reflecting on change agency

At the end of the first year, I presented my full research proposal to colleagues within the business school. The presentation was a practice run before the final oral examination that would determine whether I would be able to continue into the second year of the PhD. The primary aim of this oral examination is to evaluate the feasibility of the student's research project in the timeframe of a PhD.

When the day of the practice run came, I was nervous. There were no apparent and objective reasons to be feeling this way as the research was under way and things were progressing as planned. And above all this was meant to be a way to prepare and help me for the final exam. But I felt anxious about not being able to present my ideas clearly, about failing the people who had put faith in me to conduct this research, about presenting in front of some of the most renowned academics in my field, and I guess above all about putting my ideas out there for all to scrutinise and find myself in a vulnerable position. This was somehow a right of passage and my first real confrontation with the critical world of academia. I had not doubt about the relevance of my research in practice but I was still to find out how other academics perceived it. In short, this was all about belonging and finding my place in the field.

Looking back, I might have able to prepare myself better and deliver a more convincing presentation. But then again one cannot fully anticipate how things will turn out and it is only when you fall that you really learn what it means to get yourself back up. During the presentation, I was bluntly told that it would not be feasible to study and accompany change in the scope and timeframe of a PhD. This was a blow and a personal challenge. To be fair there was no consideration about the question of change agency in my presentation at the time.

The remark hence prompted an exploration of the concepts of organisational change and change agency. Adventuring on this path has also meant reflecting more deeply about purpose in research and about action research as a methodology. In the end, the question of change has affected not only the design but also the content of the research. There is one particular question that has remained with me throughout the PhD journey since this event and it is a question that resonates strongly with the concept of agency: "Can we make a difference as individuals? And if so, how?"

Hence, having gathered all the insights from the field, the final cycle of inquiry sought to answer the following sub-research question:

RQ7. How do individuals contribute to the change towards more sustainable practices in the SC?

7.3 Conceptual background

With the desire to understand what organisational change agency really meant and how the concept could be critically applied to the context and process of this research, the relevant literature on the topic was reviewed and assessed. As discussed in Chapter 4, the abductive approach adopted in the research means that there has been a continuous interplay between empirical evidence and literature. As a consequence, although the reflection in this chapter has progressively and inductively emerged from the research, an awareness of the conceptual background that has helped frame and shed light on the discussion is presented subsequently. This section summarises the concepts that will be referred to along the way in order for the reader to start from a similar place.

7.3.1 Organisational change and change agents: an overview

Organisational change has received tremendous attention to date and is one of the most popular research topics in management (Pettigrew, Woodman, & Cameron, 2001; Thomas, Sargent, & Hardy, 2010). Space does not allow for a full discussion of the organisational change literature. Rather, for the sake of this chapter, attention is paid to assessing how organisational change agency has been researched and conceptualised previously. Here I consider change agents as individuals, not events or organisations.

Although at first it appears that the role of change agents in the organisational change process is often viewed as one of intervention and/or implementation; or in other words purposeful and intentional (Caldwell, 2005), there exist competing views of change agents' roles, which can be linked to the long-standing debate on structure and agency. The core of the debate lies in determining the nature of the relationship

between ‘agency’, human capacity to act independently, and ‘structure’, overarching entities, mechanisms or systems (Sewell, 1992; Caldwell, 2005). Let us note that the meaning of both concepts is contested given that it is framed by the understanding of their mutual relationship. Four major views have contributed to the structure/agency debate: the rationalist perspective emanating from the work of Kurt Lewin (1947a); the constructivist or dialectical perspective (Berger & Luckmann, 1966; Hargrave & Van de Ven, 2006); Giddens’ structuration theory (1984); and finally the postmodern discursive perspective (Caldwell, 2007; Thomas, Sargent, & Hardy, 2010).

The rationalist view proposes a rather rigid, linear and unilateral conception, where rational agents shape and influence the structure, whereas the dialectical perspective argues for the interdependence between agents and structure, each contributing to the emergence of the other. Structuration theory also conceptualises the relationship as interdependent, but offers a more contextualist view, accounting for the complex social and political interactions of agents in the process of change. The postmodern perspective adds discourse as another dimension of the puzzle, stressing the importance communicative interaction and meaning negotiation in the emergence of organisations. Caldwell (2005) offers a detailed presentation of the different discourses of change agency. It is not surprising then to find many studies that have focussed on producing typologies, taxonomies and models of change agency; or presenting the perspective of a certain type of change agent (e.g. Reflections of the 'action researcher' as change agent in Pettigrew, 2003; Björkman & Sundgren, 2005).

A common trait of the various contributions on change agency is the recognition of its political nature. Specifically, persuading others to support and adopt new practices require a certain political skill set enabling change agents to deal

with conflicts, overcome resistance and break the norm (Pettigrew, 2003; Battilana & Casciaro, 2012). One can already see the link between the literature on change agents and the description of the role of the action researcher as discussed in Chapter 4.

7.3.2 Sustainability change agents

The role of change agents in corporate sustainability practice resonates with the concepts found in the change agency literature in general. A number of papers offer typologies of sustainability change agents, who are often identified as sustainability managers (Visser & Crane, 2010). Links are often made with leadership and entrepreneurship for sustainability. Some authors focus on environmental championship in driving sustainability at organisational level, hinting at the individual commitment of managers in this context (Andersson & Bateman, 2000; Visser & Crane, 2010). The concept of environmental entrepreneurship has also emerged to describe individual contributions to the innovative efforts required to advance ecological sustainability (Keogh & Polonsky, 1998). Discussions related to leadership have looked at different skills and styles and how they relate to the development, implementation and achievement of sustainability goals (Székely & Knirsch, 2005; Maak & Pless, 2006; Angus-Leppan, Metcalf, & Benn, 2009; Du et al., 2012; Metcalf & Benn, 2012). It has been argued that transformational, collaborative and responsible leadership, rather than transactional leadership, represents a critical capacity in the management of change for sustainability (Székely & Knirsch, 2005; Metcalf & Benn, 2012).

In their book, Dunphy, Griffiths and Benn (2007) aim to provide a guide for change agents within corporations. They argue that some traditional organisational values and forms are not sustainable and hence change for sustainability needs to

happen. Although they recognise that sustainability is a contested concept, they argue that the urgency of the issues means that organisational actions supporting social relationships and the natural world need to be taken without waiting for a consensus to be reached. They propose a phase model of corporate sustainability, which can help classify organisations on their progress towards sustainability. The phase model is summarised in Table 53 below.

Table 53. Phase model of corporate sustainability (Source: Adapted from Dunphy, Griffiths, & Benn, 2007)

1st wave		*2nd wave*			*3rd wave*
Opposition	**Ignorance**	**Risk**	**Cost**	**Competitive advantage**	**Transformation**
Rejection	*Non-responsiveness*	*Compliance*	*Efficiency*	*Strategic pro-activity*	*The sustaining corporation*
Instrumental perspective Culture of exploitation Opposition to government and activists Community claims seen as illegitimate	Primacy of financial and technological factors Ignorance rather than opposition Business as usual, compliant workforce Environment as free good	Focus on reducing risk of sanctions for failing to meet minimum legal and community standards Little integration HR & environment function Compliance and maintain good citizen image	HR systems for productivity & efficiency Environmental management as source of avoidable costs	Focus on innovation Stakeholder engagement for safe environmentally friendly products and processes Advocate good citizenship to maximise profit and retain and attract employees	Re-interpretation of the nature of the corporation to an integral self-renewing element of the whole society and in its ecological context
Value destroyers	Value limiters	Value conservers	Value creators		Sustainable business

The phase model must not be viewed as a continuous improving trajectory. Rather organisations can regress or leap forward. From this perspective, change agents are proactive stakeholders who take responsibility in shaping the change for sustainability. Change agents have a key role to play in leading the way towards

sustainability (Dunphy, Griffiths, & Benn, 2007), for instance in creating vision, supporting the transformation, articulating and acting meaning, and inspiring other individuals at multiple levels (Dunphy, 1996; Whiteman & Cooper, 2011). Dunphy et al. (2007: 322) state that "as change agents and change leaders, we are only one source of influence in a complex changing reality. Nevertheless let us not underestimate the potential transformative power that we represent… Change leadership involves owning our own power and using it responsively and responsibly." They offer a rather prescriptive approach to sustainability change agency, and they are explicit about adopting an AR approach to support the learning process.

Clearly research on change agency for sustainability reveals the importance of moral and personal aspects in this context. Individual commitment and values are central to sustainable change, and will affect the way in which change agents make decisions about which path they deem suitable to follow (Egri & Herman, 2000; Cramer, Van Der Heijden, & Jonker, 2006; Leiserowitz, Kates, & Parris, 2006; van der Heijden, Driessen, & Cramer, 2010). Individual agents proactively acting to shape and drive the sustainability agenda, have strong personal values and identities, which make them able to legitimate their actions in contradictory organisational discourses (Wright, Nyberg, & Grant, 2012). One of the difficulties of being a sustainability change agent is dealing with uncertainty by creating shared understandings and defining a more workable definition that can enable change (Lüsher & Lewis, 2008).

To date there remains little research on individual change agency for sustainability and even more so in inter-organisational contexts (Sharma, 2002), which confirms the relevance of this chapter.

7.3.3 Key aspects of change agency in this thesis

A number of authors have noted the decentred or distributed nature of change agency (Pettigrew, 2003; Hargrave & Van de Ven, 2006; Buchanan et al., 2007), which recognises the emergence of change as a result of the connection and interaction of multiple actors rather than originating from the actions of a single individual. This means that change agents can be found operating at different organisational levels and different ranks, ensuring both operational and strategic change capacity (Pettigrew & Whipp, 1991; Massey & Williams, 2006). This view echoes with the concept of shared or collaborative leadership, which considers leadership as a social process co-created by individuals in a network of relationships (Senge et al., 2007; Angus-Leppan, Metcalf, & Benn, 2009). This notion of collective action can also be found in the institutional entrepreneurship literature, which stresses the important role of actors (institutional entrepreneurs) in the design, collective implementation and institutionalisation of change (Hargrave & Van de Ven, 2006; Battilana, Leca, & Boxenbaum, 2009).

When researching change agency, or acting as a change agents, for sustainability one must be careful not to fall into the usual heroic perception of the change agent battling adversity and fighting for a greater good (Wright, Nyberg, & Grant, 2012). It is important to remain aware of the potential caveats that change agency carries. In particular, there is often the assumption that change agents are well-intentioned minority against the rest and are faced with resistance. It is likely that change agents themselves contribute to such resistance, as they have to break old agreements and renegotiate trust with other parties involved (Ford, Ford, & D'Amelio, 2008). It was shown that sustainability is a contested concept and it is therefore likely that agents in the same organisational context hold multiple

meanings of sustainability. Differences in opinions and positions must be taken into account when exploring change agency for sustainability, and caution must be raised about dependence on individuals for change, as it may bring a number of drawbacks. The diary extract below shows some personal reflections related to change and sustainability in relation to this research.

Diary extract – Summer 2012

CHANGE

I feel that the notion of change is central to this research and I cannot help but reflect on what change means to me and how it affects me and how I react to it. I cannot blame anyone for fearing change because of the risk and the novelty it entails. The core issue with change is uncertainty and the ease of doing what you have always done is very tempting. This certainly encompasses trivial things like moving house to more complex matters such as implementing strategic change within a multinational organisation. The turning point, the momentum or the tilt is a great step forward and needs careful calculations that might sometimes be overlooked when the prospects brought about by change are idealised and exciting.

SUSTAINABILITY

I am slowly coming down to Earth regarding my conception of a sustainable business and particularly of what sustainability means at business level. I slowly realise that all of us have different priorities and in reality the journey is slower and more incremental than I initially conceived. Within business especially, it seems difficult to go pass the economic frontier and talk about social issues and environmental as standalone concepts. All is intertwined and sustainability is about the perspectives/prospects of business in the future considering these dimensions and the role that can be played by the different actors in this respect.

The view adopted in this thesis is very much in line with the work of Tsoukas and Chia (2002), Pettigrew et al. (2001), and Weick and Quinn (1999). I have attempted to do justice to the more fluid and emergent aspects of the transition towards sustainable supply chains as opposed to a more mechanistic and planned view of change. This has meant starting from the premise that the sustainable supply chain, as a 'site of human action', emerges through 'the ongoing agency of inter-

organizational members' (Tsoukas & Chia, 2002: 580). In addition, in line with Dunphy et al. (2007) value is given to the transformational aspects of SSCM, which involves re-evaluating existing practices.

In Chapter 4, the connection between AR as a methodology and researching change for sustainability has been discussed. Hence I have shown that the core of this research project has been to deliver knowledge on "how to" as much as on "what is" (Pettigrew, Woodman, & Cameron, 2001).

