IIIEE Theses 2014:32

Eating our way to sustainability: Are European meat and dairy processors living up to our expectations?

Marianna Lena Kambanou

Supervisor

Oksana Mont

Thesis for the fulfilment of the
Master of Science in Environmental Management and Policy
Lund, Sweden, December 2014

Published in 2014 by IIIEE, Lund University, P.O. Box 196, S-221 00 LUND, Sweden,
Tel: +46 – 46 222 02 00, Fax: +46 – 46 222 02 10, e-mail: iiiee@iiiee.lu.se.

ISSN 1401-9191

Acknowledgements

The first person I would like to thank is my mummy,… if you hadn't invested in the early years, the ones that came before I even set my foot in school, by sitting down with me and helping me learn how to learn and nurturing my curiosity then I would never have got so far academically. Yours and Daddy's support has been constant. I am also grateful for the time you spent on checking and proofreading this thesis… And as a disclaimer, mummy hasn't checked the acknowledgement section!

Other people also contributed to the thesis in many practical ways. From the institute I would especially like to thank the intuitive Oksana Mont, my supervisor, the always helpful Birgitta Olofsson, the master of public address Per-Anders Borius, Håkan Rodhe my skiing instructor, and in the final steps Beatrice Kogg. Everybody helped get the thesis done 'outside the normal schedule'.

A big thank you has to go towards all the interviewees who made time in their busy schedules to answer my questions, especially Vera Söderberg from HKScan and Ulla Nilsson from Arla who met me in person, I truly hope that there is some useful information for everyone to be found in my thesis and that I might have made a very very small contribution to the way meat and dairy processors address sustainability.

As I am writing this paragraph, I mentally name it 'friends' and I simultaneously realize that there isn't enough space to write what I want to each or to thank all and maybe also this isn't the forum for it, but I am overwhelmed with warmth and happiness when I conjure you up in my mind. Dasha, Γιώργος ο κουμπάρος, Corey Σουλτζόπουλος, Julija & Mikael & Nicole, Χριστιανούλα, Τσιουμπρής, Anna & Helena, Sara Libera, Nicole, Sarah, Saemundur & Kristine, Μάγδα ευχαριστώ, thank you, tack!

My two brothers Laurence and Daniel who are eternal sources of laughter, my Långavecka family Uncle James, Aunty Suzanne and cousins Amelia, Oskar and Elysia as well as my life long pen pal Aunty Wendy are by default supportive of everything I do, no one could ask for a better family!

Of course there is one true hero in this thesis and that is Lefteris, he has been with me every single step of the way, e v e r y s i n g l e o n e …. and with every hero there is always a villain, in my case it arrived on the 18th of September 2013, graduation week, the sweetest most beloved villain in the world, who changed everything and sabotaged every attempt to write by keeping me perpetually awake (or maybe it was me who didn't want to put her down).

Finally though it was finished, what a happy day!

Abstract

In Europe, sustainability in the meat and dairy industry has emerged as an issue of great concern for society. Research and pressure centre on the agricultural component and little attention has been given to the processing industry despite the integral role it plays in the European meat and dairy supply chain. This thesis aims to fill this knowledge gap by identifying the current sustainability practices of the meat and dairy processors and comparing them to society's expectations in order to identify potential areas of improvement. Text mining of sustainability reports and web content was used to ascertain the current practices and content analysis of websites was used to identify the current expectations of society. Interviews with industry were used to determine the applicability and feasibility of the suggestions.

In Europe, there are some meat and dairy processors that do not visibly engage in any sustainability management. Based on the information from the companies that do engage in sustainability management the results for the two industries generally indicate homogeneity in sustainability topics, despite minor differences between meat and dairy processors and between mediums of communication. The research found that there is high involvement and wide coverage of environmental impacts within the processing plants and the challenge currently is to work with primary production, especially with greenhouse gas emissions, land use and biodiversity issues. Economic issues were found to be underrepresented and the corporation should go beyond the strict confines of financial aid to enhance its role in sharing value, supporting community and providing resilience to economic shocks. Most social issues are also comprehensively covered in the meat and dairy industries' sustainability disclosures; although companies need to make sure that they have implemented zero- tolerance policies for corruption, anti-competitive behaviour and human rights abuse. Facilitating consumer access to affordable and nutritious food is identified as an area requiring improvement. As regards sourcing, it became clear that supply chain responsibility is being integrated into the three sustainability pillars. In this area there are opportunities for dairy processors to work more on animal health and welfare issues and for meat processors to collaborate more holistically with farmers.

Interviews conducted with industry confirmed the feasibility of the suggestions, although it is relevant for each company to use the information in the thesis to benchmark their specific practices against societal expectations and industry practices. The research also found that the use of words, headings and themes by different bodies can vary considerably in terms of content and this complicates the task of working towards uniformity within and improvement of sustainability practices.

Keywords: meat, dairy, processing, sustainability, society, expectations, text mining

Executive Summary

Introduction and problem definition

In Europe, sustainability in the meat and dairy industries is an issue of great concern for society because their produce is an essential source of protein and an integral part of the food chain that provides many with their livelihood. There are many environmental, social and economic challenges associated with the whole lifecycle of meat and dairy such as high energy consumption, food waste, land use, emission of greenhouse gases, food security, worker health and safety, animal welfare, consumer health, profit sharing and fair pricing and all companies involved have an active role to play in finding solutions. Research and government focus, though, has centred on the agricultural component and less attention has been given to the processing industry. This thesis maintains that the European meat and dairy processing industries can play a vital role in driving and coordinating sustainability initiatives due to their central position in the supply chain and the ongoing shift towards higher consolidation. Therefore, this research aims to fill this knowledge gap by identifying the current sustainability practices of the meat and dairy processors and suggesting improvements. This is carried out by comparing current sustainability practices to society's current expectations in order to identify potential areas of improvement and then these suggestions are assessed for their validity and applicability based on interviews with industry. The following two research questions were formulated to guide the thesis:

RQ1. What are the current sustainability practices in the EU meat and dairy processing industries?

RQ2. Based on current societal expectations how can the meat and dairy industries improve their current practices?

The findings in this thesis are of interest to companies seeking to make improvements to their sustainability management programme. They can either use the suggestions or compare their own practices against industry norm and societal expectations. Policy-making bodies and other stakeholder groups such as NGOs and other advocacy groups, which are pushing for change in these industries, can use the information in the paper to estimate the effectiveness of their current strategies.

Methodology

Initially, (1) a literature review was carried out in order to develop a better theoretical understanding of corporate sustainability and disclosure and to learn about sustainability challenges in the food chain and stakeholder influence on sustainability practices. The next part involved (2) using corporate sustainability disclosures in order to elicit current sustainability practices. To this purpose, text mining of company sustainability reports and web mining of relevant on-line information was undertaken; this step included conceptual ordering of terms into themes. This was followed by (3) a content and thematic analysis of online information concerning societal stakeholders in order to elicit their expectations and simultaneously a (4) comparative analysis of this information against corporate sustainability practices was conducted in order to identify legitimacy gaps and areas of improvement. Finally, (5) interviews with industry were used in order to discuss the feasibility of implementing the improvements.

Various academic and professional methods for evaluating different aspects of sustainability exist but there is no standard all inclusive one. In absence of a method that adequately addresses the research questions the author created and implemented the above method

which is grounded in legitimacy theory, the descriptive and normative view of stakeholder theory and a classification system for stakeholders. Stakeholder theory maintains that stakeholders influence a corporation's sustainability management programme and legitimacy theory supports that in order for an enterprise to have the right to operate, its values have to be in line with society's values. In this thesis the two theories are bridged by defining civil society as the most important stakeholder but acknowledging that there are others. Based on the stakeholder classification system three main societal stakeholder groups emerged: global society, national society and social groups and institutions. For the purpose of this thesis, the expectations of global society were elicited by using the OECD Guidelines for Multinational Enterprises, the United Nations Global Compact, the Sustainability Assessment of Food and Agriculture Guidelines, the Global Reporting Initiative Food Processing Sector Supplement, and ISO 26000; national society was represented by the EU and social groups and institutions by 27 consumer groups, NGOs and institutions that are active in the EU.

Current meat and dairy processor sustainability practices

The output from the text mining was terms that were taken raw and organized into themes. In total 29 themes are covered by the meat and dairy processors sustainability practices. These were grouped under the four sustainability pillars: environmental, economic, social and sourcing. Although there are some differences between milk and dairy processors as well as between mediums of communication, the results generally indicate homogeneity in the involvement of themes in sustainability priorities. The themes with the highest involvement are 'human health & nutrition', 'employee health & safety', 'product nutritional value', 'energy conservation', 'food safety' and 'food quality'. Some issues that are clearly important for specific industries are 'greenhouse gas emissions' and 'responsible sourcing' for dairy and 'animal health' and 'animal welfare' for meat. A little further down the line come 'local community support', 'waste, recycling & packaging', 'water conservation', 'raw materials', 'corruption' and 'collaboration with farmers' and then comes the following group: 'training & education', 'biodiversity', 'transport & distribution', 'benefits', 'financial aid' and 'diversity & equal opportunity'. Finally of lesser importance but still present are 'shared value', 'community investments', 'human rights', 'supply chain collaboration', 'responsible marketing', 'access to food' and 'labour-management relations'. The research also found that the use of generalized terms is more likely to occur on websites than in reports.

Suggested improvements and conclusions

The research found that there is high involvement and wide coverage of environmental impacts within the processing plants and the challenge currently is to work with primary production, especially with land use and biodiversity issues and in the case of meat processors, GHG. Economic issues were found to be underrepresented and the corporation should go beyond the strict confines of financial aid to enhance its role in sharing value, supporting community and providing resilience to economic shocks. Most social issues are also comprehensively covered in the meat and dairy industries' sustainability disclosures, although companies need to make sure that they have implemented zero- tolerance policies for corruption, anti-competitive behaviour and human rights abuse with special consideration being given to the matters of access to government funds and pressure being put on small industrial counterparts. Facilitating consumer access to affordable and nutritious food is identified as an area requiring improvement. As regards sourcing, it became clear that supply chain responsibility is being integrated into the three sustainability pillars and its importance should not be understated. In this area there are opportunities for dairy processors to work more on animal health and welfare issues and for meat processors to collaborate more holistically with farmers.

Interviews conducted with industry confirmed the feasibility and applicability of the suggestions, and also the validity of using society's expectations as a method for assessing sustainability practices and identifying areas of improvement, although it was also pointed out that society within the EU differs so there are merits to approaching the issue from the perspective of national societies. The feasibility of the suggestions could not be evaluated against internal business priorities. Findings also showed that companies are at different stages of development of their sustainability practices with a large number of companies not reporting on any activities, so it is relevant for each company to use the information in the thesis to benchmark their specific practices against societal expectations and industry practices. The research also found that the use of words, headings and themes by different bodies can vary considerably in terms of content and this complicates the task of working towards uniformity within and improvement of sustainability practices.

Table of Contents

List of Figures

List of Tables

Abbreviations

CSR	Corporate Social Responsibility
CR	Corporate Responsibility
EC	European Commission
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GHG	Greenhouse gases
GRI	Global Reporting Initiative
IBLF	International Business Leaders Forum
ISO	International Standard Organization
LCA	Life Cycle Assessment
LT	Legitimacy Theory
NGO	Non-Governmental Organization
NPO	Not Profit Organization
OECD	Organisation for Economic Co-operation and Development
SAFA	Sustainability Assessment of Food and Agriculture
ST	Stakeholder Theory
TTIP	Transatlantic Trade and Investment Partnership
UNGC	United Nations Global Compact
WWF	World Wide Fund for Nature

1 Introduction

1.1 Sustainability in the meat and dairy industries

In recent years there has been a growing demand for sustainability. Companies are increasingly being called upon to go beyond their traditional role of simply making a profit and to take on new responsibilities as stewards of society and the environment and to contribute to the shift towards sustainable development (UNSDSN, 2014). Two industries under a lot of pressure to make this shift are the global meat and dairy industries.

These industries are an essential source of protein and other nutritious substances for humans and provide many with their livelihood. Meat and dairy products are also being consumed at an increasing rate by a growing global middle class. This is the result of two trends: population growth and the increase of the middle class (FAO, 2013; WEF, 2012). This growth in meat and dairy consumption is accompanied by a number of environmental, social and economic challenges. The whole life cycle of meat and dairy impacts heavily on the environment, causing greenhouse gas (GHG) emissions that lead to climate change, air emissions that contribute to acid rain and severe water and soil degradation (FAO, 2007; Miller & Spoolman, 2012). In addition, there are many social concerns that are attached to meat and dairy and its production and consumption. These concerns address animal health, welfare and ethics, human health, disease propagation, working conditions, distribution of scarce resources among populations (UNEP, 2012) and the dietary extremes of malnutrition and obesity (Buttriss, 2013). Furthermore, the economic prosperity of this sector cannot be understated, as according to the World Bank Data, the food and agriculture industry is the largest industry globally and the meat and dairy industries, which are experiencing growth and increasing turnovers, are a vital part of it. The economic vitality of this sector is important to an ever-increasing range of stakeholders and a major element in the global question of food security (Stokstad, 2010; UNEP, 2012). Meat and dairy are also the object of many growing trends in western society such as vegetarianism, veganism, diets involving specific amounts or cuts of meat, local production support and animal ethics campaigns (Henning, 2011). Issues of concern surrounding the industry are especially strong when it comes to meat, which often features in the media, capturing the public's attention, and taking centre stage in debates. The most recent example is the 'horse meat scandal' in 2013 (Walsh, 2013) which made headlines for more than a month. Widespread contamination of meat products with horse meat was uncovered, which brought meat challenges to the forefront of awareness and concern for governments, consumers, investors and, of course, actors in the meat supply chain.

The complexity of the challenges as well as the expectations from the different stakeholders can be illustrated by the following example from the dairy industry. According to FAO's latest relevant report *'... Generally, the emission intensity of milk production is lowest in industrialized regions … higher milk yields imply a shift of the cow's metabolism in favour of milk and reproduction as opposed to body maintenance, contributing to lower emission intensities ...'* (Gerber, 2013). From the point of view of climate change, sole concentration on the use of animals for milk production is beneficial; animal rights groups, on the other hand, fight against the transformation of cows' bodies into milk machines and the subsequent prevention of the development of normal animal behaviour. This is an example of conflicting stakeholder interests.