Chapters 2, 3 and 5 have attempted to capture the political and relational dynamics of the research and hence contextualise the change process (Pettigrew, Woodman, & Cameron, 2001; Tsoukas & Chia, 2002).

In Chapter 6, the role actors in terms of meaning negotiation in the change process, was explored. Specifically, the way in which actors make and give sense to change and in that way contribute to its co-creation, is central (Weick & Quinn, 1999). The actions and interactions of change agents has been viewed from a sensemaking standpoint as they contribute to the emergence of shared interpretations about the nature of change and how to go about it (Gioia & Chittipeddi, 1991; Weick, 1995; Weick & Quinn, 1999; Weick, 2001).

This chapter is a necessary final step to integrate the contextual and temporal elements of change experienced (Pettigrew, Woodman, & Cameron, 2001) with considerations about the individual agentic aspects at play in this process. I hope to be able to convey a sense of the disorderly flow that characterises the shaping of sustainable supply chains in a somewhat orderly fashion.

7.4 Analytical focus

The findings presented in this cycle of inquiry draw from all the information collected throughout this PhD research. Hence this cycle is not based upon the application of a particular method, such as those described in Chapters 5 and 6, but required analysing the entire research from a change agency perspective. The purpose of this chapter is to explore the contribution of individual actors to the implementation of sustainability in the SC. The relevance of considering individuals in SSCM was explained in detail in Chapter 6, section 6.3.1.

Looking back at the transcripts and the notes from meetings and workshops, particular attention was paid to events where individual agents were in contact and the dynamics of such events (communication patterns, sensitive topics, dominant and weaker parties, relational aspects), and individual narratives about views of sustainability and description of role and challenges in this regard. In the emergent themes, some were found relating to the individual change agents and others describing interactive patterns. Findings were compared with the existing literature in order to move to broader conceptual dimensions of change agency in this research. The analysis also involved reflecting on the context in which the agents find themselves and its evolution, namely the changing inter-organisational relationships for sustainability. The analysis of the insights gained from the field is presented in the next section as a response to the sub-research question RQ7.

7.5 How do individuals contribute to the change towards more sustainable practices in the SC?

7.5.1 Changing inter-organisational relationships for sustainability

Despite the early concerns from fellow academics about the feasibility of observing and accompanying change in the timeframe of this PhD, it is actually possible to see that the evolving picture of the relationships between PepsiCo and its suppliers lies in the fold of this thesis. This picture is summarised in Table 54, using a temporal approach corresponding to the phases witnessed during the course of the PhD.

Table 54. Aspects of change in this research

	Phase 1	**Phase 2**	**Phase 3**
Timeframe	**October 2010 – January 2012**	**January 2012 – June 2013**	**June 2013 - …**
Sustainability initiatives and context	PepsiCo's sustainability agenda is in full swing and is being rolled out in the various supply chains, potatoes in particular. As part of the path to zero, the 50 in 5 programme is implemented in 2010 with the aim of achieving a 50% reduction in carbon and water impacts by 2015. The programme is supported by the adoption of the i-crop and the Cool Farm Tool. Sustainability requirements introduced in the contracts with growers. Introduction and trial of drip irrigation.	Noticeable decrease in resources dedicated to sustainability from PepsiCo's perspective. Refocus on core brands with the economic hardship. Continuation of projects already in place. Some growers showing proactive investment in energy reduction. Growers facing adverse weather conditions in the season 2012 -2013 putting strain on phases of production and delivery. The growers have not taken up drip irrigation.	Full renewal of PepsiCo's sustainability engagement with a variety of new projects being launched or discussed. Examples include: launch of the Sustainable Farm Initiative (a framework with nine environmental, four social and three economic sustainability indicators, measured through a large scale questionnaire), Farmers' Hub, sponsorship of another PhD student to look at ecosystems and biodiversity. Growers face the upcoming reform of the CAP, which includes a strong focus on sustainability both economically and environmentally.
Sustainability achievements in the SCs – as measured by PepsiCo	- Drip irrigation technology trialled on three fields in 2011, which uses pipes laid down in the field to deliver specified amounts of water at specific times to every crop. Results showed a 36% decrease in water use and 7% yield increase achieved. Similar level of success delivered in 2012; with a 46% decrease in water use and 5% increase in yield. - Since 2010, growers have achieved a 27% reduction in carbon emissions, and 73% reduction in water use.		
Relationships between PepsiCo and suppliers	Existing tensions between PepsiCo and the growers on commercial aspects. Growers follow the initiatives introduced by PepsiCo but express their discontent. Very much a leader/follower relationship with more or less resistance from growers	Evidence that growers haven't bought in all the initiatives from PepsiCo – especially if not in the contract. Easier to collect data regarding carbon compared to previously. Relationship improved massively in period of crisis as mutual support was necessary	Additional information requested from the growers but general feeling of hopefulness following the difficult year. Heritage grower group has discontinued the relationship on the basis that it wasn't economically viable and there was no mutuality and involvement
Researcher' involvement and relationships	Exploratory phase until April 2011 Development of strong relationships with PepsiCo's sustainability team Attendance of several growers' meetings, Sustainable Food Lab meetings, Sustainability team pow-wow meetings	Organisation of participative workshops Strengthening of relationships with the growers and more regular contacts, high expectations from their part Less involvement with PepsiCo's sustainability team	Post-workshop reporting and communication with the participants Regular updates from the PepsiCo team and some of the growers Less face-to-face relationships and more communication via phone/email Exploring possibility of running further workshops.

7.5.2 Experiencing and assessing change agency

The table above confirms what has been argued throughout this thesis about PepsiCo clearly driving the sustainability agenda in the SC. Essentially they are the ones pushing new projects and initiatives to incorporate new dimensions within the relationships, i.e. environmental and social requirements. The emergent and collective view of change and agency adopted in this chapter does not fail to recognise the role played by PepsiCo as an institutional/organisational agent of change, but rather brings emphasis on the level of individuals in this change process. An obvious route to the analysis would have been to view the team and employees at PepsiCo acting as leading agents in the implementation of a planned change for sustainability. However, this conception implies that others in the process are mere change recipients who are passive and not engaged. The reality is such that both those acting on behalf of the leading organisation and other parties in the chain are shaping the actual ongoing change. All are involved in the process. Hence the term "agents of change" may be more appropriate to describe the contribution of individuals in the context of this research.

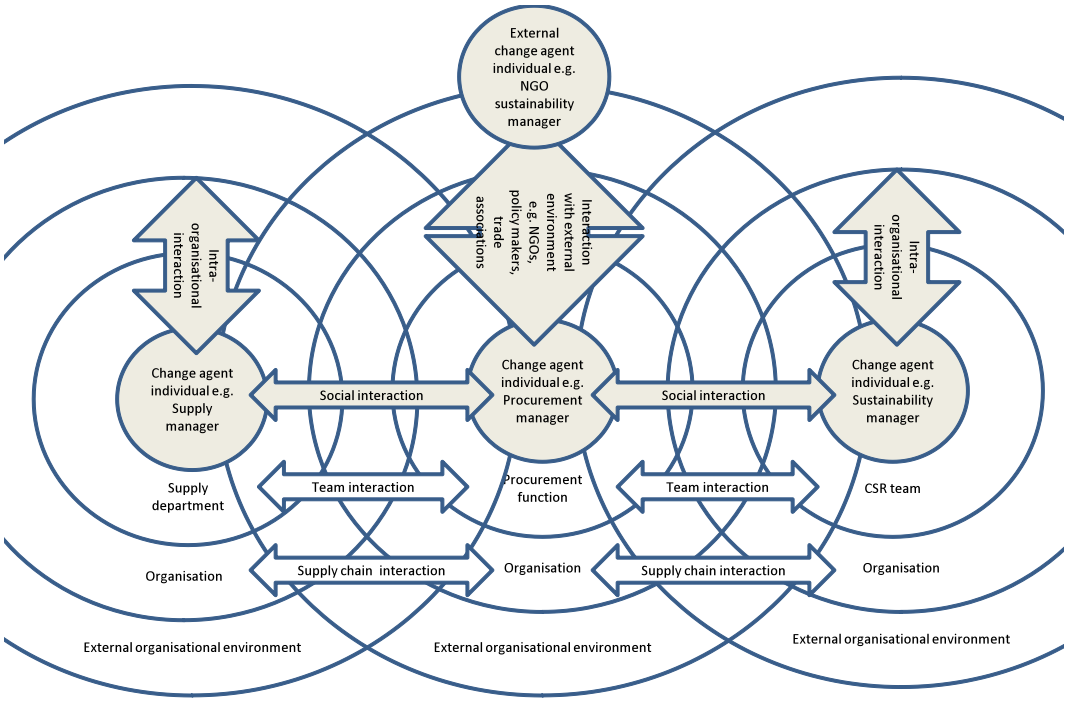
The focus of this section is not about identifying who is involved (Buchanan et al., 2007) or where they sit in the various levels, but how do they contribute? With this in mind, the rest of this part will attempt to analyse how individuals in this research have influenced change and assisted in implementing SSCM.

7.5.2.1 Agency at different levels

Considering that the research has taken place in an inter-organisational context, the first step in trying to construct a *good* picture of agency is to depict the interconnections of multiple contextual levels. Early stages of the research

engagement mostly involved activities with individuals from PepsiCo, which highlighted the role of the sustainability team members as agents of change. However, as the research progressed I observed individual agents interacting within, outside and across the supply chain (see Figure 21). These individuals interact with others and influence change within their organisation. They also interact with individuals across the supply chain to influence change. They also interact with individuals outside of the organisation in the external environment, such as the researcher, individuals within NGOs, policy makers, members of trade associations etc.

Figure 21. Agents of change within, outside and across the supply chain (Source: Author)



7.5.2.1 Roles of agents

A particularly challenging aspect of analysing agency is to differentiate between what can be viewed as institutional/organisational agentic and individual agency. In simple terms, this means attempting to grasp what lies within the realm of individual actions for the change for sustainability in contrast to what has been put in place by the organisation. This distinction also raises the question of whether individuals have the leeway to and the perception that they can influence the change. As a consequence, it is possible to view agency as a combination of both an objective position and role in a transitioning structure/system (in this case the SC) and a subjective perception of one's own level of influence on the change.

In the research, I have shown that the dominant or powerful discourse in the SC has shaped the actions and interactions amongst change agents as well as perceptions of their roles. When in a meeting one member of the agriculture team said "we need shared responsibility. I am hoping that at some point it will become a shared objective", it was questionable whether the concept of "shared" really meant a movement towards a collaborative effort or more the necessity for other agents to conform and adopt the dominant view.

Usually change agents are viewed as being those driving the change but it is important to take into account the actions of those confronting the dominant discourse as they also have an impact on how the change for sustainability is implemented. Their resistance means that things may take another turn.

Taking into account the existence of a dominant discourse on how sustainability should be implemented and considerations about the different roles agents can take; it is possible to distinguish between three different agency roles in this research (summarised in Table 55). I realise the strong connotations associated with the terms employed to describe the roles. It is important to note that these roles are fluid and are defined in relation to each other in the given system/structure. Some individuals sit between two roles.

Table 55. The three main roles of agents in the research

	Description	*Individuals in the research*
Catalyst	Individuals driving the current sustainability initiatives in the SC as reflected in their responsibilities and ability to express their views and bring about new projects.	Agricultural sustainability manager Europe, PepsiCo
		Researcher European sustainability analyst, PepsiCo
Supporter	Individuals not presenting any proactive role in designing and launching the different initiatives but playing a pivotal role in supporting the different initiatives and the change.	Agronomist Agricultural raw material buyer Consultants
		Supplier A1, Supplier A2
Dissident	Individuals openly or more subtly opposing the current change initiatives while in most cases being forced to comply to the agenda in some way.	Supplier A5

In this research, the agro team has played a key role in making the connection between the PepsiCo's strategic intent and individual growers through meetings and interventions at farm level. Amongst the individuals in the team, it is possible to argue that the agricultural sustainability manager and the agronomist hold pivotal positions for the advancement of the SSCM agenda because of their direct involvement with the growers and their ability to connect with other functions in the focal firm as well as their participation in organisations in the external environment. Individuals within the commercial team probably have the most sensitive role to play in the transition as they embody the traditional aspects of the relationship between PepsiCo and the growers and their realm of action and interaction are primarily confined to contract negotiations and discussions regarding meeting the traditional targets of quality, quantity and delivery. However, with the sustainability agenda, their role has become more complex as they have taken on the additional responsibility of communicating and contracting the new sustainability requirements.

It is no surprise that their relationships with the other agents – in particular with the growers – are the most tensional.

In supplier organisations, the people at a more senior level have been involved in the implementation of sustainability and have had responsibility for cascading the messages further up the SC and for ensuring that other parties put the practices in place. They mainly play the role of supporters. In some cases, individual suppliers have expressed their disagreement with the current sustainability agenda and the priorities of PepsiCo in this respect. In this sense, their resistance, either enacted through refusing to provide data on time or simply expressing their views, is evidence of their role as dissidents.

Some individuals seem to sit between two positions as their roles has evolved through the research and they have shown facets of different agents. For example, as a researcher, I have benefited from the independence and freedom to express my views, organise and run the research and initiate the workshops as a new activity for sustainability in the SC. However, the position I have occupied has been created at the initiative of PepsiCo to support their sustainability agenda, and in that sense I have also found myself in a supporting role.

Interestingly when trying to gauge individuals' perception of their own influence on the sustainability agenda during workshop warm up activities, there was a mix of perceptions. The constellations activity, during which individuals were asked to map themselves in the space according to an axis, was a good way to understand the individual subject aspect of agency. Three different but related questions were particularly critical in this respect. The questions and outcome of the activity are presented in Table 56.

Table 56. Constellations questions related to agency

Instructions	Growers	PepsiCo
Q. *Can you please map yourself according to how you feel about the future of the planet?* ***Axis.*** *Room divided in the middle into two sides: positive and negative*	All except one placed themselves on the positive side.	Mixed. Two people on the positive side: Agricultural sustainability manager and Director of agricultural procurement Centre: Sustainability analyst Negative: Agricultural raw materials buyer
Q. *How do you perceive your ability to do something about it?* ***Axis****. Same as previous*	Most participants standing on the negative side, with some closer to the middle.	Positive: Agricultural sustainability manager and Sustainability analyst Negative: Agricultural raw materials buyer and Director of agricultural procurement
Q. *Where do you think the change for sustainability needs to be coming from?* ***Axis****. An imaginary continuum from the top (i.e. government) to the bottom (individuals)*	All but one standing on the "top" end of the continuum and describing it as the "dictator" side. Some discussions stimulated change of position with people at the "top" moving towards the middle.	Top end of the continuum: Agricultural raw materials buyer and Director of agricultural procurement Bottom end: Agricultural sustainability manager Towards bottom end but less extreme: Sustainability analyst

It is fairly easy to notice the predominance of a lack of perception of agency from the various individuals and hence a sense that they are not in position to act or do something important in response to the sustainability challenge. There were also indications that individuals perceived the responsibility to lie elsewhere, i.e. in the hands of government or large organisations. This does not mean that these individuals are not participating in the change, as clearly their objective roles have evolved to encompass responsibilities to address environmental and social criteria. However, what it shows is the necessity in this context to develop a sense of agency amongst the players in the SC and essentially support them in getting a sense of what their individual roles can be in the context of the transition.

7.6 Conclusion and implications

7.6.1 Key aspects of inter-organisational change agency for sustainability

This chapter has explored the question of change agency in SSCM. It constitutes the last piece of the research puzzle and brings together considerations about the overall research process. Some lessons can be drawn from the analysis regarding some key aspects of inter-organisational change agency for sustainability.

In this project, although the focal company has driven the sustainability agenda, it is possible to identify transformative agents across the different organisations of the SC. This is mainly due to the fact that the issues encompassed under the sustainability umbrella appeal to individual personal values and commitments. In particular, in agriculture, there are deep connections between environmental preservation and the duty of sustaining a healthy business for the next generations.

In contrast to previous research on change agency for sustainability, the emphasis has not been put on the "heroic" or "leadership" role of agents but rather on their interconnections. Hence some agents affect the way in which the sustainability agenda evolves not only by being supportive but also when being in opposition. This highlights the importance of understanding the interplay between SC governance issues, as discussed in Chapter 4, and the advancement of the sustainability agenda. It is very likely that tensions emanating from the way the relationships are managed will impact the level of engagement of the different stakeholders across the organisations.

Finally finding from the research revealed a gap between the role of agents and the perceptions they have of their influence. Interestingly most stakeholders

involved in the research failed to develop a sense of urgency and responsibility towards the sustainability agenda. This is a key finding that reveals the necessity to empower individuals.

7.6.2 Practical implications: What happens next?

The question of continuity was already raised at the end of Chapter 6. From a change agency perspective, it is important to consider the questions of relying on a small number of individuals to move things forward and the issue of "passing the torch". Hence the practical implications primarily relate to enabling an open inquiry about the perceived value of this work and the role that needs to be played by those who have been involved. The personal aspects for the researcher are illustrated in the box below. A full discussion of the impact of this research is presented in Chapter 8.

January 2014

During a recent phone conversation with M., who has helped me facilitate the first workshop, we discussed the sort of energy that comes when leaving the field and reaching "the end". While there is the relief of having somehow completed the brief, there is also the anxiety and excitement of what comes next. As of now, the relationships that have been forged during the research are still enduring but it remains to see how they will evolve and get redefined as the time of the PhD is over. M. left me with questions to ponder on: How do I see myself and my research progressing in the future? What is it that I desire to accomplish? And above all, where do I find meaning in my work?

III. The Gathering

So the little prince tamed the fox. And when the hour of his departure drew near –

“Ah,” said the fox, “I shall cry.”

“It is your own fault,” said the little prince. “I never wished you any sort of harm; but you wanted me to tame you…”

“Yes, that is so,” said the fox.

“But now you are going to cry!” said the little prince.

“Yes, that is so,” said the fox.

“Then it has done you no good at all!”

“It has done me good,” said the fox, “because of the colour of the wheat fields.”

And then he added:

“Go and look again at the roses. You will understand now that yours is unique in all the world. Then come back to say goodbye to me, and I will make you a present of a secret.”

(…)

And he went back to meet the fox.

“Goodbye,” he said.

“Goodbye,” said the fox. “And now here is my secret, a very simple secret: It is only with the heart that one can see rightly; what is essential is invisible to the eye.”

“What is essential is invisible to the eye,” the little prince repeated, so that he would be sure to remember.

“It is the time you have wasted for your rose that makes your rose so important.”

“It is the time I have wasted for my rose” said the little prince, so that he would be sure to remember.

“Men have forgotten this truth,” said the fox. “But you must not forget it. You become responsible, forever, for what you have tamed. You are responsible for your rose…”

Antoine de Saint-Exupéry

The Little Prince (1943), Extract from Chapter 21

Chapter 8 – Rounding up: Reflecting on theory and impact

8. 1 Introduction

8.1.1 Objectives

As mentioned in Chapter 1, the Gathering is meant to illustrate the thesis-writing phase of the research where a complete view of the overall process starts emerges. This chapter aims to build a full picture of the various levels of relationships for SSCM that have been explored in this work. In particular, it is an opportunity to discuss more fully the theoretical implications of the research and clarify the contributions to the literature. Findings from the different cycles of inquiry are discussed in relation to the map of SSCM theory that was proposed in Chapter 3. In addition, having reached the end of the research, it is possible to reflect on its impact. The three core objectives of this discussion chapter are:

- Linking all the findings to relevant literature (i.e. propositional knowing)
- Articulating in details the theoretical implications of the research
- Offering an critical evaluation of the work conducted in this research

8.1.2 Structure of the chapter

The remainder of the chapter is structured in two sections. The first section relates to the theoretical implications that have emerged through the different cycles. The second section provides a final appraisal of the quality of this piece of action research in relation to the question of impact.

8.2 Theoretical implications of the cycles of inquiry

8.2.1 A multilevel view of relationships for SSCM

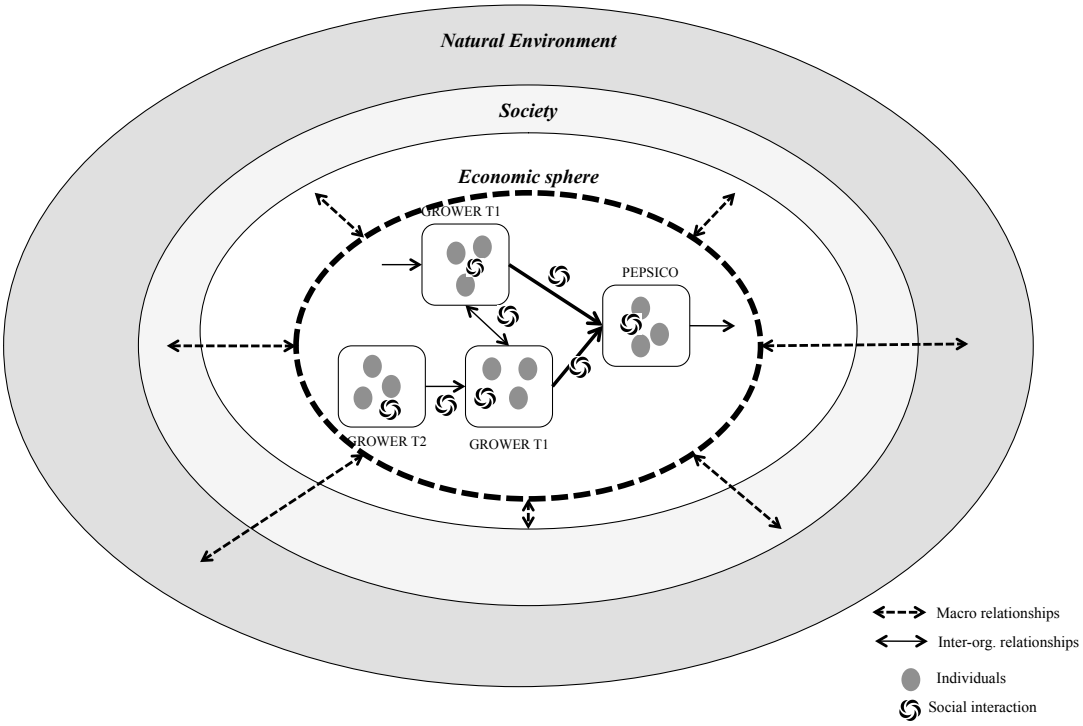
The research presented in this thesis has attempted to attempted the following overarching research question through multiple cycles of inquiry:

RQG. How can sustainable supply chain management be facilitated through the relationships between a large customer and its small suppliers?

The discussions presented at the end of the different chapters mainly summarised the key learning from the cycles as well as articulating the implications of the findings for the research in collaboration with PepsiCo and the growers. A final effort to link the findings from the cycles to the literature presented throughout the thesis is needed, which is consistent with third-person research. This is what this section aims to achieve.

On the whole, the research has contributed to developing a greater understanding of how SSC practices are implemented in practice and offered insights into the social complexities of managing change for sustainability across organisations. In attempting to investigate how SC relationships evolve to encompass sustainability, the cycles of inquiry have explored collaboration and power dynamics at the inter-organisational level as well as the role of individuals in these relationships at the micro level. The overall analysis of the findings of this research has contributed to the emergence multilevel picture of sustainable supply chain relationships, as illustrated in Figure 22 below, already presented at the end of Chapter 3. The theoretical insights gained at the different levels are articulated in the remainder of this section.

Figure 22. Multilevel representation of the research levels (Source: Author)



8.2.2 Level 1: Inter-organisational relationships for SSCM

The cycle of inquiry presented in Chapter 5 covered aspects related to SC relationships for sustainability at the inter-organisational level addressing both collaboration and power perspectives.

8.2.2.1 Collaboration

In the research, collaboration was operationalised around seven different themes, namely relationship history, trust, shared goals and values, communication, commitment, participation and continuity/mutual expectations. Through the interviews, the additional theme of "resources and capabilities" was added. The

findings showed that within each theme there exist subtle dimensions (or factors) that support or hinder a collaborative approach to SSCM. In line with previous research, the findings highlighted the importance of relational capital (i.e. trust, relationship history) and commitment in supporting collaborative efforts for sustainability (Simpson & Power, 2005; Sharfman, Shaft, & Anex, 2009).

The most critical factors hindering collaboration on sustainability from the suppliers' perspective were the perceived unilateral approach (one-way communication and lack of involvement) and the inability to invest in new resources or adapt to new requirements. From PepsiCo's perspective, the most critical hindering factors were the perceived suppliers' resistance to change and the limited growers' absorptive capacity in the context of their increased reliance on the growers to achieve sustainability goals.

The differential in available resources and capabilities between the large buyer and small suppliers was found to hinder collaboration rather than their actual size, confirming previous research (Bowen, 2001; Bowen, 2002). The large buyer and small suppliers have complementary resources, for instance regarding access to innovative knowledge technologies (large buyer) and expertise of working with the natural environment (small suppliers), which can support collaboration. These findings confirm the importance of putting in place the right incentives and facilitate joint and knowledge sharing activities in order to overcome barriers (or lack of enablers) to collaboration (Simpson & Power, 2005; Cheng, Yeh, & Tu, 2008).