To add to this complexity, sustainable development is defined as mankind's current needs being met without compromising those of future generations (WCED, 1987). With this

definition in mind it becomes obvious that, regardless of the industry, it is hard to translate 'sustainability' and 'sustainable development' into specific operational terms (Banerjee, 2002; Gray, 2010; Labuschagne, Brent, & Van Erck, 2005; Madrakhimova, 2013; Marsden, 2009; Mauerhofer, 2008; Okoye, 2009; Omkareshwar, 2013; Sweeney & Coughlan, 2008) because it goes far beyond the jurisdiction of a company (Gray, 2010) e.g. sustainability may be reached at a regional level without each organisation within the area being sustainable as a lone standing entity. Furthermore, as it is a term that could encompass many different states of reality (Gray, 2010) or many different ways of doing business it, therefore, offers no solution but is rather a vague roadmap.

The implication of this is that, although there is rising expectancy for firms to take on their responsibility and more specifically, to be sustainable, it is, in fact, difficult to hold businesses accountable because there is no clear definition of what exactly should be done to achieve sustainability or how to get there, since there is no single sustainability narrative. This also means that companies have a wide range of choices when deciding what to put on their sustainability agenda, not least in complex industries such as the meat and dairy industries, where there are many challenges and conflicting stakeholder expectations.

1.2 Problem definition

This is a snapshot of the environment in which the meat and dairy supply chain is operating. This supply chain can be broken down into four parts (Figure 1). The first stage is the rearing of animals at the farm or meat production plant. The next stage in the case of the meat industry is the manufacturing of the meat which includes slaughtering, processing and packaging at the abattoir and processing units and in the case of the dairy industry, the collection and processing of milk and final packaging of products at the dairy units. The last stop before the final consumer is the retail and food providing stores. This simplified model of the supply chain does not depict the full complexity of the networks, where distributors, wholesalers, livestock feed providers, dealers, suppliers of other ingredients and coops can be added in between different points but it gives a summary of the major stages in the process.

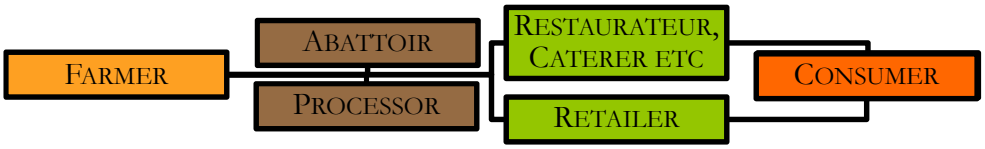


Figure 1 Basic meat and dairy supply chain

Source: Eurostat, From Farm to Fork, 2011edition

In the European Union (EU), the food chain industry is of primary importance; in 2008, the sector generated just over 6% of EU-27 Gross Domestic Product (GDP) (Eurostat, 2011), and is the source of livelihood for over 20% of the workforce (Eurostat, 2011). But apart from the industry's economic value, there is social and political value assigned to the food chain because food production is associated with food security and political independence (Eurostat, 2013a; UNEP, 2012). The EU is self-sufficient in meat and dairy products, a state which it is keen to maintain (Eurostat, 2011). Sustainable development is also the overarching long term goal of the EU (EC, 2009). The meat and dairy supply chains' economic, political, social, nutritional and environmental importance as well as the general increase in demand for sustainability by civil society in the EU, underline the urgency of

integrating sustainability through the value chain, a process which requires the input of companies (UNSDSN, 2014).

Currently in this sustainability drive, some issues such as food safety, hygiene and quality are being considered from a value chain perspective, but generally, most focus has been placed on the primary producer, the farmer. For example, in the publication 'Farm to Fork: 2011 edition', the discussion in the overview regarding a sustainable food industry is only centred on agricultural reform and the agricultural sector (Eurostat, 2011). Another example is the existence of a detailed EU policy for sustainable farming (Eurostat, 2013a) but during the research a similar one was not identified for food manufacturing industries. Although the majority of impacts occur at the agricultural stage of the process (Djekic, Miocinovic, Tomasevic, Smigic, & Tomic, 2014; Eide, 2002; Forsman-Hugg et al., 2013; Maloni & Brown, 2006; Milani, Nutter, & Thoma, 2011; Prescott, Singh, & Davy, 2002; Reckmann, Traulsen, & Krieter, 2012; WWF, 2014a, 2014b), there is one actor in the European meat and dairy supply chain that is also well placed to be a catalyst of change, despite the fact that traditionally not so much focus has been put on them. These are the meat and dairy processors.

In Europe, although the number of large companies and multinational meat and dairy processors is small, these companies account for a disproportionately large amount of the added value e.g. in the dairy industry, the large enterprises are responsible for almost two thirds of the industry's added value. Figure 2 depicts this fact. This is especially true in the northern countries, which are more consolidated than the southern ones (Eurostat, 2011). And overall there is a shift towards higher concentration and consolidation in Europe (EC, 2011b; Eurostat, 2011; LEI, 2011). Moreover, these actors are motivated to take action because risks in the food chain affect their viability (EC, 2011b). This means that the meat and dairy giants of Europe have power and specialization (EC, 2011b; LEI, 2011) that they could use to address sustainability issues upstream and downstream. Many processors have their own well-established retail brands (Eurostat, 2011) with a wide market reach. This visibility is both an outlet, through which they can promote sustainable consumption downstream as well as a means for drawing the public's attention and subsequently, their scrutiny to the area of sustainability. The bottom line is that meat and dairy processors are in a good position to cooperate with other participants of the supply chain in order to address sustainability issues.

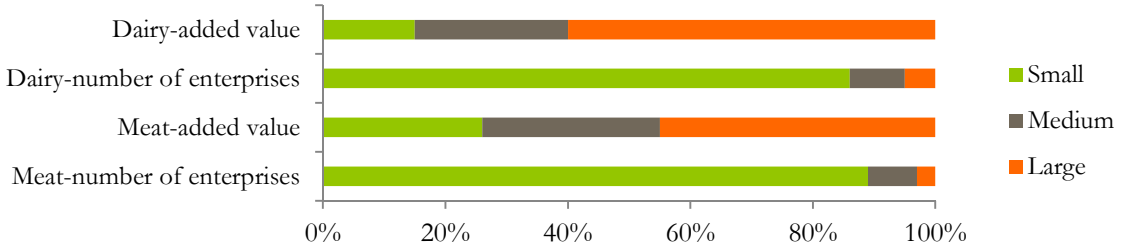


Figure 2 Sector analysis by size for added value and number of enterprises (statistics from 2008)

Source: Eurostat From Farm to Fork edition 2011

Furthermore, they are responsible for many impacts that occur within their factory walls such as food safety, product quality and animal welfare (Djekic et al., 2014; Milani et al., 2011; Nguyen, Hermansen, & Mogensen, 2012). These can be grouped into the context of the

three types of sustainability challenges namely, environmental, social and economic. Examples of environmental impacts are the high energy (Djekic et al., 2014) and water consumption needed for cleaning, heating and cooling (Milani et al., 2011; WWF, 2014b), product waste (Eurostat, 2011) and problematic wastewater discharge due to high levels of organic matter (WWF, 2014a, 2014b).

These issues, though important, are not the ones taking centre stage. NGO spokesperson, Paul McCartney for meat.org, which promotes animal rights in the meat industry, has been much quoted for saying that 'if slaughterhouses had glass walls, everybody would be a vegetarian' (meat.org, 2014). The EU has also set down legislation on animal treatment and a new regulation about animal protection at time of slaughter, which came into effect on January the 1st, 2013 (Eurostat, 2011). Even industries themselves, such as Ben & Jerry's, one of Unilever's ice cream brands, are pinpointing the bad treatment of milking cows (Ben&Jerry's, n.d.). Well-being of animals is just one issue with other social issues such as working conditions, health & hygiene, fair trade, and food safety considerations (Eurostat, 2011; Forsman-Hugg et al., 2013; Maloni & Brown, 2006; Prescott et al., 2002) being other major challenges.

The concept of sustainability covers one more issue: the idea of economic responsibility. Here too there is uncertainty as the European Commission (EC) reports on the turbulence in the meat and dairy processors' input and output prices between 2004 and 2010 and the effects this has along the value chain (EC, 2011b; Eurostat, 2011). Individual country reports published by organizations, such as IBISWorld for the UK, predict a marginal decrease in industry revenue over the next five years (2014-2019) after the rise in costs incurred by the horse meat scandal (PRWeb, 2013). Some examples of other issues are transparency of price information and ethical procurement (Forsman-Hugg et al., 2013; Maloni & Brown, 2006).

These challenges that are faced by the European meat and dairy processors, in conjunction with the role they can play in promoting sustainability in the food chain, make it clear that they need to start moving towards long term sustainability. But amongst the varying challenges, the conflicting stakeholder expectations and the vagueness of the term sustainability, the question arises: 'Which is the road to sustainability?'

1.3 Research objectives and questions

Awareness and the expectation to move towards a state of sustainability are rising and companies have a central role to play in this shift. Many challenges, conflicting stakeholder interests and vague goals mean that details relating to this shift are anything but clearly defined. For this reason research needs to be conducted into assessing current practices so as to be able to find opportunities for improvement. Because sustainability is industry-specific (Liew, Adhitya, & Srinivasan, 2014) it is meaningful to conduct such research into a specific industry. Already similar research has taken place in different industries such as forestry (Panwar, Hansen, & Kozak, 2014), plastics (Bachman, Bashyal, & Baumann, 2012), the hotel sector (Chan, 2013; De Grosbois, 2012), the processing industries (Liew et al., 2014), pharmaceuticals (Schneider, Wilson, & Rosenbeck, 2010), construction (Ortiz-Rodríguez & García-Cáceres, 2013) and manufacturing (Labuschagne et al., 2005).

This thesis will focus on two value chains which are of great importance for society but also pose a number of sustainability challenges: these are the meat and dairy supply chains in the European context. Furthermore, because research and government policy focus in the EU has generally been placed on the farmer, we propose to look at the efforts of the processors who are influential upstream and downstream and are also responsible for some impacts.

Consequently, this study will try to suggest improvements to their current practices by first establishing what the meat and dairy processors' current sustainability practices are, then suggesting a method of assessment based on the expectations of society, then conducting the assessment and finally, suggesting possible areas of improvement. This is a complicated undertaking and unchartered waters because there is no single set method (for more information see literature review), and for this reason this thesis proposes a method as well. Sustainability disclosures are used as a primary source of information about current industry practices and are assessed through text mining. By drawing on legitimacy theory (LT), civil society is determined as a primary force behind sustainability disclosure and practices, so improvements are suggested based on the existence of a legitimacy gap. Therefore, the research questions are formed as follows:

RQ1. What are the current sustainability practices in the EU meat and dairy processing industries?

RQ2. Based on current societal expectations how can meat and dairy industries improve their current practices?

In order to answer the second RQ we also need to previously have answered the question: 'What are current societal expectations for the meat and dairy processing industries?'

1.4 Study scope and limitations

In this report 'meat' refers to all edible parts of domestic bovine (cattle and cows), porcine (pigs), ovine (sheep), caprine (goats), domestic solipeds (hoofed animals), lagomorphs (rabbits, hares and rodents), and both wild and farmed game (Regulation (EC) No 853/2004), which are brought to the market for human consumption in the form of fresh meat, meat preparations, meat products, etc. Meat processors are establishments that have one or more of the following units: slaughterhouse, cutting plant, processing plant of fresh meat, processing plant of previously processed meat and game-handling establishment. The main products are fresh, chilled or frozen meat as carcasses and cuts. There are many by-products as well that include rendered lard and tallow, and pulled wool from slaughtered animals.

Dairy processors are food business operators that receive milk, *'produced by the secretion of the mammary gland of farmed animals that has not been heated to more than 40ºC or undergone any treatment that has an equivalent effect'* (Regulation (EC) No 853/2004) and use it to manufacture dairy products. '*Dairy products are processed products resulting from the processing of raw milk or from the further processing of such processed products*'. (Regulation (EC) No 853/2004) The main products from the dairy industry are drinking milk, cheese, cream, and butter.

This study is geographically focused on the members of the European Union with the addition of non-EU countries within the European geographical area e.g. Switzerland, the Former Yugoslav Republic of Macedonia and Norway.

With regards to the methodology, all research was carried out by one researcher. On the positive side this means that the same method and perspective were used throughout all the collection, organization and analysis processes, but, on the other hand, there has not been any cross-examination of the collected data, and this could result in an unintentional bias. Finally, the time scope of the research centres on the prevailing issues covering the years 2012-2014 and does not go into historical details.

1.5 Audience

This thesis targets specific industries and is of relevance to a number of different actors in these industries. The interviewees all expressed an interest in reading the report, thus indicating that companies themselves are interested in knowing what the current sustainability practices are and how they can improve. Naturally, policy-making bodies on the one hand and NGOs and other advocacy groups, on the other, which are trying, each in their own way, to bring about change in these industries, can use information in the paper to estimate the effectiveness of their current strategies and gain insights into possible changes to be made in their tactics.

1.6 Report structure

In the first chapter the framework for the research is set by defining the need for sustainability within the European meat and dairy supply chain and the role meat and dairy processors can play in sustainable development as well as the difficulty they face in determining and evaluating their sustainability agenda. The two research questions are presented. They are framed by the scope and limitations of the study. Finally, a description of the target audience is given.

The second chapter consists of a review of academic literature on corporate sustainability, the use of sustainability disclosures by organizations, methods of assessment and sustainability in the food chain context. Two explanatory theories namely, legitimacy and stakeholder theory as drivers of sustainability and disclosure are described and then the importance and the composition of one specific stakeholder i.e. society is discussed. Other influencing factors that determine the content of corporate sustainability are also briefly examined.

In the third chapter the text mining methodology as well as the other forms of data collection and assessment used in this thesis are described. The criteria which were used for selecting companies and the societal stakeholder groups included in this study are also presented.

In the fourth chapter the results from the text mining of sustainability disclosures from the meat and dairy industry are presented in the form of term and theme frequency.

In the fifth chapter the meat and dairy processors current practices are compared against the expectations of global and national societal stakeholders and social groups and institutions in order to identify opportunities of improvement. Interviews are used in order to assess the feasibility of the suggested improvements.

In the sixth chapter the limitations of the research are discussed in more detail and the legitimacy of the research is established.

Finally, in the last chapter the research is summarized, providing the main points and conclusions as well as options for future research.