The findings hence offer a more nuanced view of collaboration for SSCM. By considering both supporting and hindering factors, it is possible to explore the degree of collaboration between the organisations in the SC (Hall, 2000; Matopoulos et al., 2007). This shows that it is important to understand contextual dynamics in order to

evaluate the feasibility of a governance model, in this case a collaborative approach to SSCM (Vurro, Russo, & Perrini, 2009). The research also reveals the dynamic nature of SC relationships for sustainability and the necessity for governance mechanisms to evolve (Alvarez, Pilbeam, & Wilding, 2010). A successful approach to SSCM very much depends on the ability of the SC parties to understand the relational specificities of their relationships and capitalise on complementary abilities. Collaboration can be developed through time thanks to investment in both formal relationship building mechanisms (e.g. right contracts, financial incentives, etc.) and more relational aspects such as trust (Geffen & Rothenberg, 2000; Alvarez, Pilbeam, & Wilding, 2010).

A further analysis of the findings on collaboration was conducted using the relational view (Dyer & Singh, 1998), which has not been systematically applied in SSCM research to date. The relational view enabled categorising the previously identified factors into more refined categories, namely: enablers, lack of enablers and barriers to collaboration. Hence the relational framework has been tested in the context of SC relationships for sustainability and was helpful in extending existing knowledge of the factors that may impede the full realisation of a collaborative advantage in this context.

The findings from the research suggest that although the relational view is an interesting framework to understand how SSC relationships are managed, it may not be sufficient to understand all the factors at play in this context. As noted previously, in practice it is often difficult to find cases that clearly fall within full collaboration, and SC relationships for sustainability tend to exhibit a mix of both collaborative and compliance mechanisms (Sharfman, Shaft, & Anex, 2009; Alvarez, Pilbeam, & Wilding, 2010). Applying the relational view in the context of our this research has

increased knowledge around the boundary conditions of the theory, which appears more suited to the context of large firms working together in more balanced relationships.

Reflecting on the relational view suggests possible areas for extension. It would be interesting to extend the relational framework by including considerations about the varying degrees of collaboration, for instance by taking into account factors such as power and business environment, and how these may impact on the achievement of relational advantage. A further step would be to try and examine how one might conceptualise relational rents, as the extra value emanating from collaboration, in the context of sustainability where environmental and social aspects need to be taken into account. This may in turn help shed light on the cases where companies may want to manage a portfolio of relationships depending on their different sustainability goals.

8.2.2.2 Power

Analysing the interview findings from a power perspective led to a number of novel insights regarding SSC relationships, which complement the collaborative view widely adopted in SSCM literature. This also served to respond to calls for researching how power imbalance between buyer and supplier affects sustainability practice (Pullman, Maloni, & Carter, 2009).

The research shows that a powerful organisation can drive sustainability in its SC. Dependent suppliers in this situation have little choice but to comply with the buyer's requirements and are obliged to invest specifically in the relationship to become more sustainable. These findings are in line with previous work, which suggested that buyer power represents a resource to force supplier compliance to

sustainability requirements (Hall, 2000; Preuss, 2001; Ireland & Webb, 2007; Ciliberti et al., 2009). Buyer power constitutes an effective tool for sustainability, as a power imbalance in favour of a large proactive buyer allows them to define and drive the sustainability agenda on dependent suppliers, ensure compliance, and stimulate collaboration around sustainability between their network of suppliers. This is especially relevant in the case of small suppliers whose engagement in sustainability may be limited without the pressure from a powerful customer, as shown in previous research (Lee & Klassen, 2008; Millington, 2008; Pedersen, 2009). There were additional indications in the research that the degree of power imbalance between the buyer and supplier affects the level of supplier compliance and willingness to engage in sustainability projects. Specifically, in cases where there was strong buyer dominance, the suppliers were more likely to comply whereas in less extreme cases suppliers were more likely to be resistant.

However, when the power imbalance is in favour of the supplier, the engagement around sustainability in the relationship remains minimal. This corroborates the view that relatively independent suppliers do not feel as much pressure to comply with the buyer's requirements (Casciaro & Piskorski, 2005). This creates a high level of uncertainty for a buyer looking to achieve sustainability goals. As a consequence, such imbalanced relationships may be characterised by attempts from the dependent buyer to restructure the relationship to advance its sustainability goals (e.g., seek longer-term agreements, implement knowledge-sharing processes).

A powerful buyer's demanding sustainability requirements, combined with adversarial commercial practices, is likely to create confusion and uncertainty for suppliers. In the long term, it can also undermine the long-term economic sustainability of smaller suppliers, as they bear a higher share of risks and costs of

the sustainability initiatives, proportionally to their available resources, while benefiting less from their adoption than the buyer does. This can be likened to a 'technological treadmill to oblivion' as observed in previous research in other food SCs and contexts (Cox, Chicksand, & Palmer, 2007). In addition, attempts by the buyer to use its powerful position to advance sustainability result in a perception by suppliers of a degradation of the quality of the relationships, particularly as communication and decision making appear rather unilateral. As this feeling becomes shared among the majority of suppliers in the SC, a sense of solidarity emerges, and suppliers become increasingly reluctant to cooperate with the buyer's requirements. This research therefore reveals that supplier–supplier relations in SSCs emerge beyond the control of the powerful buyer and will have an effect on the overall sustainability performance, hence supporting previous findings on horizontal relationships (Wu & Choi, 2005; Choi & Kim, 2008; Choi & Dooley, 2009; Choi & Wu, 2009). This can help answer the question of where the boundaries of a buyer's responsibility lie in a supply network, highlighted by Amaeshi et al. (2008). These aspects constitute potential barriers to the advancement of SSCM in the future.

The findings revealed that levels of dependence between players might shift when considering sustainability. A dominant buyer can become increasingly dependent on its suppliers to access and control environmental and social resources, which are critical to achieving SSC goals. In this case, joint dependence becomes higher and provides a foundation for both parties to develop longer-term organisational arrangements, which align commercial and sustainability goals. However, as predicted by past research using RDT, the dominant buyer is likely to resist loss of discretion to maintain its bargaining power and advantageous exchange conditions (Casciaro & Piskorski, 2005). The resulting confrontational atmosphere

undermines collaboration on sustainability practices, as parties have difficulty creating mutually beneficial relationship conditions (Belaya, Gagalyuk, & Hanf, 2009). This supports the earlier suggestion that RDT needs to be extended in SSCM to account for not only economic but also environmental and social dimensions of the relationships.

Overall the power analysis conducted in Chapter 5 makes a relevant contribution to the SSCM literature as RDT has been previously identified as relevant but relatively under-utilised in the field (Sarkis, Zhu, & Lai, 2011). The research has made a novel contribution to the SSCM literature by adopting extending the RDT model to explore SSC relationships. The power framework derived from RDT (Cox, 2004a) was particularly appropriate to the context of this research where relationships were imbalanced.

However, further work is needed to explore the implications of the degree of power imbalance in relationships. As has been suggested by this research, in relationships where there was significant buyer dominance, rather than weaker buyer dominance, it was more likely that the supplier would fully comply with the SSCM agenda. There also exist additional opportunities to apply and extend RDT in SSCM research. For instance, combining RDT with stakeholder theory would gain insights into how firms manage and prioritize stakeholder dependencies in the SC. RDT could be used to explore the political mechanisms through which organisations create conditions that are more favourable to their sustainability interests (e.g., lobbying government for transition to low-carbon technologies).

Finally, despite the usefulness of RDT as a theoretical perspective to examine power dynamics it has not enabled differentiating between the different strategies that may be used by the different players as well as systematically identifying the

hazards created by power imbalanced relationships. Additional insights may be gained from applying TCT (Williamson, 1981) to shed light on exchange hazards and how they may affect SSCM practice and the management of SSC relationships (Sarkis, Zhu, & Lai, 2011).

8.2.3 Level 2: The role of individuals in SSCM

Having explored the relational dynamics at the inter-organisational level, Chapter 6 and 7 address the role of individual stakeholders in these relationships from two perspectives: sensemaking and change agency.

8.2.3.1 Sensemaking

In Chapter 6, sensemaking theory has been applied to study inter-organisational sustainability sensemaking processes between PepsiCo and the growers. This chapter makes an important theoretical contribution to SSCM. The sensemaking approach contributes novel insights into micro level interactions. The findings of this chapter certainly complement past research that has considered inter-organisational governance dynamics and is helpful in moving towards a more multilevel understanding of SSCM.

Findings from this chapter show the tensional dynamic of sustainability sensemaking (Allard-Poesi, 2005). Sustainability is a highly equivocal issue and inter-subjective processes have prevailed, with stakeholders expressing diverse and conflicting perspectives. Conflicts are part of the negotiation processes activated by the expression of minority and diverging views (Allard-Poesi, 2005). The lack of cohesion and resulting confusion has given rise to attempts at influencing the sensemaking process by the most powerful player through formal procedures, which reveal the political aspects of sustainability sensemaking (Hope, 2010). In particular,

power plays a role in inter-organisational sustainability sensemaking. When considering SCs dominated by powerful focal firms, it is possible to wonder about the extent to which definitions (and hence practices) of sustainability are also buyer-driven (Boons & Mendoza, 2010). In this case meanings can be seen as imposed rather than negotiated. This type of SC structure poses tremendous challenges to the development of shared understandings of sustainability between stakeholders that can foster the achievement of true sustainable change (Weick, Sutcliffe, & Obstfeld, 2005). It may appear easier to use existing imbalanced relationship structures to drive sustainability in the SC rather than try and work to develop shared meanings because this may be synonym with confrontation, increased anxiety and more uncertainty. The philosophy of conflict avoidance may fail to enable parties to work through uncertainty by creating even more resistance and impede the development of innovative answers (Allard-Poesi, 2005).

The chapter also revealed the interplay between the organisational and individual level of sensemaking for sustainability. It is fair to expect a stark difference in sustainability engagement at organisational level. While large corporations often have explicit sustainability strategy in place (often translated into specific goals on a given time frame), smaller firms may not be seen as engaging in sustainability (Lee & Klassen, 2008). This may be because we apply frameworks of understanding of sustainability, which are predominantly found in the activities of large corporations. Tensions between stakeholders are linked to the perception of an autocratic enforcement of sustainability policy from the powerful organisational members. However, when considering the individual level, synergies can be found related to personal values and motivations to engage in sustainability. Understanding both organisational and individual sensemaking can help address possible conflicts

and resistance (i.e. why some issues are rejected or accepted), and create buy-in and engagement (Angus-Leppan, Benn, & Young, 2010).

Findings from this chapter corroborate the view that sensemaking is not simply a cognitive process and emotions are key factors informing stakeholders' sensemaking (Bartunek et al., 1999; Weick, Sutcliffe, & Obstfeld, 2005). The emotional connections between the research participants and between the researcher and the participants underlie the quality and the depth of the engagement as much as hard facts and reports (Bartunek, 2007). Hence, emotions have an impact on the way relationships are or need to be reshaped to address sustainability. Time in sustainability sensemaking is reflected through the future and long-term orientation of sustainability. Balancing short and long term in sustainability activities can influence stakeholders' ability to deal with the uncertainty related to the change. Sensemaking is traditionally viewed as an essentially retrospective process (Weick, Sutcliffe, & Obstfeld, 2005; Angus-Leppan, Benn, & Young, 2010) where individuals refer to prior experiences, knowledge and structures to make sense of ambiguous issues. When stakeholders attempt to make and give sense to sustainability, they refer to their desires and expectations for the future. Hence sustainability sensemaking also includes a prospective dimension.

Adopting a sensemaking approach shows the implications for the management of relationships for SSCM. SSC stakeholders act as sense makers, sense givers and sense receptors. Sustainability needs to become an integral part of the relationships rather than an added dimension. This transformation may be enabled through both formal (negotiation, contracting) and informal means. It is important to foster inter-organisational sensemaking processes that can allow tapping into

stakeholders needs, motivations and values, and work through tension rather than try and avoid it (Lüsher & Lewis, 2008).

In this research sensemaking theory has been applied to study inter-organisational sustainability sensemaking processes in SCs. The research contributes to the sensemaking literature by applying a sensemaking approach to relationships between multiple organisations and by gathering the viewpoints of various organisational stakeholders. Furthermore, key emotional aspects of sustainability sensemaking were prominent in the research but have been relatively unexplored previously. The sensemaking framework was useful in supporting the design and analysis of the second cycle of inquiry.

The research has shown the existing interplay between sensemaking and power in the SSC. However the current sensemaking model downplays the role of power in the sensemaking process. Further research may provide a deeper understanding of sensemaking processes – for e.g. their antecedents and outcomes – by looking into procedural justice and fairness as well as into the role of authority (Maitlis, 2005; Hornibrook, Fearne, & Lazzarin, 2009). Stakeholders' perceptions of fairness and expertise in the sensemaking process may influence the level of acceptance or resistance to organisational explanations and decisions. There is also a possibility to combine sensemaking with institutional theory in order to offer insights into the relation between institutional influence and individual sensemaking processes for sustainability (Weick, Sutcliffe, & Obstfeld, 2005). An additional possible avenue for future research is to explore in more depth the link between sensemaking processes and organisational outcomes. This could help develop a typology and examine the sensemaking and sensegiving processes at play in

organisations regarded as particularly successful in managing sustainability their SCs.

8.2.3.2 Change agency

Gathering the findings from the entire research, Chapter 7 focused on the question of change for sustainability at the inter-organisational level and in particular on the role of individual stakeholders in this respect.

Insights gained through the research support the view that change emerges from collective action (Hargrave & Van de Ven, 2006). In a SC, the interactions, either collaborative or confrontational, between the various agents in different positions shape the direction in which the sustainability agenda advances. The struggle to translate the concept of sustainability into practical initiatives means implementation can be quite confrontational (van der Heijden, Cramer, & Driessen, 2012). It is arguable that change for sustainability in the SC is a negotiation process between individual change agents (Gioia & Chittipeddi, 1991). Each individual agent or group of agents communicates and acts in accordance to their understanding of sustainability. While this negotiating process creates uncertainty and tensions that can paralyse the advancement of sustainability, the development of a shared framework comes from working through the ambiguity rather than escaping it (Lüsher & Lewis, 2008). This is where external change agents, such as researchers, can help by facilitating communication between SC agents and by linking embedded sustainability issues to broader societal concerns.

It is clear that inter-organisational relationships are re-shaped, jargon and technical language is developed, and roles are re-defined through the process of change for sustainability. SC agents act as catalysts, supporters or dissidents in this

process; but their influence is impacted by existing governance dynamics between organisations in the SC. In particular, existing power relations must be taken into account to understand how sustainability is framed and change emerges (Maloni & Benton, 2000; Pettigrew, 2003; Bondy, 2008; Thomas, Sargent, & Hardy, 2010; Meehan & Wright, 2012). Change agents in the powerful focal firm may use this position to impose their vision of sustainability on other SC agents, who are left with little choice but to follow if they want to remain in business. This may appear as a form of power abuse, which may result in resistance and impair the ability to tap into the potential of other change agents along the SC. It is therefore important for change agents to be aware of their position and reflective of their actions if a more workable approach is to be developed between the different parties in the SC. Studies of change agents in SSCM must not neglect the context in which change emerges.

The question of the impact of governance structures on the actions and interactions of SC agents raises questions about the relationship between individuals and organisations in the context of managing sustainability in a SC. It has been acknowledged that organisational values and culture exert a strong influence on individual decision-making and behaviour in CSR (Cramer, Van Der Heijden, & Jonker, 2006; Visser & Crane, 2010). The fact that agents identify themselves with and try to fit in the organisation sustainability vision may serve to explain the emergence of a dominant discourse and practice of sustainability in a SC dominated by a powerful firm. Agency in this sense is about acting on behalf of the organisation to implement sustainability. This may result in mixed messages, as actors have to deal with the organisational paradox of sustainability being framed in a short-termist profit-driven conception of business.

Conversely, individual values shape the way in which concepts of sustainability evolve at the organisational level (Visser & Crane, 2010; Metcalf & Benn, 2012). Personal values are rarely discussed in organisational contexts and even less so in inter-organisational relationships. The development of a coherent sustainability framework in a SC may entail that individual value systems are openly talked about.

There may be limits to relying on a small number of individuals to drive change for sustainability in a SC given the highly political and emotional aspects of the context. The way in which individuals act within and between organisations to shape new understandings of business and to implement sustainable practices is crucial to understand. Change for sustainability emanates from collective and collaborative actions (Thomas, Sargent, & Hardy, 2010; Ryan, Mitchell, & Daskou, 2012). Insights into how this dialectical interactive process works are valuable to inform both policy and practice of corporate sustainability. Collective efforts and inclusive strategies represent fruitful ways to go about addressing the ambiguity and the tensions resulting from this transition.

On the whole, Chapter 7 presented an inductive discussion of the question of change agency in the research, drawing on concepts from the extant literature rather than testing of a theoretical lens in this context. The discussion was helpful in reintroducing a temporal and change dimension to the issue of implementing sustainability in SCs. In this sense, the chapter makes an original contribution. However a more systematic application of relevant theoretical lenses could have been beneficial in developing a more thorough understanding of the role of agents in the transformation of the SC into a SSC. For instance, Sarkis et al. (2011) called for the adoption of a structuration view (Giddens, 1984) to better understand and explain

the complex social interaction between the various SC actors in the implementation of SSCM, and in particular to study the interaction between agency and structure, i.e. the SSC in this case. Another relevant theory suggested by Sarkis et al. (2011) is agency theory that could serve to investigate managers and SC actors' motivations to adopt sustainability practices in a dyadic or SC context.

Additional fruitful lines of investigation include adopting psychological theories, to explore the processes of motivation and cognition that cause individuals to influence change towards sustainability. A stakeholder approach could also elucidate the multiple interpretations and influences upon a sustainability initiative. Sociodynamic approaches (Fauvet, 2004) may help to reveal the mix of synergy and antagonism that change agents might feel towards a project. A further research avenue is to consider what happens when change agents leave, go rogue, become opponents, become moaners or mutineers, are not pursuing change for the greater good, or get sustainability 'fatigue'. Understanding the negative sides of change agency would enrich our understanding of how to avoid pitfalls in sustainability implementation. Finally, it would be helpful to conduct further research of sustainable SCM from a change perspective, but possibly extending the focus to encompass multiple levels beyond the individual unit of analysis. .

8.2.4 Summary of theoretical contributions

The table below summarises the theoretical contributions from this research at the two core levels.

Table 57. Overall thesis theoretical contributions

Level	Theory	Contributions
Inter-organisational relationships in SSCM	*Collaboration (Relational view)*	- **Relational framework tested in the context of relationship between large buyer and small suppliers.** - Identification of enablers, lack of enablers and barriers to collaboration in this context. - **Nuanced view of collaboration**, identifying the factors that support or, on the contrary, hinder a collaborative approach. - Relational view is an interesting framework to understand how SSC relationships are managed, but not be sufficient to understand all the factors at play in this context. - Relational view may be more suited to balanced relationships between large players.
	Power (RDT)	- **Limited amount of research adopting a power perspective in SSCM and much focus on positive aspects** - Identification of critical factors not captured by relational paradigm, i.e. dependence - **Extension and testing of RDT model in context of SSC relationships** - Dependence can drive compliance but highlighted the pitfalls of unilateral approach - Dependencies are restructured when taking environmental and social resources into account - RDT model needs further extension to capture the degrees of power imbalance and strategies
Individuals in SSCM	*Sensemaking*	- **Limited research on the behavioural aspects of SSCM and considering the micro level of individuals.** - Sensemaking perspective on SSCM, exploring issues of understanding of sustainability between cooperating parties in the SC and how this affects the practice of SSCM. - Importance of **working through the conflicts and ambiguities to progress towards sustainability** has been highlighted. - **Extension of sensemaking to inter-organisational context** - Role of power and emotions in sustainability sensemaking processes highlighted but downplayed in current sensemaking model
	Change agency	- Individuals across the SC contribute to the transition towards more sustainable practices in the SC by being catalysts, supporters or dissidents. - **In a SC, the interactions, either collaborative or confrontational, between the various agents in different positions shape the direction in which the sustainability agenda advances**. - Findings offer an emergent and collective view of the transition towards SSC.

8.3 Evaluation and reflection on impact

This chapter concludes with a question that is inherent to any action research project that was asked of me during my last conference presentation back in August 2013: *How would you define and assess the success of the change you researched/were involved in?*

The phrasing of the question in itself relates to the earlier discussion on the nature of change and agency in Chapter 7, and the distinction between a planned and liner approach versus a more emergent and fluid view of change. There is a fair amount of discussion in the literature about how to lead successful change and measure the effectiveness of change initiatives introduced. In this sense, the question entails falling back into the perspective that change can be managed or controlled in some way. In the previous Chapter, there was a table showing the existence of planned aspects of the change for sustainability in the relationships between PepsiCo and the growers. Those aspects are very much the tangible projects implemented by PepsiCo as part of their Performance with Purpose strategy. PepsiCo is monitoring the outcomes and progress achieved against those targets, and success or effectiveness is thus being measured.

There is however something problematic about attempting to assess the success of the change that has taken place throughout this research. As pointed out by Lozano (2013: 277), "it is fairly easy to identify organisational changes once they have occurred, but it is more difficult to analyse them whilst they are ongoing". In addition, the question of "the effectiveness of organisational change is a socially constructed notion" (Buchanan et al., 2007: 1080) and therefore what matters are the subjective individual perception and assessment of those involved.

With all this in mind, the way I would like to answer this question is concerned with drawing from my experience of change as a "practice of transition" towards relationships that are better suited to address sustainability – rather than offering an account about my role in making something happen (Gearty, 2009). Essentially, it is about assessing the quality and impact of this action research project. In Chapter 4, the trustworthiness and usefulness criteria that have guided my choices throughout the research process was introduced in order to address the particular research problem. By developing this quality framework, I had attempted to enable a piece of research that would ideally be academically rigorous, theoretically informed and relevant, and practically valuable. Coming to the end of the research and looking back at the criteria, I clearly identify the need to assess if they have worked, and notably address the question of the *usefulness* of this piece of research. In order to help me do this, I turn to the work of Bradbury, Reason and Marshall (Reason, 2006; Marshall & Reason, 2007; Reason & Bradbury, 2008) for assessing the quality in action research and the questions that their work naturally suggests answering.

8.3.1 How did this research make an impact in the world of academia?

This research has made an impact to the field of SSCM as it has contributed insights into how buyer and suppliers work together in the transition towards more sustainable practices. SSCM research to date has primarily focussed on exploring the "what" of SSCM practice rather than the "how", and this research fills in this gap. The specific theoretical contributions have been articulated in detail in the previous section.

Building on the argument that little research has provided qualitative insights into the actual implementation of SSCM, it is also possible to note that much SSCM research remains backward looking as most studies have reported on past SSCM practices or achievements rather than led the development of such practices. Authors have called for more participatory/action research to remediate to this problem. In this sense, the research has had an impact in the field of SSCM by providing a topical methodological contribution. Our project has adopted a longitudinal participative approach as a way of developing both academic and practical knowledge by bringing people together to explore issues and work towards solutions through all stakeholders' involvement. This participatory orientation aims to facilitate interaction between the different stakeholders and leave room for them to express their perspective on how to drive sustainability in the supply chain. This represents a relatively rare opportunity to be in contact with relevant stakeholders and be able to follow the implementation and evolution of the projects and relationships in real time and not retrospectively.

In terms of tangible outcomes from the research, I have written a number of papers based on this research, which have been presented at a number of conferences. Some of the papers are currently under review in ABS ranked journals for publication and one has recently been accepted for publication in Decision Sciences Journal, a high impact publication in the Operations Management community. The contribution and quality of the project has been recognised in various ways. In January 2012, I was awarded best 2nd year PhD poster in the Logistics and Operations Management Section at Cardiff Business School. In August 2012, I won one of three Doctoral Student Grants from the OM division of the Academy of Management. The same year I also received an additional £200

fieldwork allowance from Cardiff Business School after winning a best PhD poster award. In March 2013, I received the award for Best Paper with managerial implications at the Annual International Purchasing and Supply Education and Research Association (IPSERA) Conference.

The best paper award from IPSERA has actually led to the publication of a short abstract of the paper in the International Federation of Purchasing and Supply Management (IFPSM) newsletter, which is sent to procurement managers globally. We were also invited to publish a short and practitioner-oriented version of the paper in the European Institute of Purchasing Management (EIPM) Journal for Supply Excellence in October 2013. In terms of additional external impact, I have been involved in teaching a number of modules at Cardiff Business School at undergraduate, postgraduate and MBA levels. I have used the findings of my research to teach about relationships in supply chains and sustainability in the food industry more broadly. I have also been involved in the organisation of the SSCM Workshop that took place in June 2012 at Cardiff Business School and involved a number of top academics from the field and several practitioners. Since then I manage and contribute to the LinkedIn special interest group that was created after the workshop.

8.3.2 What may be the impact of the research in the world of practice?

In other words: what can managers beyond PepsiCo and the suppliers learn from this research? Sustainability is now part and parcel of management practice even if motivated, defined and implemented to various degrees. In industry, the number of sustainability professionals is rising and this research provides a better understanding of the work sustainability managers/advocates engage in at the supply

chain level. Certainly one needs to be careful about generalising findings from a single embedded case. However, it is possible to draw a number of lessons from this research that can inform managers working to implement sustainable practices within and outside their company's boundaries. This work has implications for understanding the dynamics of change efforts for sustainability at the SC level.

First, there are implications for buyers and SC managers seeking to advance the sustainability agenda with their small suppliers. Findings revealed that collaboration may be possible between a large buyer and small suppliers but is likely to be impaired by the differential in resources. A powerful buyer has the opportunity to enforce and monitor its sustainability requirements with suppliers. In addition, the ability of a buyer to understand and manage relationships among its suppliers is critical to advance sustainability.