2 Literature Review

2.1 Basic terminology

Any research in the field of sustainability has to begin with a description of the normative concept of sustainability and the equally frequently used sister concept of CSR. Although the current challenges facing our societies have made the issue more acute, the notion that businesses should not operate with the sole goal of making profit has been acknowledged for some time. Going back to 1932, the Harvard Law Review stated that firms ought to produce social service as well as profits (Okoye, 2009). Since then a number of related concepts have been developed and discussed such as green marketing, a holistic concept of altering the marketing mix to be less detrimental to the environment (Mishra & Sharma, 2012; Omkareshwar, 2013). Another term is corporate environmentalism, whereby environmental concerns are integrated into a business's strategic planning (Banerjee, 2002). Corporate Responsibility (CR) and Corporate Social Responsibility (CSR) are also very commonly referred-to principles, whereby firms have a responsibility to undertake positive action towards stakeholders (Carroll, 2008) and the environment (Madrakhimova, 2013) but although the terms are generally understood, no universally accepted definition exists (Sweeney & Coughlan, 2008). Many other terms have been used either more or less frequently to present the same underlying theme, such as environmental management, corporate citizenship, corporate environmental commitment, ecocentric organizations, and even sustaincentric organizations.

Some researchers suggest that the terms 'sustainability' and 'CSR' are gradually converging (Hahn, 2011). An example to make this convergence apparent is the European Commission's definition of CSR as "the responsibility of enterprises for their impacts on society ... to integrate social, environmental, ethical, human rights and consumer concerns into their business operations and core strategy" (EC, 2011a). This definition clearly overlaps with the concept of sustainability, where focus is set on three strands of sustainability "environmental, social, and economic" (Gray, 2010; Henriques & Richardson, 2004; Mauerhofer, 2008) and the triple bottom line: people, planet, profit. The overarching idea with sustainability management is that it should attempt to foster the three types of sustainability within the initiating company and right through the supply chain (Leppelt, Foerstl, Reuter, & Hartmann, 2013; Seuring & Gold, 2013). Sustainability as a holistic and integrated approach to a firm's responsibilities is gaining popularity (Leppelt et al., 2013).

This terminological inconsistency and interchangeability in academia (Montiel & Delgado-Ceballos, 2014) is mirrored by the business world. For example, company websites, practices and disclosures come under a variety of names: Sustainability, Sustainable Development, Corporate Governance, Corporate (Social) Responsibility, Corporate Citizenship and Environmental Work. In a number of cases the name given to a disclosure is misused, for example in a sustainability report the three dimensions have to be represented in equilibrium but one aspect, usually the economic dimension or even two, get under-represented (Hahn & Kühnen, 2013; Montiel & Delgado-Ceballos, 2014). If strict definitions were applied, these reports would not be classified as 'sustainability reports'.

In this paper we are concerned with looking into the current practices of enterprises, so based on this overlapping of terms, the term 'sustainability' is used to refer to any corporate sustainability related concept such as CSR or CR which encompasses any of the three dimensions and not just the holistic concept. In accordance 'sustainability disclosures' are

used in reference to any kind of sustainability-related reporting or information-providing activity by corporations. Recently, a fourth dimension, the dimension of time, has been proposed as an addition to sustainability (Lozano & Huisingh, 2011). The rationale of the proposal is that the equilibrium and relationship between the three dimensions changes in the long and short term and is thus affected by time. But this dimension is still new and has yet to manifest itself into practice within corporations so it is not included as one of the dimensions in this report. Instead, sourcing is incorporated as a fourth dimension in order to emphasize the importance of taking a supply chain approach when tackling sustainability and especially as the primary producer shares a large percentage of the impacts in the meat and dairy supply chains (see chapter 2.8 &2.9 for more details).

2.2 Research in corporate sustainability

Academic research in recent years has shown an increasing interest in sustainability (Barkemeyer, Figge, Holt, & Hahn, 2009; Hahn & Kühnen, 2013; Montiel & Delgado-Ceballos, 2014). This has been demonstrated by Barkemeyer et al, whose research observed considerable growth in the occurrence of the terms 'corporate citizenship' and 'corporate social responsibility' in various academic databases between the years 1990 and 2007.

Research in the field may cover a wide variety of themes. One example of research looks into the reasons for integrating corporate sustainability and the positive effects it has on organisational performance e.g. (Maletič, Maletič, Dahlgaard, Dahlgaard-Park, & Gomišček, 2014), market value e.g. (Ştefea & Pelin, 2009) etc. Research also centres around the factors that determine or motivate the choice of content of corporate sustainability agendas (Searcy, 2012), with a lot of focus falling on the role stakeholders have to play (Rivera-Camino, 2007; Sharma & Henriques, 2005; Sibbald, Singer, Upshur, & Martin, 2009). Furthermore, studies look into the methods for implementing sustainability strategies within organizations(Searcy, 2012); some scholars classify research into sustainability accounting and reporting e.g. (Bennett & James, 1999; Cairns, 2006; Patrizia & Carlotta, 2011; Schaltegger, Bennett, & Burritt, 2006; Schneider et al., 2010) in this body of articles (Hahn & Kühnen, 2013; Searcy, 2012). Other studies focus on measuring corporations' or industries' performance e.g. (Dias-Sardinha & Reijnders, 2005; Goyal, Rahman, & Kazmi, 2013; Keenan & Kashmanian, 2012; Labuschagne et al., 2005; Medel-González, García-Ávila, Acosta-Beltrán, & Hernández, 2013; Montiel & Delgado-Ceballos, 2014; Ortiz-Rodríguez & García-Cáceres, 2013) and mapping out sustainability practices e.g. (Bachman et al., 2012; Liew et al., 2014; Walker & Wan, 2012). In addition to looking into sustainability within the borders of the company, another area of research assesses the effectiveness of different strategies in promoting sustainability along the supply chain and the subsequent benefits of such approaches to the enterprise (Gimenez & Tachizawa, 2012; Leppelt et al., 2013; Seuring & Gold, 2013; Smith, 2013). These are examples of the diversity of research themes in this emerging field and this is by no means an exhaustive list of topics, because producing such a list would go far beyond the scope of this paper.

In a review of approximately 1,400 articles on corporate sustainability published from 1995 to 2013 in management academic and practitioner journals and specialized academic social responsibility/sustainability/environmental management journals, Montiel and Delgado-Ceballos (2014) found that the articles could be put into three large groups based on the kind of theoretical framework they used. One group included articles which use traditional theories, mainly stakeholder, institutional and resource-based views; another group contained articles that introduce new theories and the third group centred on articles that do not use theory but observe and describe facts or case studies and then draw conclusions from the observations. The same study also reached the conclusion that … *'a standardized method to*

measure corporate sustainability does not exist'… (Montiel & Delgado-Ceballos, 2014) and that the majority of research uses either data and metrics from other institutions or collects its own data and creates its own method when trying to measure sustainability performance. This is not just their observation (Goyal et al., 2013; Searcy, 2012). For example, in a literature review of sustainability performance management systems, Searcy (2012) noted the same lack of a standardized method of measurement, despite the growing body of literature on the topic. Researchers using their own methods/data suggest methods which vary from the creation of industry-specific composite indicators e.g. (Ortiz-Rodríguez & García-Cáceres, 2013) or country-specific balanced scorecards (Dias-Sardinha & Reijnders, 2005), to benchmarking e.g. (Keenan & Kashmanian, 2012) or advocating a corporate index of sustainability performance e.g. (Medel-González et al., 2013). In many cases, performance assessment takes the form of factual description or case study assessment (Montiel & Delgado-Ceballos, 2014). Other researchers use data and methods of assessment from other sources, such as the Kinder, Lydenberg, and Domini (KLD) Indices, GRI, or the Dow Jones Sustainability Index (DJSI) (Montiel & Delgado-Ceballos, 2014; Searcy, 2012). Calabrese, Costa, Menichini and Rosati (2013) grouped the evaluation methods of sustainability outcomes into five groups: 'reputation indices or data- bases; single and multiple issue indicators; content analysis of corporate reports and institutional web sites; indicators measuring CSR at individual level, and scales measuring CSR at organizational level'. Their classification legitimizes the use of the text mining method employed in this paper which can be classified as content analysis of sustainability reports and webpages.

This lack of standardization is a problem for both the stakeholders wanting to assess the practices and the firms themselves because measuring progress and performance is crucial to the success of corporate sustainability (Goyal et al., 2013; Searcy, 2012). When the sustainability performance measurement is undertaken by the corporation in order to support internal decision making, it is considered sustainability accounting (Gray, 2010; Hahn & Kühnen, 2013) which then becomes the basis for sustainability reporting (Hahn & Kühnen, 2013).

2.3 Sustainability disclosures

An increasing and not insignificant number of companies engage in sustainability reporting on a voluntary basis (Sweeney & Coughlan, 2008; van der Laan, 2009). Research into sustainability reporting and disclosure also constitutes a body of literature that is experiencing growth. This research takes two directions. In the first case, the disclosures themselves are an object of research. Such research would involve exploration into the company benefits for providing sustainability disclosures e.g. they can be used to increase stakeholder trust, enhance reputation and indicate an enterprise's commitment to sustainable development (GRI, 2013; Patrizia & Carlotta, 2011; Schaltegger et al., 2006; Sweeney & Coughlan, 2008; van der Laan, 2009) or as a motivational tool by raising awareness, giving a reason to address the sustainability challenges and can even provide a framework for doing it (Schaltegger et al., 2006).

In the second case, disclosures are used as data sources of a corporation's sustainability practices because they are the most comprehensive public source of such information (Sweeney & Coughlan, 2008) and a stakeholder's window into sustainability accounts and practices (Bennett & James, 1999). It needs to be emphasized that sustainability reporting is not mandatory or legally framed so accounts differ greatly in style, extent, medium of communication, levels of disclosure, standards/guidelines/frameworks employed, and, most importantly in the range of reported topics (Fifka & Drabble, 2012). Moreover, there is no clear sustainability narrative and it is open to interpretation what the reports should contain

(Gray, 2010). Consequently, detailed examination into the content and structure of the reports is needed when using them to assess the level of commitment and real work being done in the way of sustainability (Labuschagne et al., 2005; Sweeney & Coughlan, 2008; van der Laan, 2009).

Of course, sustainability disclosures are not just made up of reports; other types of disclosure used by companies include sustainability goals in annual reports, sustainability management systems with balanced scorecards and dashboards, information on websites, communication through media on their green or sustainable behaviour, green marketing activities, etc. (Bachman, Bashyal, & Baumann, 2012). In this thesis sustainability reports and web content are used as sources of information.

In a review of 178 articles, published between 1999 to 2011, on sustainability reporting, Hahn and Kühnen (Hahn & Kühnen, 2013) found that there are two systems-related theories, legitimacy theory(LT) and stakeholder theory (ST) that are widely used in academia to explain sustainability disclosure practices. They are both derivatives of political economy theory (van der Laan, 2009). As part of this thesis a combination of the two theories is used for analysis of data and in order to generate and explain the findings.

2.4 Stakeholder theory

ST is the theory most frequently used by academia to explain the driving forces behind sustainability management (Montiel & Delgado-Ceballos, 2014) and sustainability disclosure practices (Hahn & Kühnen, 2013) by an enterprise. The basis of ST was laid down by R. Edward Freeman in his book 'Strategic Management: A Stakeholder Approach' where he describes stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 2010). He suggested that an organisation's operations are influenced by the pressure of a number of distinct stakeholders and their interests have to be kept in mind when doing business. As such ST has been extensively used to explain sustainability management as a method of integrating stakeholders' interests into corporate strategy and sustainability disclosure as a method of communicating accountability to stakeholders.

In 1995 Donaldson and Preston introduced an influential triple perspective typology of ST whereby three aspects and usages of the theory were distinguished: 'descriptive' which is used to describe an organization's behaviour, 'normative' which is used to explain the philosophical and moral role of the corporation and 'instrumental' which is used to explain the effect of stakeholder management on the organization's goal. Based on these three groupings plus the overall perspective of ST, Steurer, Langer , Konrad and Martinuzzi (2005) suggested four research questions for exploring the relationship between stakeholder management and sustainable development. Two of these questions are directly related to and legitimize this paper's research questions. The first addresses the descriptive perspective and is 'Which issues of sustainable development are taken into account by corporations or stakeholders and in what way?' (Steurer et al., 2005) This is directly linked to our first RQ: 'What are the current sustainability practices in the European meat and dairy processing industries?' and also links to a part of the second RQ, 'Based on current societal expectations how can meat and dairy industries improve their current practices?'. The second question which is related to this thesis is 'What issues of SD should corporations and stakeholders take into account?' and concerns the normative view of ST. Although this question is not directly linked to one of the research questions, there is an indirect connection. This thesis argues that as society as a stakeholder is of prime importance, its expectations should be

taken into account and therefore the fulfilment thereof is used as a measure of assessment of a corporation's sustainability practices.

This is not the first study to propose that, based on the ST supposition that corporations have to address the expectations of their stakeholders, one way of measuring and evaluating the sustainability agenda of a company is to measure the extent to which the stakeholders' expectations are being met. Calabrese, Costa, Menichini and Rosati (Calabrese et al., 2013) proposed a method which could be used by companies to evaluate their CSR performance in terms of disclosure and capacity to fulfil both stakeholder social and environmental expectations and applied it in a case study. They compared three measures: company commitment to an issue as expressed in reports, the company commitment as perceived by its stakeholders, and the commitment as expected by its stakeholders. Another study by Longo, M., M. Mura and A. Bonoli: 2005, 'Corporate Social Responsibility and Corporate Performance: The Case of Italian SMEs' created a list of values for each stakeholder group that correspond to their expectations. If a company fulfils at least half of these expectations, then it is considered socially responsible.

Companies have recognized the need to fulfil the expectations of some of their stakeholders in terms of sustainability and that is why they also evaluate their sustainability performance based on the feedback of some stakeholder groups; some companies even attempt to integrate them into the priority-setting process. In the Global Reporting Initiative (GRI) guidelines for sustainability reporting addressing the needs of stakeholders and reporting on how expectations are met are of fundamental importance (GRI, 2013).

2.5 Legitimacy theory

According to LT in order for an enterprise to have the right to operate, its values have to be in line with society's values (Dowling & Pfeffer, 1975) or in the words of Suchman (Suchman, 1995) " … legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions...". If there is an incongruity between the organization's and society's values, then legitimacy and the right or the license the organization has to operate can be revoked. This means that an organization has to engage in efforts to ensure and secure legitimacy. Due to information asymmetry between the general public and the organization, voluntary sustainability disclosure is seen as a method of portraying that the values an organization stands for and the actions it undertakes are "desirable, proper, or appropriate" (Cho & Patten, 2007; Deegan, 2002) for society in order for "the license to operate" not to be revoked. If a mismatch should be perceived between the two, then a legitimacy gap occurs (Haniffa & Cooke, 2005), which means that an organization will run into various forms of opposition, such as reduced consumer demand or even boycotting, governmental sanctions, unfavourable media coverage, restricted access to labour, reduction in supply of financial capital which in the long term may gradually lead to the organization's demise. This is why legitimacy is an operational resource (Mahadeo, Oogarah-Hanuman, & Soobaroyen, 2011; Suchman, 1995) and obtaining what is known as the 'social contract' or "the licence to operate" is crucial for an organization's survival.

Social contracts unlike legal contracts are not clearly defined since they represent hundreds of societal expectations that change over time (Mahadeo et al., 2011; Suchman, 1995). This means that an organization is constantly in the position of having to prove congruence with societal values and that if a gap occurs between the stakeholders' expectations concerning the organizations' actions and the actions themselves, then there are a number of pursuable strategies to rectify the situation and fill the gap. First of all output, goals and practices can be

altered in order to conform to definitions of legitimacy (Dowling & Pfeffer, 1975). Secondly, an organization may attempt to influence the definition of social legitimacy so it conforms to the organization's current practices (Deegan, 2002; Dowling & Pfeffer, 1975); and thirdly, an organization may attempt to become identified with symbols or values which imply legitimacy (Deegan, 2002; Dowling & Pfeffer, 1975; Suchman, 1995), for example, apologizing or creating excuses or even through deception (Milne & Patten, 2002). These methods are usually accompanied by targeted communication in order to inform the public about remedial actions or in order to influence public perceptions on the issue in question (Cho & Patten, 2007; Dowling & Pfeffer, 1975). This communication should also occur on a regular basis because the content of the 'social contract' changes, so the organization has to regularly demonstrate that it is up-to-date with societal concerns and expectations (Mahadeo et al., 2011).

From the above it is also evident that although sustainability disclosures are a legitimizing tool (Cho & Patten, 2007), it is not simply a way of clearly demonstrating legitimizing actions and values, but also a potential tool to mask legitimacy gaps (Suchman, 1995). In fact, it is often the case that when the cost of impact mitigation is high, then companies will opt for associating themselves with symbols of legitimization (Mahadeo et al., 2011). The relationship between actual performance and disclosure is a topic of discussion in academic literature (Hahn & Kühnen, 2013) but there is consensus that the purpose of disclosure is to seek the blessing of the public.

This thesis draws on LT in order to see whether a legitimacy gap is occurring in the meat and dairy processing industries in Europe. Such a gap between public expectations and companies' conduct may be known to the organizations, i.e. it may be the company's strategy not to change its actions but instead to attempt to influence societal values (Dowling & Pfeffer, 1975) or the gap might be unknown to the organizations, i.e. due to the complexity of the 'social contract' managers might not be aware of its content or may be influenced by their own value set (Deegan, 2002)or business rational.

2.6 Society as a stakeholder

The process of legitimization is obviously complex (Milne & Patten, 2002) but as inferred from the above, legitimacy is conditionally bestowed upon the organization by the public (Milne & Patten, 2002; Monfardini, Barretta, & Ruggiero, 2013), the social contract is signed by society (Suchman, 1995). There is an inconsistency in literature about which groups constitute, from the perspective of an organization, society or the public. It has been suggested that this is where the overlap of LT and ST occurs (Milne & Patten, 2002; Monfardini et al., 2013). In accordance with this notion, instead of corporate sustainability disclosures and practices being used to address the expectations of clearly defined stakeholders only e.g. employees or shareholders as suggested in ST or focus being placed solely on the wider public as is implied by LT (Max, 1995; Milne & Patten, 2002; Panwar et al., 2014), society can instead be approached and defined as a stakeholder of primary importance.

This issue must first be put into academic context. The academic community is not in agreement about who constitutes a stakeholder. Society or civil society may or may not be included in the stakeholder list, depending on how each researcher defines a stakeholder. Some researchers define stakeholders only as the people/issues that can take action if their needs are not met e.g. Garvare and Johansson (2010). Others like Freeman include society because it is affected by an organization (Freeman, 2010). Although many groups may get classified as stakeholders, there is general agreement that stakeholders have different degrees

of importance, but again there is no academic consensus on what characteristics determine their importance (Mitchell, Agle, & Wood, 1997; Wheeler & Sillanpää, 1998). For instance, the stakeholder's power to influence the firm, the legitimacy of the stakeholder's relationship with the firm and the urgency of the stakeholder's claim on the firm have been proposed and widely accepted as attributes by which to define stakeholders and their importance (Mitchell et al., 1997). Another method is to classify stakeholders as 'primary' and 'secondary' social stakeholders and non-social stakeholders. Based on the definition given by Wheeler and Sillanpää (1998), customers, employees, investors, local communities, suppliers and other business partners are considered primary 'social' stakeholders because they are human entities and they directly influence the organization. "In less direct involvement but nevertheless sometimes extremely influential are the secondary social stakeholders representing civil society, business at large and various interest groups."(Wheeler & Sillanpää, 1998). Other researchers have a very clear delineation between society and stakeholders, for example, in his report based on a 10-year research and 70 field studies of corporate social performance conducted between1983-1993, Max (1995) concluded that corporations manage relationships with stakeholder groups rather than with society as a whole and that it is important to distinguish between social issues and stakeholder issues, thus clearly dividing the two groups.

In the case of society the problem is not just associated with its classification but also with the content, or rather the lexical use of the term. Different researchers use the term to describe local communities or national population or the surrounding environment (Lépineux, 2005). For example, a research similar to this by Panwar et al. (2014) who conducted an empirical evaluation of expectation legitimacy gaps in the forest industry, did not define society but assumed society to be people living in the states where the forest industries operate.

This inconsistency in the definition of stakeholder and especially society's position in the theory has been researched in depth by François Lépineux (2005) in his paper 'Stakeholder theory, society and social cohesion'. He proposes that civil society needs a clearer definition and position in ST in order to strengthen ST as a theory. He bridges the gap between LT and ST by defining civil society as the most important stakeholder and introduces an extended classification system of stakeholders based on a binary categorization, an intermediate taxonomy and a developed typology. This system can be viewed in Figure 3 and is used in this paper in order to define society and the choice of groups described as societal stakeholders.

According to the taxonomy, the first step in a binary categorization splits stakeholders into societal, which has a broader definition than social groups and institutions, and business stakeholders, all of whom have business relations with the organization. The next step, the intermediate taxonomy, splits these two groups into three components. Societal stakeholders comprise global society, national societies and social groups or institutions; business stakeholders are made up of shareholders, internal stakeholders and external business stakeholders. Finally, the developed taxonomy pinpoints the following main sub categories: I) societal stakeholders: global society, civil societies of the countries where a company is located and/or operates, local communities surrounding its establishments and those neighbouring the establishments of its subcontractors, especially in developing countries, international institutions, governments, activist groups, NGOs, civic associations and the media. II) Business stakeholders: shareholders, executives and managers, employees and workers, trade unions, customers, suppliers, subcontractors, banks, investors, competitors and business organizations.

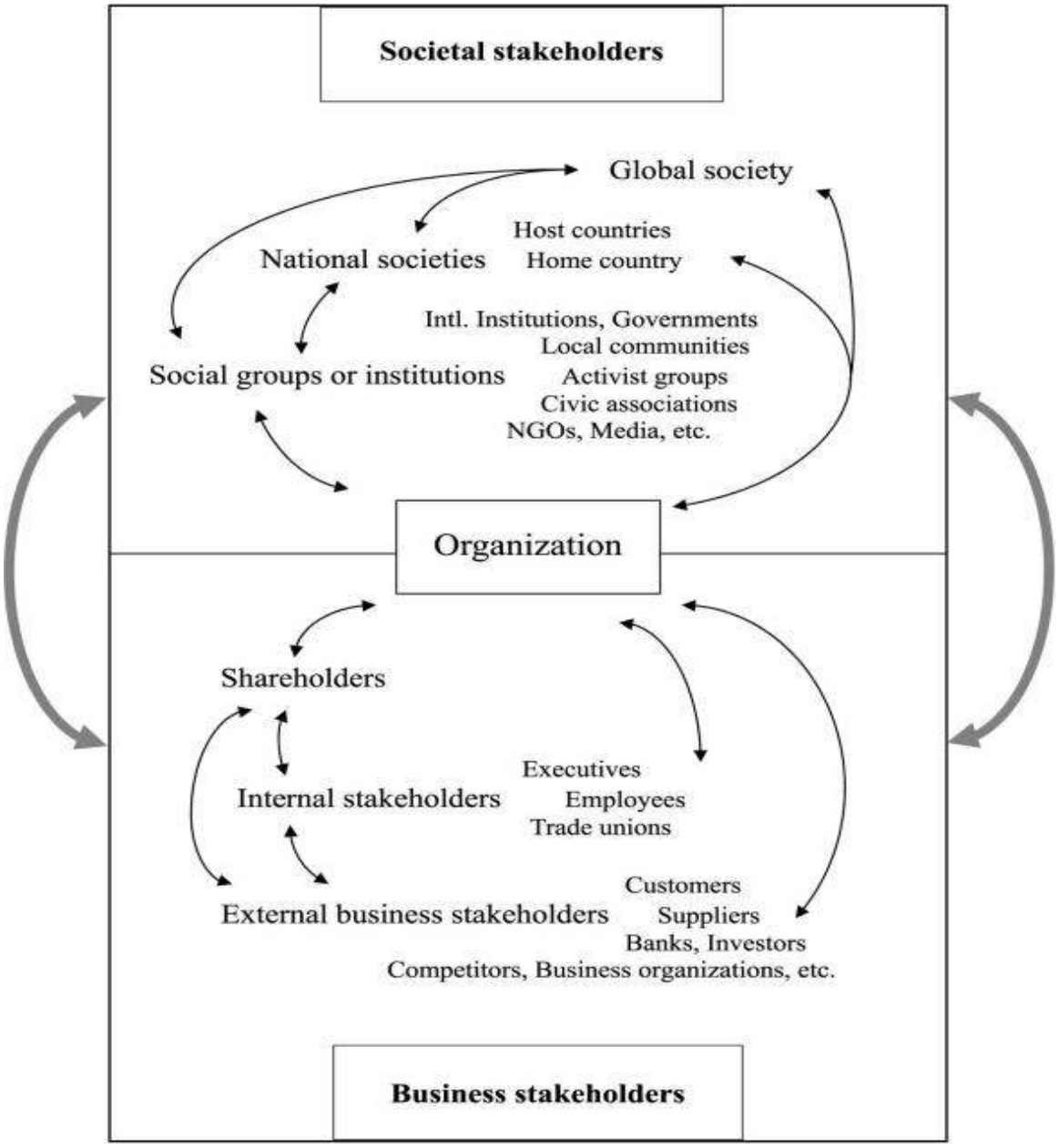


Figure 3 Classification system of stakeholder

Source: 'Stakeholder theory, society and social cohesion' François Lépineux (2005)

Some theorists emphasize that the stakeholder's influence and expectations can change over time due to market structure, political context etc. For this reason, it's more important to evaluate the relationship between actor and organization rather than the actor (Garvare Lozano 2005). If we move away from academic literature for a moment and apply this thought to the business world, we can see that under the current circumstances the relationship between civil society and business is strong or to use the wording of the OECD Guidelines for Multinational Enterprises '*... labour and civil society have to be involved proactively and constructively and have a key role to play in ensuring accountability….the 2008 global crisis has demonstrated in no uncertain terms that markets need integrity – they need to work for people and not the other way around…'* (OECD, 2014).

2.7 Other factors influencing corporate sustainability priorities

Although the position in this thesis is that the expectations of societal stakeholders are of primary importance when a corporation determines its sustainability agenda, it is recognized that in practice there are other factors that are influential. At this point the purpose is not to suggest what should be done but to briefly examine what is done so two sources of information are used. The first source is guidelines provided by international organizations to corporations on how to choose and report priority topics for their sustainability agenda and the second is descriptive academic literature. Based on this literature, and also on an unpublished article by the European Topic Centre on Sustainable Consumption and Production (2009) the influencing factors can be grouped into three broad categories that are graphically presented in Figure 4. These are:

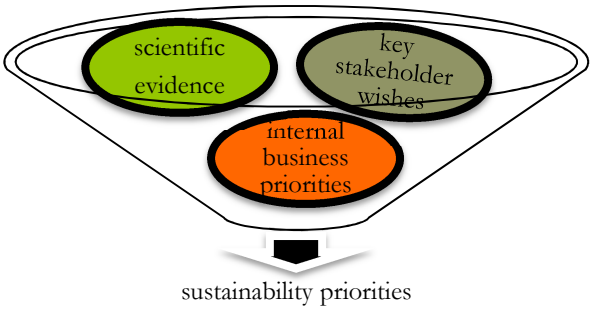


Figure 4 Key determinants of sustainability management

Scientific evidence: In this context scientific evidence is referred to as the findings from the rigorous assessment of risks and impacts occurring across a product's life cycle as well as within an enterprise's field of operation. The purpose is to identify hot spots of environmental, social and economic problems. The GRI guidelines (GRI, 2013), ISO 26000 (ISO, 2010) and UNGC (UNGC, 2012) management model all include this step when advising a company on how to identify 'core' or 'material' issues. There are various ways to carry out an assessment, for example the GRI suggests consulting '… people with recognized expertise or by expert bodies with recognized credentials in the field…' (GRI, 2013). Assessment tools can derive i) from academia, such as environmental or social Life Cycle Assessments (LCA) (FAO, 2014), ii) from industry, such as the Sustainable Agriculture Initiative Platform's (SAI) sustainability performance assessment, (FAO, 2014), or iii) from NGOs, such as water/carbon/environmental footprints. Some of the methods discussed previously about assessment of sustainability practices undertaken by a corporation can also be used to assess the highest impacts. One of the benefits of using these tools, especially when supplemented with a cost benefit analysis, is that they not only provide insight into the highest impact areas but can also highlight low hanging fruits.

Key stakeholders: From an academic perspective, this issue has been discussed in detail in the previous chapters. From an industry perspective, engaging with stakeholders and taking into account their expectations wishes and concerns is a fundamental value for the GRI guidelines (GRI, 2013), the ISO 26000 (ISO, 2010) and the UNGC (UNGC, 2012). As it is written in the instructions for ISO 26000 *'…an organization should consider two fundamental practices of social responsibility: recognizing its social responsibility within its sphere of influence, and identifying and engaging with its stakeholders (Clause 5)…'*.