However, there were indications that power may become a controversial tool for SSCM and impair further engagement for sustainability. Coercive power may only lead to compliance with minimum requirements because it affects suppliers' commitment (Boyd et al., 2007; Handley & Benton, 2012), and suppliers within the same network may develop a sense of solidarity against the buyer.

Power imbalance can make it difficult to balance economic with environmental and social goals in the SC. An unanticipated consequence of commercial buyer power can mean that the long-term economic sustainability of smaller suppliers is undermined. While large companies may have access to more resources to engage with the sustainability agenda, small firms have a critical role to play in ensuring that sustainability goals are met. They often constitute the link between the large company and critical environmental and social resources and also are connected to other parties in the network. Managers need take into account the

responsibility held by small firms in order to develop appropriate risk- and value-sharing strategies.

The evolution toward a relationship for sustainability requires aligning commercial and sustainability goals, as well as acknowledging that dependence on suppliers increases due to the imperative of managing environmental and social resources. It is important for managers to understand the sources of power and dependences in their SC for power to become an effective tool to advance sustainability.

In recent years, the emphasis has been on providing economic justifications to the corporate engagement in sustainability (i.e. building the business case) but little has been done to explore the social mechanisms at play in driving sustainability in practice. Stakeholders' engagement is a major concern for managers working to advance the social and environmental agenda of their companies. Adopting a sensemaking approach allows understanding the variety of perceptions and attitudes to sustainability and how to appeal to the different value-systems and understandings. In addition, managers must remain aware of the issue of empowerment of stakeholders to created animated sensemaking processes (Maitlis 2005) – but also of how to accommodate the plurality of views and bring a consistent – rather than fragmented – way of addressing sustainability challenges.

8.3.3 What challenges have arisen and how have they been addressed?

The main challenges of this type of engaged research primarily lie in the sensitive position of the researcher as an insider/outsider and the change orientation of the project. Early on, some individuals within the supplier organisations were wary of my role and expressed their concerns about whose interests I was here to

defend. It was therefore important to clarify since the beginning that I was acting as a third-party with no vested interests. Beyond the political aspects, the theme of the research was particularly emotional and as a researcher I had to deal with the existing tensions feelings of dissatisfaction with the relationships. The workshops enabled creating a platform for these emotions to be expressed more openly.

Some of the managers within PepsiCo were initially slightly hostile to the research as it was critical of the way the relationships with the suppliers had been approached on questions of sustainability. I did emphasize that findings from this work were not to be taken personally and by seeking contributions from these managers on how the relationships were to move forward, their initial adverse feeling dissipated. This type of research approach is still not adopted widely in operations management and this can be a difficult aspect for young researchers. However, with the support from the supervisory team both at Cardiff and at PepsiCo, what was initially perceived as a barrier has become my personal trademark. In addition, the EREBUS network has provided the opportunity to meet and interact with other researchers in similar positions.

Overall, it is clear that conducting AR in the context of a SC is challenging and the workshops were designed to overcome this. The time and resources needed to actually be involved within different organisations to support change are significant and this may limit the feasibility of such projects. As an action researcher, one is bound to wonder if there will be lasting change from the research or if things will revert. It is therefore important to discuss with the research participants who will take ownership of the work once the research ends and explore potential avenues for future collaboration. From the perspective of research participants, the end of the research may be an unsettling experience as they had put a lot of expectations, and

hope, on the collaborative experience. Efforts have been made to maintain contact with the research participants and potentially explore further research opportunities.

8.3.4 How has this work demonstrated practical value and been rooted in relational practice?

The practical value of the research aims at supporting the development of better management practices for the implementation of sustainability practices in a supply chain involving PepsiCo and their growers. This work has definitely contributed to creating connections and experiences. It has introduced a new form of reflective dialogue at the individual and inter-organisational level that has supported the development of an awareness of what better relationships for sustainability may look like. In this sense, it has contributed to increase the capacity of the research participants for appropriate action and their ability for self-awareness in the context of their business relationships. Participants have been able to reflect and articulate their conception of a sustainable future. The value of the research to the participants themselves is evidenced through their expressed desire of continuing this type of work beyond the scope of the PhD, but also through their visible emotional reaction at the end of the process.

What has been achieved in terms of practical value is clearly linked to relational practice and building a collaborative and communicative space. In the last three years, I have worked alongside a company and their suppliers while at the same time being affiliated to an academic institution. I have found myself more often than not referring to my status as ‘in limbo’ as I was straddling two worlds. I have attempted to build connections with the people I have worked with. The relationships that have been built, and have formed the crux of this research, have been characterised by trust and respect and have demanded that efforts be put in

developing and maintaining them. At the end of the research, I have left the participants with some tangible outputs of the work accomplished and the intangible learning acquired through the workshops. I am hopeful that the dialogical process started can be viewed as contributing to building infrastructures for the future. I have learned to thrive in my 'in limbo' position and discovered that more than being a difficult situation to handle, it has allowed me to develop my skills as an action researcher, gain increased confidence and self-awareness.

8.3.5 How has the research contributed to opening a collaborative and communicative space and supported the development of future infrastructures?

The value of the research to the wider society lies primarily in the ways in which the research has enabled the creation of communities of inquiry along the supply chain and exploring individual and collective contributions to the sustainable development agenda. The question of relationality at the institutional level is a trickier aspect to address and is certainly less salient from the research presented in the thesis. Although carried out with the intentions of bringing learning to other large organisations working with small suppliers in the food sector and others industries, the scale of the project has remained embedded to the context of PepsiCo and particularly its SC for potatoes. This is perhaps because relationships need to be built first at the more local and individual level before being able to scale up. It is nonetheless possible to see how the learning from this project may ripple to a wider context. Thanks to this project, I have been able to participate alongside PepsiCo UK to the meetings of the *Cool Farm Institute,* which gathers several large organisations such as Unilever, Tesco and Heineken around the development and implementation of a tool to measure carbon emissions on farms (i.e. the CFT). Developing contacts with these companies has opened avenues for further research. The collaboration

with PepsiCo UK is ongoing as more workshops are scheduled for early 2014 and I have been invited as a regular contributor for their new web platform discussing their sustainable agriculture work, The Farmers' Hub, which reaches out to a wider agricultural community.

8.3.6 How has the research been inclusive of many voices and ways of knowing?

Finally, on the question of integrating multiple voices and ways of knowing, there is a clear linkage with the presentational form chosen for this thesis. First, second, and third person accounts have been weaved in the narrative of the research in order for the reader to gain a fuller picture of the dynamics at play. This is a conscious effort to go against the conventions about academic thesis, which give primary value to propositional knowing, and experiment with another form of presenting research. Although I am aware that some voices and theories may now seem to have prevailed, through the practice and writing of this research I have attempted to highlight the practical implications and address questions of power and bias. Deliberating whether this has been a successful enterprise rests with the reader.

Chapter 9 – Dénouement

As a reader, one expects at the end of every story to find the main issues resolved and the situation of the protagonists settled. There is always a feeling that despite it being the end, when we close a book or finish watching a film, things run their course without the reader or the observer. This thesis has been mainly about relationships: relationships between individuals and between organisations, in attempting to achieve some harmony between systems, economic, social and ecological. It is customary for tales about relationships to end with the phrase "And they lived happily ever after". The truth is reality is not as simple as fairy tales had us believe. The main problem with such a statement is its certainty. It is a comforting way of saying that no questions should be asked and we should assume that from then on, all goes for the better. This final chapter is not about happy endings. Instead it offers the necessary conclusion to over three years of work in the field and reflections as I leave it. The overall research question is answered, reflections on form and practice are presented, and limitations and future research are discussed in the next sections.

9.1 A drop in the ocean: Answering the overall research question

At the very beginning of this thesis, in Chapter 1, I described the overwhelming and intricate challenge that sustainability represents and sometimes the difficulty to see one's work in this context as making much of a difference. In this sense, this thesis is a drop in the ocean of research that addresses the sustainable development agenda. However insignificant this research may seem in the grand scheme of sustainability, it has had some impact and value for those involved and for

the broader field of sustainable SCM. This has been fully described at the end of Chapter 8.

Here, the intention is to try and summarise the answer to the overall research question that was first stated in Chapter 2:

> *RQG. How can SSCM be facilitated through the relationships between a large customer and its small suppliers?*

Considering the decision to structure the thesis around the different cycles of inquiry, it may not be evident to pull out the global picture of how the findings presented in the various chapters contribute to answering RQG.

One key takeaway from this research is that size does not matter as much as emphasized in the literature. There are less obvious factors that come into play when attempting to build a relationship for sustainability between a large customer and their small suppliers. At the inter-organisational level, the relational capital acquired through the relationship will positively influence the willingness of both parties to engage on questions beyond the usual commercial agenda. However, in order for the SC to become truly sustainable both the large customer and small suppliers must acknowledge where the boundaries of their responsibility lie. While the large customer may feel an obligation to drive the sustainability agenda, they are likely to face resistance from the suppliers when adopting such a unilateral approach. On the other hand, the small suppliers must be able to recognise their level of power and expertise over specific environmental and social issues. Finding appropriate formal relationship mechanisms to ensure this transition is not evident. Putting in place informal supporting mechanisms, such as the workshops experimented in this research, can help address some of these issues.

At the micro level, findings reveal the dynamic and political process of moving from a traditional commercial relationship to one that encompasses sustainability issues. In particular, discussions with the various stakeholders have highlighted the importance of values and emotions in driving change for sustainability in a supply chain context. The role of individuals must not be overlooked in SSCM and facilitating the transition to a SSC very much depends on the engagement of the relevant agents in the process.

The intricacy of the phenomenon under investigation has led to drawing on a wide theoretical and practical knowledge base. The result is that the research has contributed at a number of theoretical levels as well as in practice. The theoretical and practical implications of the research have been discussed in details in Chapter 8. Overall, this research provides greater empirical insights into the process of developing and implementing sustainable practices in a supply chain. The findings of this research are helpful in moving towards a more multilevel understanding of SSC relationships. The transition of a supply chain into a sustainable supply chain is guided and led by the collective effort of the network of actors involved in the relationships that make up that supply chain and the quality of this effort depends on their capacity to relate to each other.

9.3 Reflecting on form and methodology

As the concluding chapter of this thesis, there is an opportunity to reflect upon the way in which the research has been conducted and how it has been presented to the reader, and upon the learning from a first-person perspective.

While writing this section, I cannot help but recall extracts from Peattie (2011) that I had read a couple of years ago, and actually shared with the collaborators at PepsiCo. He writes:

"Ultimately, and at the risk of being accused of aggrandisement, sustainability social scientists have to be visionaries as well as heretics." (2011: 31)

"Instead of a conventional career path as paradigm takers, they need to be willing to try to be paradigm breakers and makers" (2011: 32)

The unconventional form taken by this thesis is certainly a reflection of the stance I have taken as a sustainability researcher. Following the recommendations of Marshall (2008), a level of congruence between the research topic, research design and the presentation of this thesis has been sought. The resulting monograph addresses all the aspects that belong to more traditional academic pieces, and as such fulfils its goal in being submitted towards to completion of a doctorate degree. The thesis has been a means to tell and reflect upon the collaborative research story between myself and the participants with the particular intention of making the action research process transparent and improving the usefulness for all those involved.

The most striking difference of the form taken by this work is the purposeful decision to reintroduce the researcher in the research narrative as a fully emotional and intentional actor. This is where I have embraced the notion of connectedness and relationality from action research but also have attempted to 'be the change that I want to see' (Newton & Parfitt, 2011: 85). This has been the realisation that a transition towards supply chain relationships that are more sustainable requires both heart and head (Newton & Parfitt, 2011).

This has been a challenge as a practice and has led to much learning from a researcher's perspective. Namely, I have learned the importance of: finding a balance between the standards of academia and following the natural course of engaged research; not losing myself in the research and taming my natural tendency to avoid conflict and to try and please everyone; learning to discern my own views, be critical of them and remain aware of their influence on the research process; and finally, seeking connections and meaning in my work.

In terms of broader methodological implications, lessons can be drawn from the project experience about the application of AR in SSCM. There are a number of advantages and challenges, as previously discussed in Chapter 8, to the practice of AR in particular in the context of a SC. Researchers and practitioners need to remain aware of these when deciding whether or not to conduct an AR project. They are summarised in Table 58 below.