Internal business priorities: Although academic research in this field is lacking (Kalyar, Rafi, & Kalyar, 2013), there is still evidence that a wide variety of internal business components influence sustainability priority setting such as corporate strategic planning and firm culture (Kalyar et al., 2013), manager's vales (Duarte, 2010) or corporate vision and mission (Baumgartner, 2014). According to the GRI guidelines, core competencies, key organizational values, policies, strategies, operational management systems, goals and targets (GRI, 2013) should all be considered when determining material aspects.

Of course there are two other issues of importance as well, but they do not merit being included as a separate category. The first concerns rules and regulations; it is considered that they do not shape the sustainability priorities because a corporation would have to follow them regardless of engagement in sustainability. The second is related to the sphere of influence. According to industrial guidelines, a company has to determine what issues it has the possibility to influence before committing to managing them (GRI, 2013; ISO, 2010; OECD, 2014). This is obviously valid but it has not been included because according to the guidelines, it is classified as boundary or scope setting rather than choice of topic.

2.8 Sustainability in the food chain

There is a lot of generic information in literature about CSR and corporate sustainability but since issues are industry-specific, there has been some effort by the academic community to identify sustainability hot spots in the food chain and provide companies with guidance. Although little research targets specifically the meat and dairy processors, there are articles covering the food chain. One group of Finnish researchers through iterative research process and interactive and participatory stakeholder dialogue based on rye bread, broiler chicken products and margarine food chains tried to identify and define the content of CSR in the food supply chain context. The proposed seven key dimensions: environment, product safety, nutrition, occupational welfare, animal welfare, economic responsibility and local well-being (Forsman-Hugg et al., 2013). These dimensions as well as their basic content as described in their paper are presented in Figure 5.

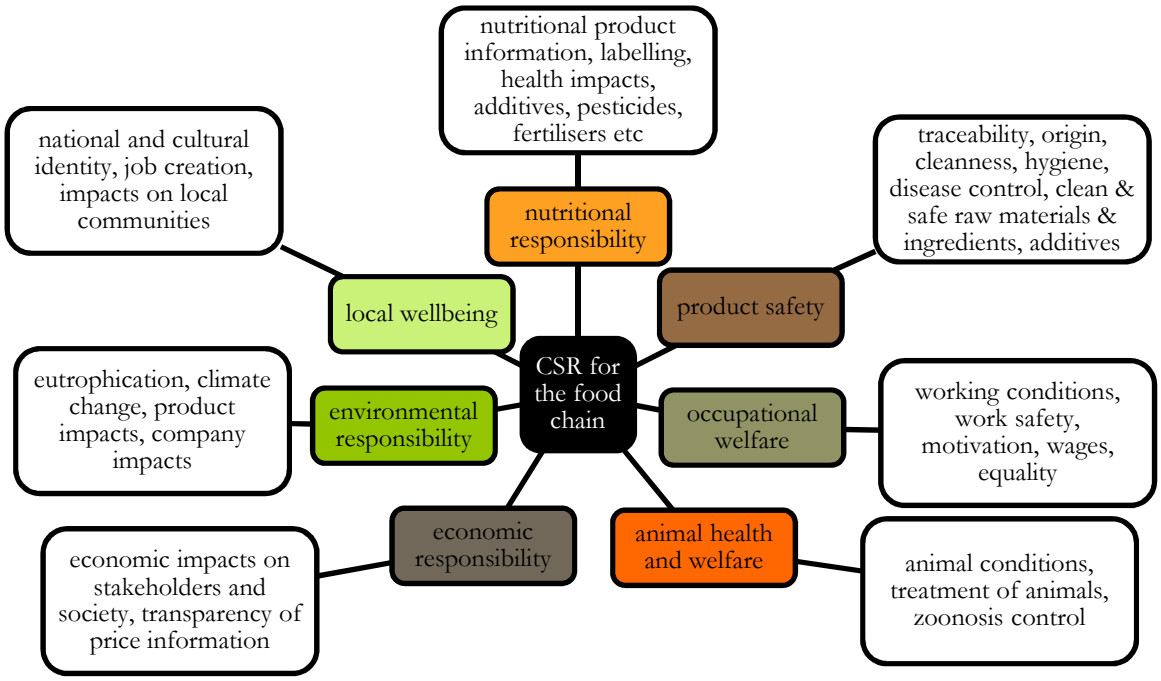


Figure 5 Key CSR dimensions for the food chain

Source: Adapted from Forsman-Hugg et al., 2013

Maloni and Brown (2006) also created a comprehensive framework of CSR elements in the food industry by synthesizing previous research as well as current industry trends. Their framework which is presented in Figure 6 has eight key elements to it, namely, animal welfare, biotechnology, environment, fair trade, health and safety, procurement and labour and human rights.

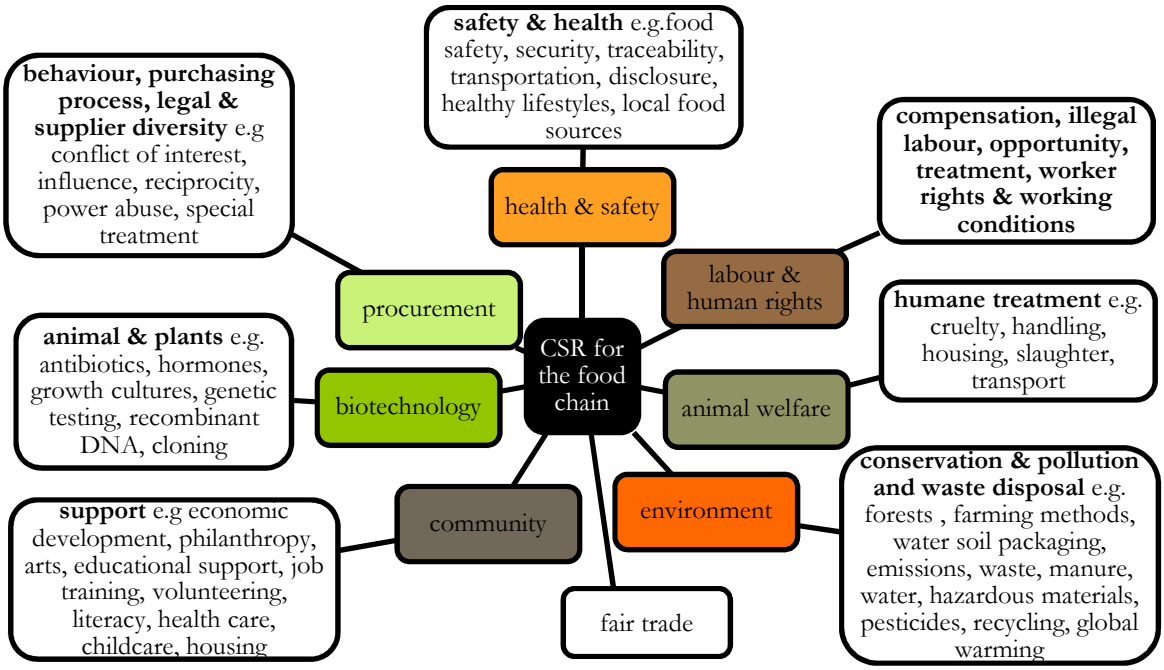


Figure 6 Dimensions for CSR in the food supply chain

Source: Adapted from Maloni and Brown (2006)

There is evidence that corporations in food business have also tried to collectively define CSR and sustainability strategies and priorities. The International Business Leaders Forum (IBLF), a non-profit organisation promoting the role of business in society, published a report in 2002 (Prescott et al, 2002) in order to assist companies specifically in food and beverage manufacturing to identify the most relevant CSR issues for their industry. They identified four major challenges across the value chain (Figure 7) and also the stages most affected by these challenges: i) sustainable agriculture, ii) ethical trade, iii) food safety and iv) nutrition, lifestyle and marketing. Sustainable agriculture is complex in its definition as it covers the burden on nature, but also social aspects relating to the famer and the rural community.

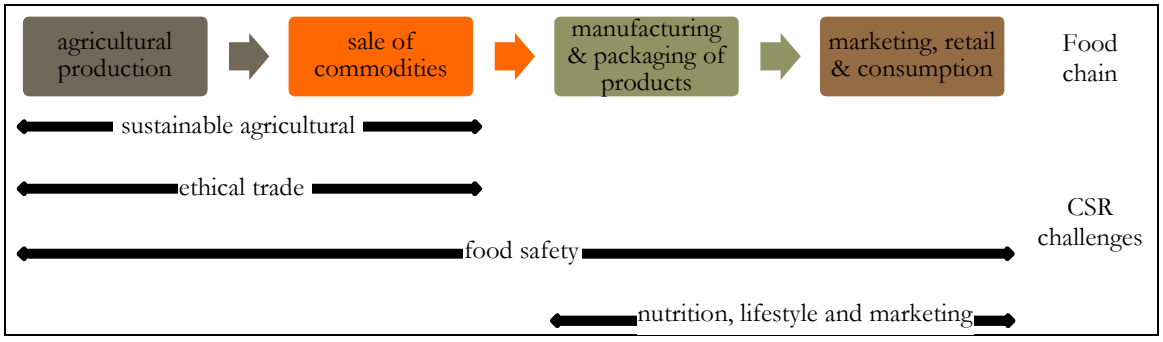


Figure 7 CSR challenges in the food chain

Source: Adapted from Prescott, Singh and Davy (2002)

Ethical trade in this context focuses on meeting at least basic working conditions. Food safety is broadly defined as food that does not transmit food borne disease. And finally,

nutrition, lifestyle and marketing relates to the role enterprises have to play in promoting public health.

In 2014 FAO published the Sustainability Assessment of Food and Agriculture systems (SAFA) Guidelines in an effort to create a holistic global reference framework for the assessment of sustainability along agriculture, forestry and fisheries value chains. This framework consists of 21 themes which are universally applicable (Figure 8), 58 sub-themes which are used to identify hot spots and 116 indicators. The aim is to assist food and agriculture enterprises, NGOs, sustainability standards and tools community, governments, investors and policy-makers with activities such as performing gap analysis and assessments as well as establishing goals. The data needed by the corporation when implementing SAFA has been aligned to the data needed for existing frameworks and initiatives in order to simplify its application for the corporation. The SAFA framework is included in this section because it clearly correlates with sustainability in the food industry. It is also used as a measure of the interests for the global societal stakeholders (see more information in Chapter 3 Methodology).

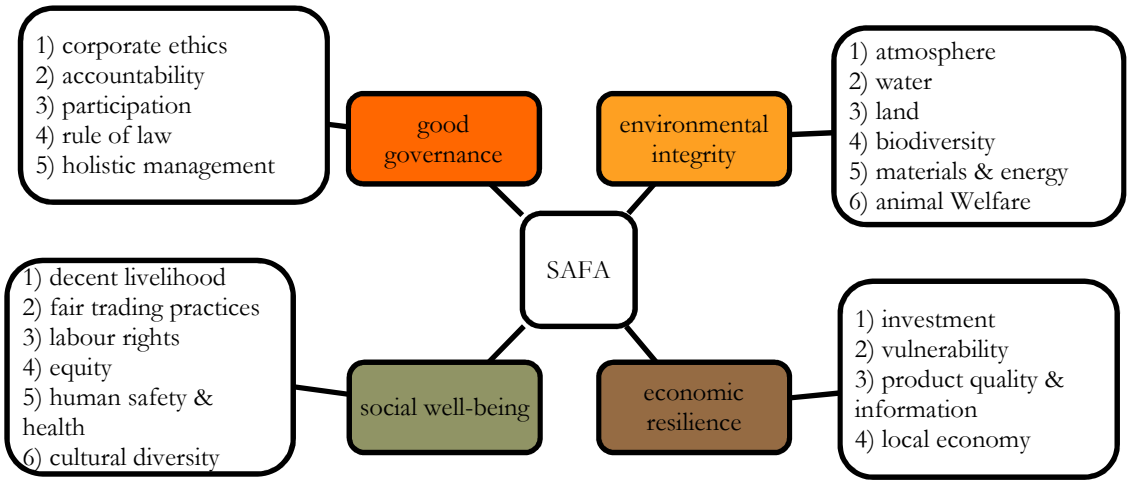


Figure 8 SAFA framework basic themes

Source: Adapted from FAO's Sustainability Assessment of Food and Agriculture Systems

Apart from those studies that seek to determine the key CSR challenges along the whole chain, there is also substantial literature which covers specific impacts. From the environmental perspective, there are a few environmental impacts assessment tools available, such as the input–output accounting approach, the Ecological Footprint (EF) and the Life Cycle Assessment (LCA) methods. We focus on the LCA methodology because it is effective due to high relevance, good quality and availability of data (Reckmann et al., 2012; Thomassen & De Boer, 2005) and it is widely used by practitioners in the meat and dairy industry (Reckmann et al., 2012).

Environmental LCA measures the impacts at all the stages of a product's life including inputs, production, processing, manufacture, distribution, retail, consumption and disposal or recycling, and is common for determining environmental impacts. There is a number of such studies conducted on various dairy products in European countries, such as an Italian brand

of high quality milk (Fantin, Buttol, Pergreffi, & Masoni, 2012), yoghurt manufacturing from Portuguese milk (González-García, Castanheira, Dias, & Arroja, 2013), pasteurized and ultra-high temperature (UHT) milk, yoghurt, cream, butter and cheese from seven dairy plants in Serbia (Djekic et al., 2014), a comparative life cycle assessment of margarine and butter consumed in the UK, Germany and France (Nilsson et al., 2010) and milk in three Norwegian dairies (Eide, 2002). All the findings confirm that the major impacts occur at the agricultural phase, during the raw milk production at the dairy farms (Weidema, Wesnæs, Hermansen, Kristensen, & Halberg, 2008). The dairy processing plants mainly contribute to impact due to energy consumption, mostly through refrigeration and inputs of goods at the dairy gate, especially packaging (Djekic et al., 2014; Eide, 2002; González-García et al., 2013). Mitigation options for optimization of environmental impacts rely on the choice of the production/packaging portfolio, energy fuel profile, water optimization and waste management (Djekic et al., 2014).

Similar research was also conducted in the meat industry: a literature review of European pork LCAs (Reckmann et al., 2012), a pan European LCA based research suggesting measures to improve environmental performance of meat and dairy life cycle (Weidema et al., 2008), a comparative study of sixteen studies using LCA to assess the impacts of production of pork, chicken, beef, milk, and eggs (de Vries & de Boer, 2010). Their common finding was that the greatest impacts occur at the agricultural stage (de Vries & de Boer, 2010; Reckmann et al., 2012; Weidema et al., 2008) and then at the consumption stage (Weidema et al., 2008). With regards to slaughtering and processing, energy use was identified as a hotspot and one study mentioned packaging as well (Weidema et al., 2008).

Of course, academic research delves deep into details of sustainability in the meat and dairy food processing sectors but it is outside the scope of this report because although such research can contribute to improvement, it is not relevant to the process of setting the agenda and so it is not included in this section. An example of such research is an investigation into the potential sources of Salmonella spp. in a pork slaughter-line (van Hoek et al., 2012).

Before closing this section it is worth mentioning that there is an increasing body of literature discussing the possibility of reducing meat or dairy product consumption with a view to improving environmental conditions (Henning, 2011; Reynolds, Buckley, Weinstein, & Boland, 2014; Tukker et al., 2011), overall public health (An Pan, 2012; Henning, 2011) and food security (Buttriss, 2013; Stokstad, 2010). In general the findings are positive (Buttriss, 2013; Henning, 2011; Tukker et al., 2011), although serious considerations arise (Stokstad, 2010). There are also some innovative solutions from the aspect of meat reduction but taking a different approach e.g. the attempt to grow meat in a laboratory (Bartholet, 2011).

2.9 Meat and dairy within the EU

The food chain industry is of primary importance to the EU. Although in 2008 the sector generated EUR 751,008 million of added value, which percentage wise is a relatively low contribution to EU-27 Gross Domestic Product (GDP) i.e. just over 6% (Eurostat, 2011), it is still a source of livelihood for over 20% of the workforce (Eurostat, 2011). But apart from the industry's economic value, there is social and political value assigned to the food chain because food production is associated with food security and political independence (Eurostat, 2013a; UNEP, 2012). The EU is self-sufficient in meat and dairy products, a state which it is keen to maintain (Eurostat, 2011). Half of the food chain's added value came from agriculture and food/beverage manufacturing, contributing EUR 191,962 million and

EUR 195,308 million respectively. The other half can be broken down into different forms of retailing, wholesale and consumer services.

In terms of added value, food product manufacturing is the second largest industry within EU-27 manufacturing for 2010 (Eurostat, 2013b), second only to the manufacture of machinery and equipment and it was the largest in terms of employment (Eurostat, 2013b). Specifically, the production of meat and dairy products had the first and third highest turnover respectively in the food manufacturing sector but from the perspective of value added their positions changed to third and fourth place (Eurostat, 2013b) and together they account for 30% VA. To aid understanding, a value added breakdown of the food products manufacturing sector is shown in Figure 9.

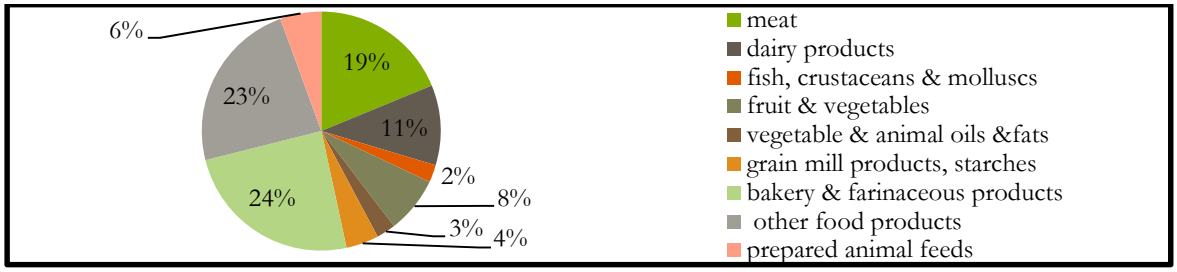


Figure 9 Division of subsectors in food products manufacturing sector in terms of added value

Source: Eurostat Manufacture of food products statistics - NACE Rev.2

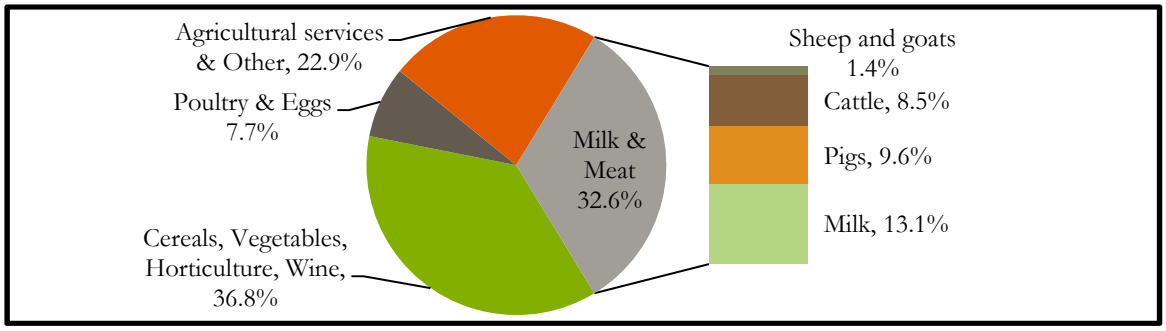


Figure 10 Share of products in EU-27 agricultural production 2013 (based on value)

Source: European Union, Directorate General for Agriculture and Rural Development 'Agriculture in the European Union, Statistical and Economic Information Report 2013'

Meat and milk also play a large role in the agricultural industry. As shown in Figure 10, milk and meat's added value together made up 32.6%, almost a third of the agricultural products' total added value, which for 2013 was estimated at EUR 394,015 million in the EU-27. Most of the meat and milk produced on the farm get passed on for preservation and processing to processors (Eurostat, 2011).

3 Methodology

In this section, the methodology applied in the study is described and justified. Initially a (1) literature review was carried out to develop a better understanding of corporate sustainability and disclosure, in order to find frameworks for the thesis and to determine sustainability challenges in the food chain. The next part involved (2) the text mining and transformation of company sustainability reports and web mining of relevant on-line information on their websites in order to determine sustainability practices. This was followed by (3) a content and thematic analysis of information concerning societal stakeholders in order to elicit their expectations and a simultaneous (4) comparative analysis of this information against corporate sustainability practices in order to identify legitimacy gaps and areas of improvement. Finally, (5) interviews were conducted and the information collected was used in order to discuss the feasibility of implementing the improvements. A graphic representation of this study's methodology is featured in Figure 11.

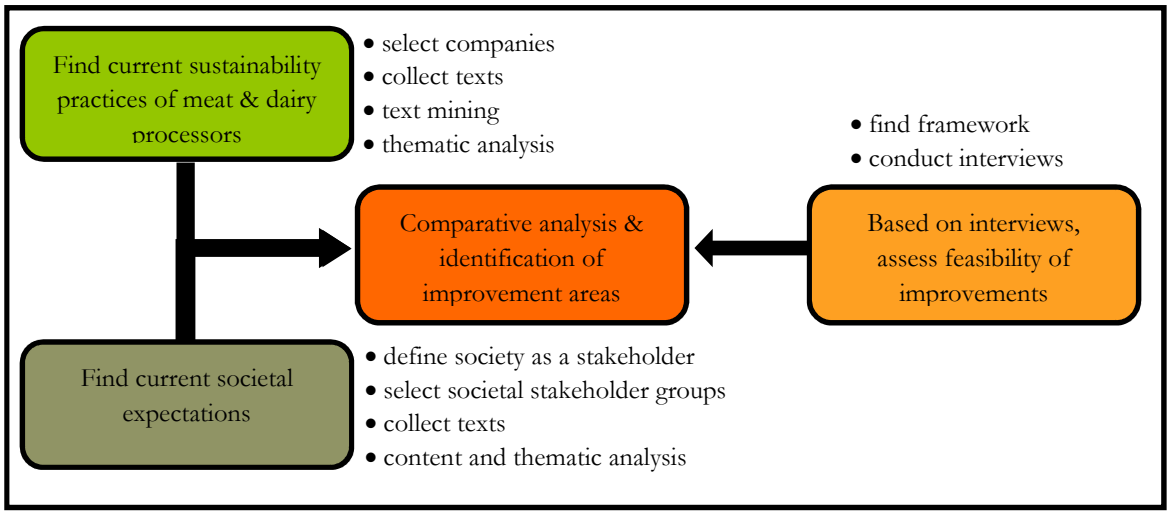


Figure 11 Research methodology

3.1 Literature review

A literature review was conducted to collect information about (i) sustainability in the business context e.g. terminology, fields or research etc., (ii) corporate sustainability disclosures, (iii) theories used to explain sustainability priority setting and disclosure with emphasis put on ST and LT, (iv) sustainability challenges in the meat and dairy industry as well as a description of the importance of the sector within the EU. Mainly academic literature was reviewed and accessed through Lund University's search engine which connects to a number of academic databases such as EBSCOhost, Emerald, Scopus and ScienceDirect; occasionally Google scholar was also used. During this part of the literature review, steps (i), (ii) and (iii), the conceptual frameworks, theories and methodological tools that guide the analysis of the paper as well as the data collection emerged. The frameworks are presented in the literature review chapter and the methodological tools are presented in this chapter. The information from step (iv) was used during the comparative analysis as reference and help to shape the suggested improvements.

3.2 Content analysis

The first RQ seeks to identify the key sustainability practices of the meat and dairy processors as a group. Bearing in mind that not all companies have sustainability priorities

and those that do set their own priorities, the purpose is to identify common themes and their relative importance. Therefore, a quantitative content analysis is applied to the sustainability reports and web-content of several corporations. Quantitative content analysis is useful in answering 'what' questions (Given, 2008), such as the one set in this study 'What are the current sustainability practices in the EU meat and dairy processing industries?' Content analysis is one of the main methods used for environmental, social and sustainability disclosure research (De Grosbois, 2012; Hahn & Kühnen, 2013; Sweeney & Coughlan, 2008) and its most basic application is the measurement of term occurrence (Barkemeyer et al., 2009; Sweeney & Coughlan, 2008). The specific technique that is used in this thesis is known as text mining and goes beyond the simple calculation of term occurrence, because it is followed by theme creation and then evaluation of their importance. At the end of the process the first RQ is answered and the key sustainability practices are defined.

Content analysis is also applied to the content (texts and visuals) of the official websites of societal stakeholders. This is in accordance with the fact that *'...content analysis could be applied to the official reports and policies of an organization; such an analysis may identify the stated priorities of that organization as well as reveal implicit political perspectives…'* (Given, 2008). Only content related to the themes identified in the text mining is considered i.e. information on fisheries is deemed irrelevant. Because the findings about corporate sustainability are organized into themes, to facilitate comparison the content from the stakeholder documents is either organized into themes or in some cases the stakeholders themselves have organized their expectations into themes e.g. the United Nations express their expectations through the UNGC and SAFA, which are organized into themes, which thereby erases the need for a thematic analysis. In this way current societal expectations related to the food industry are defined.

3.3 Text mining

In this paper a text mining approach is used to define the current trends in dairy and meat companies' sustainability practices. Text mining is the process of analysing large amounts of free text containing natural language in order to generate new information by establishing patterns (Barkemeyer et al., 2009; Gopal, Marsden, & Vanthienen, 2011). For the purposes of this paper, the most recent sustainability reports as well as the sustainability related information on company websites have been mined. The premise for this method is that the frequency with which a term appears in texts, indicates the attention and hence, the importance the concept receives (Barkemeyer et al., 2009; Liew et al., 2014). The principle is that the more a subject is mentioned the more important it is. Liew , Adhitya and Srinivasan (2014) used text mining in order to define sustainability trends in the process industries; it was also applied by Van Alstine and Barkemeyer (2014) on sustainability disclosures in the extractive industry in order to show how business development changes over time. Modapothala (2010) applied text mining to sustainability reports and uncovered differences in the topics of disclosure in different industries. Text mining has also been applied to other sources of information such as newspapers (Barkemeyer et al., 2009), in order to uncover changes sustainability topics of concern over time. This technique can also serve for analysis of blogs and websites (Gopal et al., 2011) and it is known as web mining.

3.3.1 Text mining process

1. Finding texts:
    i. Sustainability reports were downloaded from the official company websites as .pdf.
    ii. Sustainability related corporate web content, was copied to .txt documents from parent company webpages after thorough manual examination of website.
2. Preparation of texts:

i. All .pdf documents were transformed from .pdf to .txt by using Apache Tika.
ii. Content that could introduce bias was removed manually from .txt files such as content pages, headings, headers, footers and page numbers.
iii. In limited cases where texts were in a foreign language they were translated into English.

3. Processing texts: The texts from the previous steps were used as input in an open-source text mining application called Rapid Miner. The basic processing comprised:

i. *tokenize:* texts were split into lists of single word tokens as non-letter characters
ii. *transform cases:* all characters were transformed into lower case
iii. *filter stopwords:* English stopwords (e.g. and, a , the) were removed
iv. *filter tokens:* tokens comprising of 2 characters or less were removed
v. *stem porter:* suffixes of words were stemmed and then grouped, e.g. 'workable' and 'working' were aggregated as token named 'work'
vi. *generate n-grams:* consecutive single word tokens were identified to create bi-tri-quad grams
vii. *pruning:* tokens and n-grams that appeared in only one document were removed

4. Generating statistics:

i. Term frequency (TF) or term occurrence, where term might be a single token or n-gram, is the number of times each term appears in a document or group of documents.

5. Further manual processing: the output from the above are lists of terms and frequency statistics in excel format that need to be manually processed further in order to obtain useful information.

i. All non-sustainability related terms were removed.
ii. Tri or quadgrams that were subsets of bigrams were removed.

The outcome of these steps produced the final tables for term occurrence.

3.3.2 Conceptual ordering

Term occurrence analysis of the texts is based on single terms and does not take into consideration that the same concept or sister concepts can be described with a variety of words/phrases. For example the terms 'daily nutrition' and 'balanced diet' can be grouped together under the concept of nutrition and healthy lifestyle. By approaching the results from the perspective of concepts, the rankings visibly change. This means that results from the text mining programme needed to be reorganized into concepts in order to give a more representative view of what the most highlighted issues are. Each sustainability related term from the previous step was manually assigned to themes that had been created a priori by using the G3 GRI Food Processing Sector Supplement (GRI, 2000)[1] and the researcher's or researchers' experience. While assigning terms, changes occurred to the themes, as new relevant constructs emerged, irrelevant ones were deleted or redefined. Essentially the list remained the same but there were several minor changes, e.g. animal husbandry started out as a separate concept but then was incorporated into animal health due to very low frequency of related word occurrences. The final themes are presented in the findings chapter in Table 4. Basically sustainability was divided into four different subject areas, three are the elements of the triple bottom line i.e. environmental, economic and social and the fourth is sourcing, which is a major risk area for the food processing industry (see chapter 2.8). At each intersection subcategories of the parent term emerge e.g. sustainability – environment – energy - renewables. Words and n-grams were grouped to final or leaf nodes. Each node's size is based on the sum of term occurrences of all terms assigned to it or its child nodes.