Table 58. Advantages and challenges from applying AR in SSCM (source: Author)

	Advantages	Challenges
Customer firm (large)	Engagement in research, access to theories and models Change supporting strategic direction Supports other initiatives Reflect critically on practice	Short-term engagement on issue without long-term change Strategic direction change Suppliers get a voice Wary of critical view of researcher What happens next?
Suppliers (smaller)	Gives a voice Democracy Reflect on practice Access to research, theories and models	Veiled power What happens next? Wary of research agenda View of researcher as "knight in shining armour"
Researcher	Part of change Access to deep qualitative data Not restricted to pre-defined themes Learn to deal with sensitive issues and manage relations	Managing expectations and political aspects Address ethics and questions of engagement Needs additional justification in academic community Feeling lost or in-between Ending the process and future of work done
SSCM field and future research	Much research focussed on activities of large buying firms, AR provides a more egalitarian view of SSCM Creative ways to include organisations in SSC Forward-looking research Opportunity for novel theory testing and building Impact & teaching cases	Manage engagement alongside multiple organisations: can AR be applied beyond the scope of one organisation?

9.4 Limitations

Although the questions of quality and scope have been addressed throughout this thesis and more specifically in Chapter 4 and 8, it is important to acknowledge the inevitable limitations associated with the research presented. Despite the previously highlighted efforts to make the research process transparent, support the arguments with evidence, include multiple voices and respect the emergent nature of the research, the study and design present certain constraints.

A first limitation concerns the possibility to replicate and even scale-up the research. The research design and specific methods have been presented through the various chapters in this research in order to facilitate the potential replication of the methodology, and the workshops in particular. However, it has been acknowledged that there may be some difficulties when attempting to extend this method to wider groups of participants, for example in the context of extended and geographically dispersed SCs. Considerations about the resources that would be needed to scale up this kind of approach are required. Certainly AR presents limitations compared to other methodologies such as traditional case studies and surveys regarding replication but also generalisability, as the findings are contextual and embedded.

Triangulation efforts have been highlighted previously, and throughout this thesis I have shown how different types of evidence have been captured. Much emphasis has been put on opinion and behavioural evidence but there are extraneous circumstances that may also have had an influence on the research. The initial exploratory fieldwork as well as details about the specific sector of the research allowed for a careful consideration of these surrounding contextual issues. Nonetheless there are obvious limitations to a single in-depth action research case in terms of generalisability. The research has been conducted in the context of the food industry, which presents relatively specific features with regard to sustainability and power/trust relationships between buyers and suppliers. It would beneficial to extend the research to include collaborations between companies in different industries, and even draw comparisons between the public and private sectors, or between overseas buyer–supplier. This may lead different and complementary insights.

There are additional concerns regarding homogeneity of the group of research participants who have been involved in the research. This also relates to the issue of

generalisability. Working with groups of participants from such a sector also means that there has been a predominantly male audience in the research. This may have had an impact on how the project and specific activities were received as well as on how I was perceived as an external female researcher.

Despite efforts to relate the insights gained from the field to relevant theoretical insights and engage in theory testing, the value of other theories must be recognised. The power and collaborative paradigms are only two lenses from which to analyse the relationships between PepsiCo and the growers at the inter-organisational level. Given the practical context of the research and the gap in the existing literature around imbalanced relationships, they were deemed particularly appropriate for this cycle. Similarly, at the micro level, the fit of sensemaking and change agency was presented. Additional insights may have been gained by applying different theoretical perspectives, as highlighted in Chapter 8. Furthermore, the research has focussed on two levels of analysis of relationships for sustainability: inter-organisational through the buyer-supplier-supplier triad, and the role of individuals. Other levels could have been explored, such as the supply network or the team or functional level, which would have led to gaining complementary insights.

Finally, the research described in this thesis has involved multiple points of contact with the research participants but it is difficult to assess whether there will be longitudinal effects. This point also relates to the constraints associated with engaged research, where the researcher brings a new and external perspective and initiates new approaches. This may affect the potential for research participants to take ownership of the approach once the researcher has left. The role of the researcher as a facilitator was a central part of this research project and makes it unique in many ways. The idiosyncratic influence of the researcher on the outcomes must be

recognised and care must therefore be taken in assuming that a similar initiative, in a different context and without the presence of the facilitating researcher, would necessarily lead to comparable achievements.

9.5 And what the future holds…

So there it is, after having described what has been, it is time to think about what could be from this research.

As mentioned in Chapter 6, 7 and 8, the nature of the project has raised questions about continuity and what will happen in the future. The contacts with both PepsiCo and the growers remain and there are plans to discuss the continuation of the research over the summer 2014.

A more conventional way of looking at the future is to consider the various potential research avenues that have emerged from the research. This research has actually opened several new lines of inquiry that I consider exploring in the future. Some of these lines of inquiry relate to issues that have already been touched upon in the thesis but would benefit from more in-depth investigation. Others have simply burgeoned from the research process, through the engagement with the topic and the research participants. Some examples of topics and questions include, but are not limited to:

- The evolution of procurement and contracts for sustainability:
    - How can participatory research support the evolution of procurement skills to deal with sustainability questions and manage supplier relationships in this context?
    - How might contracts for sustainability look like? What would they include and exclude?

- SMEs adaptability and responsiveness to change for sustainability:
    - How can SMEs develop capabilities to respond to their buyer's sustainability requirements?
    - How does entrepreneurship and family values affect SMEs' ability to address the sustainability challenge?
- Networks and sustainability:
    - Why might competing companies collaborate to achieve sustainability? What forms do these collaborations take? What are their benefits and limitations?
    - How can small firms make the most of their network relationships to become more sustainable?
- The role of sustainability narratives and images across SCs:
    - Is there a place for storytelling and narratives in the change towards SSC?
    - How might stories support the transition towards more sustainable practices and behaviours across SCs?
- Values and motivational aspects of driving sustainability in SC relationships:
    - What is the role of individual vs. corporate values in driving or hindering the change for sustainability in SCs?
    - How do individual values impact the implementation of sustainability initiatives in SC relationships?

The participative nature of this research raises questions in terms of the impact that we have had on the change process as described in Chapter 7 & 8. Hence, it would be interesting to conduct a follow-up study in a few years to examine how

things have developed in the long-term. Particularly with regards to the question of agency, it would be interesting to consider what happens when agents leave and how the role of agents may evolve.

Efforts should be made to continue theory testing and development in SSCM, for example by developing a more thorough understanding of the conditions and antecedents that are conducive or on the contrary that are less favourable to collaboration on sustainability between organisations. A more thorough understanding of the role of individuals in this context could be gained through an application of theories such structuration theory (Giddens, 1984), agency theory or psychological theories as identified in Chapter 3 and 8.

Finally, more participatory research approaches could assist in helping organisations identify relational antecedents they can build upon to develop suitable relationship-management strategies for sustainability as well as support the evolution of functional roles to encompass sustainability issues. This would contribute to respond to calls for more forward-looking research in the field of SSCM (Pagell & Shevchenko, 2014).

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Appendices

Appendix 1 – Indicative questions for initial interviews

The following questions would certainly be appropriate for the context of an interview, but I thought they could be used as starting points for discussion and simply to trigger reflection. Key words have been highlighted for clarity purposes, and so that you can scan through the main themes I was looking to explore.

1. How would you define "sustainability"? What does it ***mean*** to you?
2. ***Practically***, how can sustainability be achieved? (e.g. from PepsiCo, broader reflections?)
3. What do you think are the ***sustainability-related issues*** that have most impact on PepsiCo?
4. How has PepsiCo addressed environmental ***risks***?
5. How does PepsiCo ***communicate*** its sustainable strategy/orientation?
6. What is the place of the sustainability team within PepsiCo UK? How would you describe its ***position / role / responsibility / scope?***
7. *PepsiCo's sustainability initiatives*:
    a. What have been the major ***sustainability-related initiatives/projects*** carried out by PepsiCo UK in recent years?
    b. Which ones do you think have been the most successfully implemented?
    c. Which ones do you think have presented more difficulties/***challenges***?
8. *Supplier engagement:*
    a. How would describe PepsiCo's ***relationship*** with its suppliers?
    b. How have they been ***engaged*** in the path towards more sustainable practices?
    c. What are the challenges when working/communicating with suppliers on sustainability?
9. Based on your experience, how do you see PepsiCo's approach to sustainability ***evolving*** in the ***future***?
10. What are the ***challenges (current/potential – external/internal)*** to addressing sustainability issues/ and implementing a sustainable strategy?

Appendix 2 – Full list of papers included in the literature review

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Appendix 3 – Introduction to research project

RESEARCH PROJECT ON SUSTAINABLE SUPPLY CHAINS

PepsiCo working with agricultural growers in the UK

This research is an ESRC funded project, part sponsored by PepsiCo UK, which offers the opportunity to engage with PepsiCo and their agricultural growers in the UK on a project exploring their relationship on implementing sustainable practices and balancing environmental and social issues with economic performance in the supply chain.

The focus of this project is on investigating how sustainable supply chain management can be facilitated through the interactions between a large buyer and small suppliers.

Through rounds of interviews and workshops, this research brings together PepsiCo's and the growers' perspectives on the question of sustainability in order to map the current situation and articulate ways to improve cooperation to build a more secure supply chain.

The research will develop our understanding of the economic and social aspects of implementing a sustainable supply chain and help identify drivers and barriers to success, which both PepsiCo and the growers can build upon to ***share responsibility on economic, environmental and social issues, create knowledge sharing opportunities, and engage in a sustainable business venture.***

Appendix 4 – Interview protocol

A. General/Background

A.1 Background on organization, position, job title, and responsibilities.
A.2 What is your understanding of sustainability and sustainable supply chain management in particular?

B. Power/Dependence

B.1 Criticality

B.1.1 How critical is this buyer/supplier in your overall business (commercially and operationally)?
B.1.2 (Supplier) How much does this buyer represent (%) in your total turnover?
B.1.3 How much does the relationship with this supplier/buyer affect your environmental and social performance?

B.2 Scarcity

B.2.1 (Supplier) How many alternative buyers (existing or potential) do you have for this product?
B.2.2 (Buyer) How many existing and potential suppliers do you have for this item?

C. Collaboration

C.1 Relationship History

C.1.1 Can you tell me more about your relationship history with this buyer/supplier?

C.2 Trust

C.2.1 How reliable is this supplier/buyer? (Examples)

C.3 Shared values and goals

C.3.1 How much does this supplier/buyer support your economic, social and environmental goals?
C.3.2 How do you perceive this supplier/buyer's understanding of sustainability and overall strategy? Is it different from yours?

C.4 Communication

C.4.1 How often do you communicate/interact with this buyer/supplier?
C.4.2 What topics do you usually discuss?
C.4.3 Could you describe how you communicate with this buyer/supplier about sustainability?

C.5 Commitment

C.2.1 What motivates as a supplier/buyer in this relationship?
C.5.2 How committed are you to working with this buyer/supplier to implement a sustainable strategy?
C.5.3 Do you invest specifically in this relationship to facilitate the implementation of sustainability initiatives?

C.6 Participation

C.6.1 Could you describe how decisions about the planning, development, and implementation of sustainability initiatives are made?
C.6.2 How are goals regarding sustainability set?
C6.3 How much two-way engagement is there on sustainability issues?

C.7 Continuity/mutual expectations

D.1 What do you expect now and in the future from your relationship with this buyer/supplier regarding sustainability in particular?

D.2 How essential is your relationship with this buyer/supplier in the future success of your business?

D. Relationship Management for SSCM

D.1 Contractual arrangements

D.1.1 Could you describe your contractual arrangements with this buyer/supplier? (Length, terms, negotiation)

D.1.2 Are there any sustainability requirements in your contract? (Examples)

D.2 Implementation process and monitoring

D.2.1 Can you give examples of sustainability projects you have been involved in with this buyer/supplier?

D.2.2 In general, how are sustainability initiatives implemented and monitored?

D.3 Problem resolution

D.3.1 Can you give me an example of sustainability-related project that has been particularly challenging?

D.3.2 In general, if there is a problem, how is it addressed? (Examples)

D.4 Sharing of benefits and risks

D.4.1 (Buyer) How do you support the implementation of sustainability projects with this supplier?

D.4.2 (Supplier) How are you supported to implement sustainability projects with this buyer?

D.4.3 Can you give me an example of a particularly successful initiative?

D.4.4 How has working on sustainability with this buyer/supplier influenced your business? (Performance, financial, nonfinancial aspects)

D.4.5 How has working on sustainability affected your relationship?

E. Evaluation/Conclusion

E.1.1 Overall, how would you evaluate your working relationship with this buyer/supplier regarding sustainability?