[1] This part of the research was conducted before the publication of the G4 GRI Guidelines

3.3.3 Knowledge distillation

The results from the previous processing are a set of four matrices per industry, which are term occurrence and term occurrence by theme, for websites and sustainability reports. The information contained in these matrices had to be interpreted in order to find what the current sustainability practices are (Liew et al., 2014). This was done by comparing and analysing the data contained in the matrices for each industry.

3.4 Comparative analyses

The second RQ is 'Based on current societal expectations how can meat and dairy industries improve their current practices? '. Most of the information needed to answer this question was made available through the text mining of corporate sustainability disclosures and the content analysis of the websites of societal stakeholders. By comparing and contrasting the sustainability practices in an industry and the expectations of the societal stakeholders in that industry, congruence and legitimacy gaps were isolated. These are viewed as opportunities for improvement and so some suggestions are made. In order to increase the reliability and validity of the comparative analyses, additional data sources were used (Yin, 2003). More specifically, the information of the literature review concerning sustainability in the food industry was used as a measure of validity.

3.5 Interviews

During the comparative analysis some areas of improvement were identified. The final part of the thesis aims to discuss whether these improvements are possible. To this purpose interviews were conducted with relevant managers, namely environmental and CSR managers from meat and dairy processors. Managers were asked about the key drivers affecting their choice of priorities, currently and historically. Interviews were held via the internet, face to face and via email. The questions were based on a sustainability priority setting framework that is presented in the literature review section. The interviews comprised semi-structured questions based on topics that needed to be covered for the study but still allowing for the interviewee to influence the discussion. The interviews were audio recorded when consent was given by the interviewee. If audio recording consent was not given, notes were taken during the interview.

3.6 Sample selection

3.6.1 Company and interviewee

Since the geographical scope of the study is Europe, the largest dairy and meat companies whose headquarters are in Europe were chosen. The dairy companies were identified by using the Babcock Institute's list of largest global dairy manufacturers (Jesse, 2013), the Rabobank's Global Dairy Top 20 List (Hunt & Battum, 2012) and the meat companies by using Gira consultancy European Meat Company Panorama 2010/11-2015 (Gira, 2012). The European meat and dairy processing industry does not consist of only the giant processors (see chapter 1.2 for further details), there are also several medium to large companies that are an active part of the sector. Therefore, the selection criteria were broadened in order to get a more balanced view of the European reality. Large processors in each European country were sought by using online industry statistics from the Euromonitor. Contact was sought with all companies in the form of requesting interviews but the response rate was low.

3.6.2 Societal stakeholder

A discussion about civil society and societal stakeholders takes place in the literature section. Based on the intermediary step of the taxonomy presented there, three main societal stakeholder groups are defined: global society, national society and social groups and institutions.

Global society: The globalization phenomenon leads to the emergence of global civic actors (Lépineux, 2005). Although this study could not identify any such actors directly related to meat and dairy industries per se, there are some actors in the area of corporate responsibility who are working to promote not only engagement from companies but also standardization in practice and a shift towards common underlying goals and unified reporting, through the provision of guidelines and tools for working with these issues. Four actors were selected: the Organisation for Economic Co-operation and Development (OECD), the United Nations (UN), the GRI and the ISO and their expectations accessed through the OECD Guidelines for Multinational Enterprises, UNGC and FAO Sustainability Assessment of Food and Agriculture systems (SAFA), the GRI Sustainability Reporting Guidelines and the ISO 26000. The organizations and their initiatives were chosen because of their applicability to the meat and dairy industries and because of their global presence in industry overall. They are all briefly presented, with the exception of SAFA which was discussed in the literature review.

1) The OECD is an intergovernmental organization with 34 member countries that works to improve the economic and social well-being of people around the world. The OECD Guidelines for Multinational Enterprises are recommendations made by the OECD to multinational enterprises on responsible business conduct and contribution to sustainable development. The guidelines are voluntarily signed by governments who try to encourage their adoption by multinational enterprises operating in their jurisdiction. Most of the European countries are members of OECD.

2) The UN is an intergovernmental organization consisting of 193 member states focused on promoting international co-operation. The UNGC is a corporate responsibility initiative based on a set of ten principles in the areas of 'human rights', 'labour', 'environment' and 'anti-corruption' that should guide businesses' conduct. It is a whole framework providing among others tools, implementation advice, and reporting suggestions to businesses and the purpose is to help them contribute to sustainable development. It is up to each company to sign up for the challenge and decide to adhere to the UNGC. On top of very clear descriptions on the content of each of the principles there is also a spirit that companies should self-determine their scope of responsibility, if they think challenges related to their operations are not being covered by the principles.

3) The GRI is a non-(for)-profit organization which assists and promotes corporate sustainability reporting as a driver towards sustainable development. The aim is to make sustainability reporting common practice globally. The GRI provides companies with a comprehensive sustainability reporting framework that includes lists of economic, environmental and social impacts, which are referred to as aspects, on which a company can potentially report. Not every company has to report on all issues, so in the framework, guidelines are also provided on how to choose aspects that are important for each enterprise and for how the impacts can be managed and reported on, indicators are also included. Apart from general guidelines the GRI also publishes a food processing sector specific supplement.

4) The International Organization for Standardization (ISO) is an independent, non-governmental membership organization made up of our 165 member countries that develop international standards. Following the standards is of a voluntary nature. Standards take the form of documents that provide specifications, requirements and guidelines for products, services, processes, materials and systems. When organizations follow the same guideline, the output of their activity is then standardized, thereby facilitating quality, efficiency and trade. There are more than 19,500 International Standards that cover almost every industry. The ISO 26000 standard, which is used here provides guidance on how businesses and organizations can operate in a socially responsible way.

National societies: The European Union is based on the rule of law that means it acts in accordance to and within the limits set down by treaties agreed by all member countries. In some areas the treaties confer on the union exclusive competence, which means that only the European Union can legislate and stipulate legally binding acts, and in some areas the treaties confer on the union shared competence, which means that the member states can only legislate when the union is not exercising its competence. A number of the areas related to sustainability, such as the establishing of the competition rules, social policy, environment, consumer protection and common safety concerns in public health matters, are areas where either the union has exclusive or shared competence (consolidated version of the Treaty on the Functioning of the European Union, Part One: Principles, title I: Categories and areas of Union Competence). This effectively means that the EU can exert more influence through legislation and policy on company practices than member countries. This is the reason why in this thesis the expectations of national society, which is represented by governments that are elected, are determined by examining the EU rather than individual countries. The EU is made up of a number of governmental structures that are active in different areas and promote change in different ways e.g. European Parliament, European Commission, European Economic and Social Committee, Committee of the Regions, EU agencies and European Investment Bank. In this thesis the main topics of interest for the EU are not elicited by covering all documents publicized by the aforementioned structures, instead it uses the main topics as published on the EU's main webpage 'http://www.europa.eu' under the heading 'EU by topic' which describes the main areas of focus and also the main goals in each area. From these topics, the ones relevant to meat and dairy processors are selected and some issues which are very specific to this food industry are researched into in more detail.

Social Groups and Institutions: In this thesis the objective is to identify social groups and institutions that are relevant to the context of the European meat and dairy processing industry. In total 27 social groups and institutions were assessed. These institutions were selected because of their size and influence in Europe, and because of the English data availability. This was determined by the author's own research and also corroborated by the study of 'Europe's leading NGOs and their contribution to policymaking in Brussels' conducted by the consulting company Sigwatch (Blood, 2008). These organizations are presented in the relevant analysis chapter, where their aim and reach is briefly described. It must be noted that their expectations were elicited through various means of content analysis because there were so many entities. From the topics that they focus on, which are presented in Table 11, the ones relating to the food industry were selected and manually organized into themes and then theme occurrence was calculated. The themes that emerged were not exactly the same as the ones used when defining meat and dairy processors' sustainability practices.

4 Findings

4.1 Statistics on Sustainability Disclosures

Two sources of information were used in the process of identifying current practices, namely, sustainability reports and sustainability-related information featured on the meat or dairy processors' main corporate webpages. Further information about the corporation selection criteria can be found in chapter 2.6.1.

Table 1 Dairy processing companies

	Company	Leader	Report	Web
1	Nestlé S.A (CH)	✓	✓	✓
2	Lactalis –Parlamat (FR)	✓		✓
3	Danone (FR)	✓	✓	
4	Royal FrieslandCampina (NL)	✓	✓	✓
5	Arla Group (DK)	✓	✓	✓
6	Müller Group (DE)	✓		
7	DMK (DE)	✓	✓	✓
8	Groupe Sodiaal (FR)	✓	✓	✓
9	Bongrain SA (FR)	✓	✓	✓
10	Glanbia Group (IE)	✓		✓
11	Unilever	✓	✓	✓
12	Tine SA (NO)	✓	✓	✓
13	Bel Group (FR)	✓	✓	✓
14	Dairy Crest (UK)		✓	✓
15	First Milk (UK)		✓	✓
16	Hochland Group SE (DE)			✓
17	SC Albalact SA (RO)			✓
18	Berglandmilch eGen (AT)			
19	Mlekpol (PL)			
20	OMK (BG)			
21	Tere AS (EE)			
22	Fage S.A. (EL)			
23	Bonafarm Group (HU)			✓
24	Kerry Foods(IE)			✓
25	Granolo SPA (IT)			✓
26	Food Union (LV)			
27	Rokiskio Suris (LT)			
28	IMB Mlekara A.D. (FYROM)			✓
29	Lactogal (PT)			✓
30	Rajo (SK)			
31	Meggle Group (DE)			✓
32	MADETA (CZ)			

Naturally, not all the companies selected for this study actually published reports or included sustainability related-information on their websites.

Therefore, on the basis of the assumption that disclosure on these issues is used for legitimizing purposes, statistics on the presence or lack of disclosure are also findings that can be used in this study.

For the European dairy processing industry, 32 companies in total were selected to be part of this study, out of which 13 are considered to be European and international industry leaders. Approximately 77% of these 13 companies publish sustainability reports and 85% address sustainability on their websites, in comparison to 11% and 53% respectively of the other 19 companies which are not industry leaders. In total, 12 companies out of 32 publish reports. For the research reports the following 10 companies were used: Nestlé, Danone, FrieslandCampina, Arla, Müller UK, DMK, Sodiaal, Bongrain, Dairy Crest and Bel Group. 3 were dismissed: Unilever, Tine and First Milk. Unilever's report was omitted so as not to create bias because the company engages in many different production activities and thereby, many irrelevant topics would be introduced. Tine's report was in html format so the information was

used in the web analysis instead and First Milk's report could not be transformed into the right format for text mining. Glanbia also publishes a report which focuses solely on sustainability in the US and is therefore, outside the scope of this study.

One interesting observation concerns increased disclosure from companies based in the UK. This is understood from the fact that Dairy Crest and First Milk, both based in the UK, are the only two companies which are not industry leaders that publish reports. Additionally the Müller Group does not publish a group report but its UK subsidiary publishes a report as and gives relevant information. In total, 21 out of the 32 companies have some information relating to sustainability on their website. In the case of Nestlé and Unilever only information relevant to diary processing was used because their diverse activities could introduce a bias.

A few more meat processing than dairy companies were included as part of this study, the total being 37, out of which 14 are considered to be European and international industry leaders. Only 5 companies, all of which are industry leaders, were found to publish reports. On the other hand 28 out of the 37 companies, i.e. approximately 78%, address sustainability on their websites and all of the industry leaders have sections devoted to this subject. For the research, reports from the following five companies were used: Westfleisch, Dunbia, Van Drie, Atria and Danish Crown. The information on Danish Crown's website was identical to the information in the report so it was only used as a report.

Table 2 Meat processing companies

	Company	Leader	Report	Web
1	Tönnies (DE)	✓		✓
2	Westfleisch (DE)	✓	✓	✓
3	Danish Crown (DK)	✓	✓	✓
4	Atria (FI)	✓	✓	✓
5	HK Scan (FI+SE)	✓		✓
6	Bigard Group (FR)	✓		✓
7	Cooperl (FR)	✓		✓
8	Terrena (FR)	✓		✓
9	Inalca (IT)	✓		✓
10	Veronesi Group (IT)	✓		✓
11	Van Drie (NL)	✓	✓	✓
12	VION (NL)	✓		✓
13	ABP Food (UK)	✓		✓
14	Dunbia (UK)	✓	✓	✓
15	Tican (DK)			✓
16	Westvlees (BE)			
17	Boni Holding (BG)			
18	RĪGAS MIESNIEKS (LV)			
19	Prime Ltd (MY)			
20	Sláturfélag Suðurlands(IS)			
21	Nortura (NO)			✓
22	AS Rakvere Lihakombinaat (EE)			✓
23	Biovela (LT)			
24	Raporal, S.A (PT)			✓
25	Bell AG (CH)			✓
26	Ifantis (EL)			
27	Bonafarm (HU)			✓
28	Perutnina Ptuj (SI)			✓
29	Smithfield Prod (RO)			✓
30	PIK Vrbovec (HR)			✓
31	Carnibona Group (SK)			✓
32	Böseler Goldschmaus (DE)			✓
33	Vall Companys (ES)			
34	Grupo Batallé-Juia (ES)			
35	Dawn Meat (IE)			✓
36	Rosderra (IE)			✓
37	Animex pl (PL)			✓

4.2 Terms that occur most frequently

The texts that were collected from the websites and reports were manually and technically processed in order to find the terms that occur most frequently. The total number of terms that appeared in more than one document was 10,849 for the dairy reports, 3,725 for the dairy webpages, 2,839 for the meat reports and 3,923 for the meat webpages. These include single terms, bigrams, trigrams and quadgrams referring to a wide variety of topics. From these, the top 15 sustainability-related terms were taken by using two criteria: firstly, term frequency, which means the total number of times any term appears in the documents and, secondly, the strong correlation with a sustainability topic. The following table shows the top 15 sustainability terms for each of the following groups: dairy reports, dairy webpages, meat reports and meat webpages. The first immediately notable observation is that 8 out of the 15 terms, namely, 'nutrition', 'GHG emissions', 'raw materials', 'health and safety', 'food safety', 'energy consumption', 'environmental impacts' and 'product quality & assurance' are common to all four result sets. This is certainly an indicator of cohesion within the communicated information regardless of topic and medium.