Appendix 5 – Workshop method details

5.1 Workshops facilitation

I organised and run the first workshop in collaboration with a professional external facilitator. The role of facilitators in supporting action research and sensemaking processes from an external viewpoint has been stressed by a number of authors (Argyris, 1993; Lüsher & Lewis, 2008). In particular, the facilitator can help engage in deeper reflection and reframing by using questioning techniques. In the case of this research, the external facilitator was picked because of her familiarity with participative workshop methods and her expertise in organisational change for sustainability. Considering that the stakes were high in running the workshop as a first-time action researcher, learning from the experience of the external facilitator was crucial. While I remained the primary designer of the content and process, she brought an external eye to the issues and fostered the reflections of participants and myself by using different questioning strategies. During our first preparation call, she asked me what I was seeking from her with this work and I responded: guidance, reassurance and support. By making me reflect on my thoughts for the workshop, she helped focus the flow and content. During the workshop itself, her role primarily revolved around supporting me to create an open atmosphere for discussion and collaboration, while preserving the confidentiality of the issues brought up in conversations. Having learned extensively from the first workshop, I felt confident enough to run the two subsequent ones on my own.

5.2 Key workshops activities and instruments

The table below gives a clear description of each activity or instrument that were included in the workshop designs. It must be noted that consistent with principles of AR, the activities and instruments were reviewed and adjusted throughout the process, using learning from the workshops themselves about group dynamics and suitability for the research. The workshops were designed with the underlying twin purposes of exploring the research questions and of conducting research of practical value for the participants. The activities and instruments described below were chosen to fulfil these goals, and were included in the different phases of the workshops (research feedback, reflection and discussion, analytical work on change).

Table 59. Workshop activities and instruments

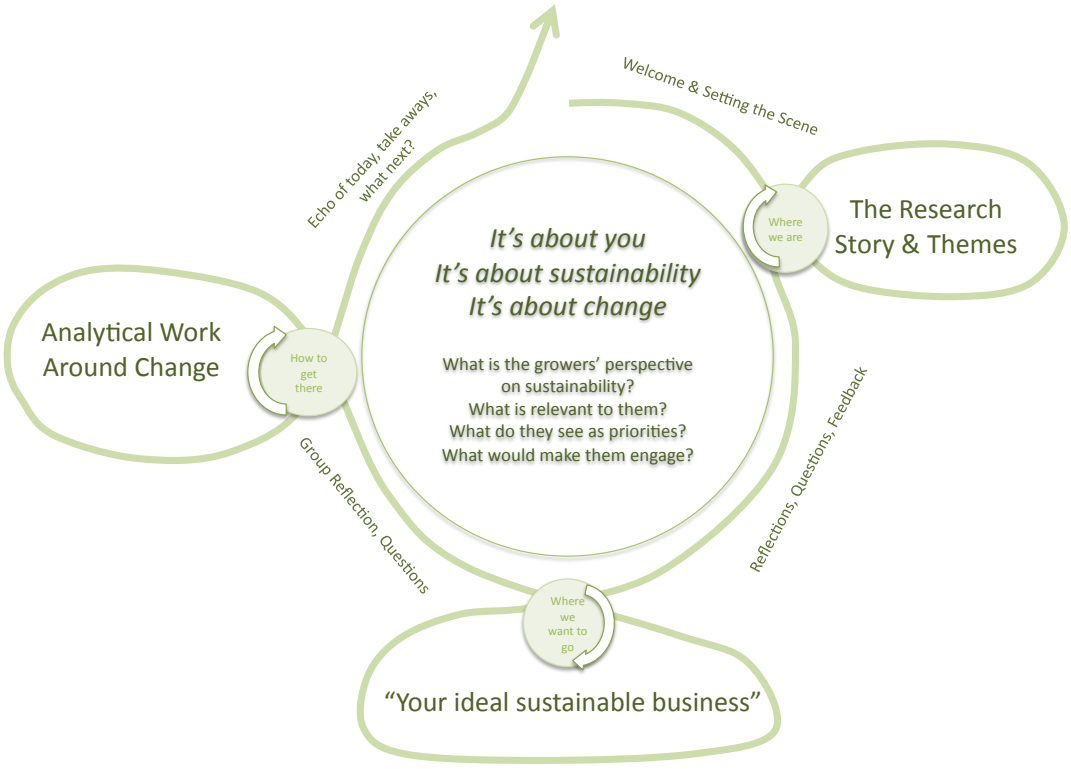
Activity/Instrument	Description	Research and practical value
Constellations	Idea of this activity is as a group the participants map themselves without using words but using space. They map themselves according to an imaginary axis (or division of the room) as indicated by facilitator and in response to questions. Examples of questions: - Organise yourselves according to how far you've come today - Map yourselves according to emotions about the future of the planet - Map yourselves according to how much of a difference you think you can make with regards to climate change	Break the ice activity Get an initial sense of group dynamics Surface key aspects of sensemaking and change (role, perceptions of issues,etc.)
Positive and Negative	Activity to reflect on the year that had passed since the last workshop. Participants were asked to each tell one positive and one negative story, event, feeling or anecdote that had happened over the last year. They were also prompted to reflect on these with regards to their relationship with PepsiCo/ the growers.	Stimulate critical reflection on the happenings of the year and on relationship in this context Engage in appreciative and construction thinking Capture sensemaking of events involving the growers and PepsiCo
Mapping expectations & questions	Using flip charts, the researcher asks the workshop participants to tell their expectations for the day and for the work in general and makes a list, which can be used at the end during the wrap-up	Get a feeling of participants' expectations and worries, willingness to engage and possible core topics Involve the participants in the workshop flow and adapt activities/timing accordingly.
Researcher presentation and reflection	Feedback of research findings to the participants using slides with quotes. The reflections from the researcher are discussed as part of the slide presentation and throughout the workshop through questioning and summarising key points of the discussion (or what the researcher perceived as key points).	Gather feedback from the participants Stimulate reflection and sensemaking on key issues Facilitate the discussion and go beyond the non-constructive comments/reactions

Group discussions	The entire group discusses and reflects on the research presentation, the activity just finished or simply on the questions /issues raised by others. Group relfection and discussion is included throughout the workshops, mainly after each main activity.	Gauge collective response to research findings and collective sensemaking Let the participants react and express themselves freely on the different issues
Individual reflective sheets	Participants are given a few minutes after each theme in the research presentation to write down they reactions and thoughts around 3 questions: What is your reaction when you hear that? Is it familiar? Does it remind you of something? What is most striking to you?	Helps the participants to pause and reflect individually and gether their thoughts prior to the group discussion Sheets were collected after each workshop and support exploration of individual sensemaking as well as identification of commonalities and differences of attitudes between participants and groups
Visioning through drawing with growers	Creative activity aiming at looking at the core question of change for sustainability in a different fashion. Growers are asked to individually produce a drawing that captures what sustainability means to them and in their business, to have a sense of projection and vision. The only requirement is that they need to include themselves in the picture. Posters are then pinned on the wall and each grower presents his work and others can ask questions and share their feelings.	Attempt to capture a different type of energy around sustainability and appeal to non-rational, more creative and visual part of sensemaking By focussing on drawing the ideal sustainable business, the "where I want to be" aspects of sustainable change is addressed Get a stronger sense of growers' meanings of sustainability
Auction-style analysis and prioritising	Participants are asked to individually identify enablers and barriers to a relationship for sustainability and write them down on sticky notes that are then put on the wall. Enablers and barriers are differentiated with plus and minus sign. The issues were then grouped in 6 clusters, all encompassing both negative and positive aspects. The findings from this activity from the 1st workshop were then used during the PepsiCo workshop, where participants discussed their views of the elements identified by the growers, added their own and wrote on sticky notes the ones they considered as most important	Understand the key issues for the participants Make the participants visualise those issues and build on them to prepare the action plan Distinguish between groups in terms of what they view as important for the relationship to change

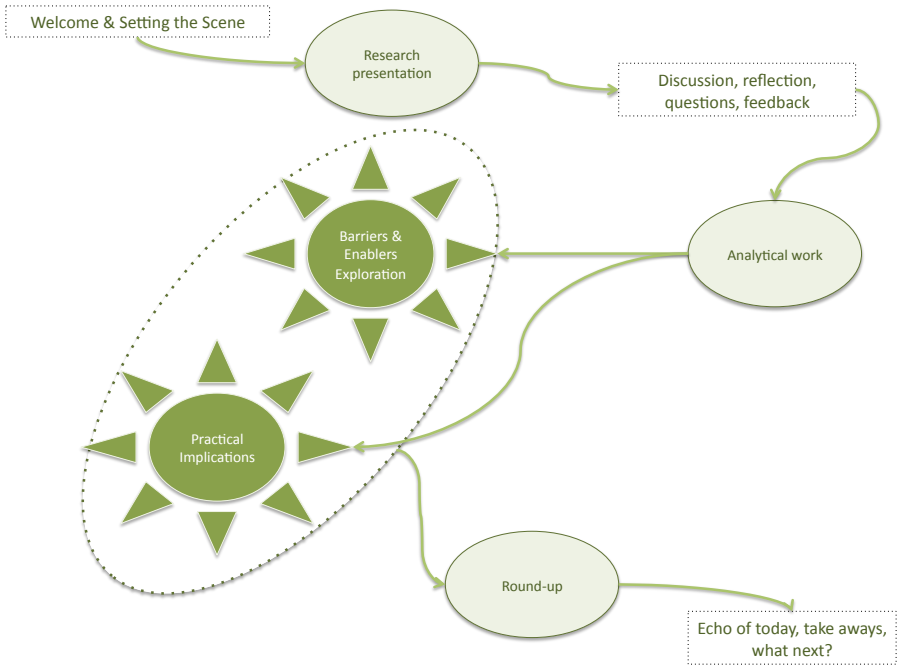
Responding	This activity was used to break the flow of group discussion by making participants work in smaller groups on specific tasks, including writing on flip charts the questions they had for the other group, their responses to the questions, their views on the other group's ideas. Each team was then asked to present their work back to the group.	Break the group dynamics by splitting individuals into pairs Analytical work to explore aspects of change and priorities Facilitate a dialogue between the groups
Action planning	Activity to think about how to address – or make the most of – the barriers and enablers highlighted previously led to building a list of potential actions/activities that could be put in place.	Practical work on change and providing tangible goals to achieve
Wrap-up	Activity at the end of each workshop to link the different activities of the day, look back at the expectations and questions expressed at the beginning, share feelings about the day and list what the participants would like to see happening.	Clarify the main takeaways from the day Assess the impact of the workshops and research in general on the participants
Feedback sheets	Following the same model as the reflective sheets, the feedback sheets are an opportunity for the participants to express their thoughts, feelings and expectations at the end of the workshop.	Sheets were collected after workshop and helped reflect on role of researcher Get a sense impact of the activities and support the planning of future research

Appendix 6 – Workshops flows

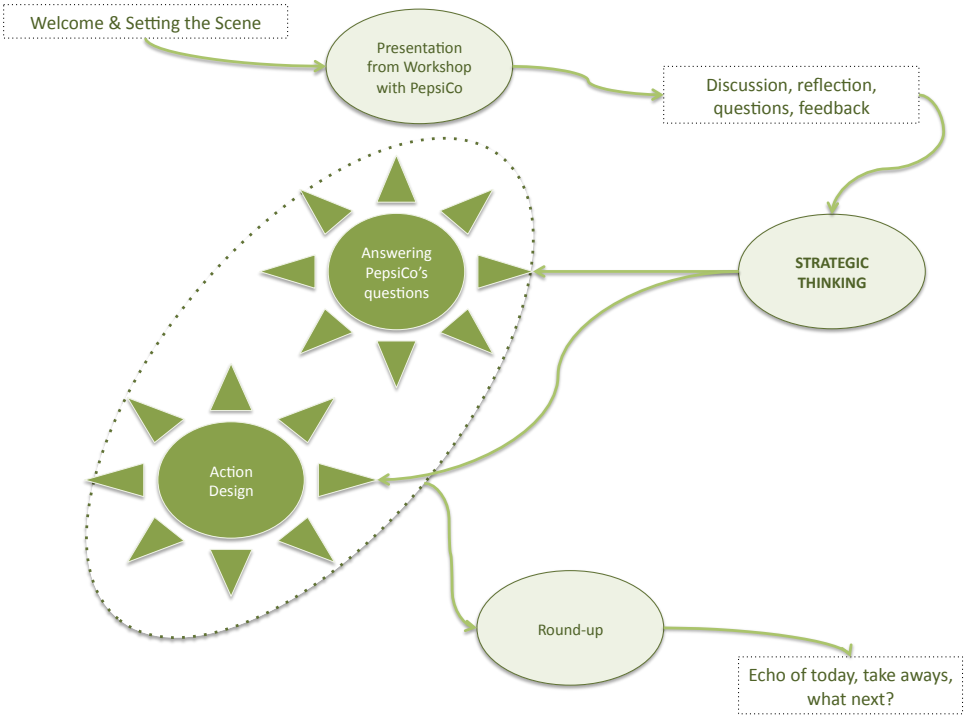
6.1 Workshop I – Growers



6.2 Workshop II – PepsiCo



6.3 Workshop III – Growers



Appendix 7 – Word clouds used in workshops

7.1 PepsiCo’s word cloud

7.2 Growers’ word cloud

7.3 Combined definitions word cloud