Table 3 Top15 sustainability related terms

	DAIRY		MEAT	
	Reports	Web	Reports	Web
1	nutrition	nutrition	animal welfare	animal welfare
2	GHG emissions	GHG emissions	GHG emissions	food safety
3	raw materials	raw materials	health and safety	health and safety
4	health and safety	product quality & assurance	raw materials	environmental protection
5	food safety	value/supply chain	food safety	environmental impacts
6	energy consumption	food safety	nutrition	value/supply chain
7	value/supply chain	environmental impacts	water consumption	product quality & assurance
8	human rights	local community	product safety	raw materials
9	local community	code of conduct	energy consumption	Nutrition
10	sustainable dairies	energy consumption	environmental impacts	animal health
11	water consumption	sustainable dairies	product quality & assurance	code of conduct
12	code of conduct	health and safety	minimum wage	GHG emissions
13	environmental impacts	renewable energy	human rights	carbon footprint
14	product quality & assurance	water consumption	animal health	energy consumption
15	working conditions	product safety	carbon footprint	local community
15			working conditions	

Key: ☐ common to all ■ only in meat ■ only in dairy ■ unique terms ■ occur twice or thrice ■ only in reports

According to the findings 'nutrition' is a hot topic. Another topic of utmost importance concerns food safety and quality. It is reflected in the terms 'food safety' and 'product quality & assurance' found in all lists and 'product safety' which is cited in two result sets. There are three environmental issues that are found in all four result sets 'GHG emissions', 'energy

consumption' and 'environmental impacts'. On similar themes but with lower occurrence the terms 'carbon footprint', 'renewable energy' and 'environmental protection' can be found in the Meat industry Reports', the Dairy Websites' and the Meat Websites' result sets respectively.

There are terms that are industry specific such as 'animal health' and 'animal welfare', which are only used in the meat industry. There are also two terms: 'water consumption' and 'sustainable dairies' that appear only in the dairy datasets. 'Sustainable dairies' and 'raw materials' refer to integration of sustainability upstream but there are also two terms that refer to integration of sustainability upstream as well as downstream. These are 'value chain' and 'supply chain' which are considered synonymous and have therefore, been aggregated and appear in three out of the four result sets.

There are a few more terms that appear in more than one set; these are 'local community', 'code of conduct', 'working conditions', and 'human rights'. The above mentioned terms together with 'minimum wage', which shows up in meat industry reports, and 'health and safety' cover social issues relating to the employee and to local communities. It is worth noting that 'human rights' is a term that appears in the top spots only in the reports from the two industries. This could be due to reports being written with different audiences in mind. It is also useful to note what does not appear in the top terms; one clear observation is the lack of an economic perspective. None of the terms included in the lists make reference to economic sustainability. The findings from term frequency analysis are discussed in further detail in chapters 4.3.1-4.3.4 in conjunction with the findings from the thematic analysis that follows.

4.3 Themes that occur most frequently

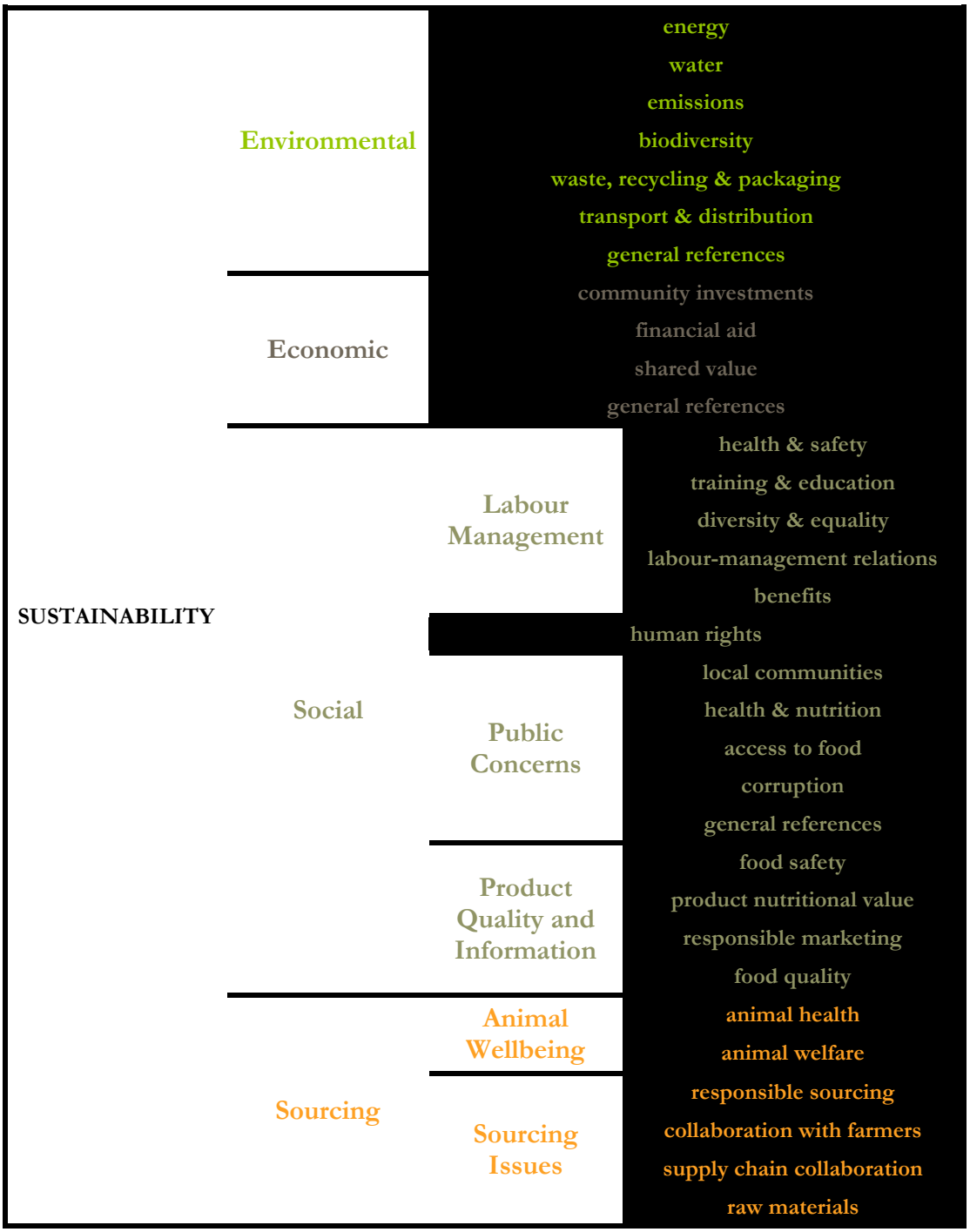
The previous analysis was based on single terms. The problem with basing the analysis only on single terms is that language is flexible; ideas can be paraphrased, synonyms can be used, different words are used to express the same or similar meaning e.g. 'food safety' and 'product safety'. Furthermore, the purpose of this study is to determine what the current practices are and, therefore, one needs to not only look at the frequency of terms but also at the frequency of themes. For example, the terms 'nutritional value' and 'balanced diet' can be grouped together under the construct of nutrition and healthy lifestyle or the following terms: 'collective bargaining', 'employee representatives', 'freedom of association', 'labour organization', 'staff representatives', 'trade union', 'works council' can be grouped as labour management relations. Based on the text mining programme's results and the knowledge obtained from the literature review, themes were created to give a more representative view of the current practices. Finally, 32 themes emerged and are presented in Table 5. The underlying structure comprises the three sustainability pillars: environmental, economic and social. There is another dimension which is very important for this sector and that is sourcing (see chapter 2.8 in literature review).

Table 4 Involvement of sustainability pillars in overall discourse

	Environmental	Economic	Social	Sourcing
Dairy Reports	29.5%	5.7%	49.8%	15.0%
Dairy Web	29.8%	7.4%	41.7%	21.1%
Meat Reports	23.3%	2.9%	55.2%	18.6%
Meat Web	28.6%	2.9%	48.3%	20.2%

The percentage of involvement of each pillar in the overall sustainability discourse is presented in Table 4 and calculated through the formula: Involvement in sustainability= $\frac{\text{Number of topic specific terms}}{\text{Total sustainability terms}}$ 100%.

Table 5 Themes for sustainability practices



The first observation from Table 4 is that the range of issues for each pillar is not large which implies homogeneity in the amount attention the topics receive in the two industries and mediums. For an ideal balanced view of sustainability, each topic would receive equal attention i.e. approximately 25%.

Environmental issues almost achieve this goal. Economic issues, on the other hand are underrepresented, especially in the meat sector. Social issues constitute the biggest range and also the largest involvement in general, probably because of the high complexity thereof. Finally, sourcing, which also includes animal welfare issues, takes up a fair amount of document space regardless of sector or medium. After reorganizing all the terms into themes, the top 15 themes look quite different from the top 15 terms (Table 6).

Table 6 Top 15 sustainability themes

	DAIRY		MEAT	
	Reports	Web	Reports	Web
1	health & nutrition	food quality	health & safety	health & safety
2	waste & recycling	local communities	food safety	food safety
3	health & safety	health & nutrition	product nutritional value	general environmental references
4	product nutritional value	raw materials	animal welfare	food quality
5	emissions	financial aid	animal health	animal welfare
6	energy conservation	emissions	water conservation	product nutritional value
7	water conservation	collaboration with farmers	energy conservation	energy conservation
8	biodiversity	waste & recycling	food quality	animal health
9	responsible sourcing	general environmental references	raw materials	waste & recycling
10	corruption	responsible sourcing	health & nutrition	health & nutrition
11	food safety	health & safety	employee benefits	corruption
12	collaboration with farmers	food safety	training & education	water conservation
13	training & education	energy conservation	general environmental references	collaboration with farmers
14	local communities	product nutritional value	transport & distribution	local communities
15	diversity & equal opportunity	transport & distribution	local communities	transport & distribution

Key: ☐ common to all ■ only in meat ■ only in dairy ■ unique terms ■ occur twice or thrice ■ only in reports

Out of the 32 themes 5 are common to all result lists: 'health & nutrition', 'health & safety', 'product nutritional value', 'energy conservation' and 'food safety', 9 appear in 2 or 3 lists: 'waste & recycling', 'water conservation', 'corruption', 'collaboration with farmers', 'training & education', 'local communities', 'food quality', 'raw materials' and 'transport and distribution' and 4 are unique: 'biodiversity' & 'diversity & equal opportunity', 'financial aid' and 'employee benefits'. There are also 4 themes that are industry specific: 2 for the dairy industry: 'emissions' and 'responsible sourcing' and 2 for the meat industry: 'animal welfare' and 'animal health'. In total 22 out of the 32 themes find their way at least once into the top 15 themes.

A more in-depth analysis of the top terms will be made in conjunction with the presentation of the findings for each of the themes which follow in the next chapters. The results are presented in table form and then discussed in parallel with the previous findings. In the following tables, the themes are presented in the first column; the next column briefly gives the involvement of the themes in the mother concept e.g. 'biodiversity's' involvement in 'environmental issues' and the following two columns depict noteworthy differences concerning the relevant theme with respect to meat and dairy industries in the one column and webpages and reports in the other.

4.4 Environmental perspective

All environmental issues regardless of medium and sector have an involvement ranging between 7% and 22%, which effectively means that all topics receive attention although some small differences do occur in the amount. There are 7 themes: 'energy conservation', 'biodiversity', 'transport and distribution', 'waste and recycling', 'water conservation', 'emissions', and 'general references'. The first 4 have the most stable involvement in environmental issues while involvement varies for the last 3 listed.

Table 7 Findings from the environmental perspective

	Involvement in environmental issues	Meat vs Dairy	Webpages vs Reports
energy	very stable ranging between 15.3% – 20.4% focus on energy conservation (65% - 78%) rather than renewables	a little higher in meat industry	slightly higher in reports
water	some variance in the attention this topic receives both from industries and mediums (9.8% - 22.2%)	slightly higher for meat industry(≈5%)/ dairy focus on water conservation but meat focus equally on discharge and conservation	a bit higher in reports (≈ 10% difference for meat and ≈ 5% for dairy)
emissions	some variance (9.2% -18.1%) focus is almost exclusively on GHG and climate change	big difference importance (≈10% higher for dairy)	NOI
biodiversity	stable involvement (≈ 9%) slightly higher (14.7%) in dairy reports	NOI	NOI
waste & recycling	stable involvement between 12% -19%	NOI	NOI
transport & distribution	stable involvement between 7%-14%	NOI	NOI
general references	large variance (8%-22%)	NOI	higher frequency on the webpages

Energy was pinpointed in the LCAs as the major hot spot for the meat and dairy processors and there is some evidence to support this in the findings. 'Energy conservation' as a theme includes efficiency, conservation and the introduction of renewables such as biogas and solar power. Its involvement is very stable overall and it is the only common environmental theme in all the top 15 thematic result sets. There are two energy-related terms in the top 15: 'energy consumption', which is also common to all and 'renewable energy', which is unique to dairy webpages. Focusing on energy conservation is an efficient sustainability practice because it produces benefits for the environment and the corporation, which has direct economic incentives to reduce consumption and subsequently, cost. Legislation and

government-driven policies are also strong in this area because energy conservation is seen as a means of establishing national energy security.

'Water conservation' as a theme encompasses the sourcing and consumption aspects i.e. 'water efficiency', 'water usage' and 'withdrawal' as well as the discharge aspects i.e. 'water emissions' and 'wastewater treatment'. As a term 'water consumption' appears in all the top 15 except for meat websites and as a theme it appears it all the top 15 except for dairy websites and its involvement in environmental issues is higher in the reports, so it is a topic that is discussed more in reports. Water is more significant in dairy according to terms but this changes when aggregating water as a theme, where its involvement is higher in the meat industry. This underlines the fact that when using text mining, thematic statistics are more representative than single term statistics because although both meat and dairy have relatively high water footprints, that of meat is considerably higher (Mekonnen & Hoekstra, 2012). Although water is an issue for processors, the main impacts occur on the farm or derive from the inputs at the farm gate (Mekonnen & Hoekstra, 2012).

'Emissions' include all climate term-related terminology as well as ozone depletion and refrigerant leaks. Some findings stand out clearly: the first is that terms in this theme are almost exclusively GHG-related. The second is that, despite the fact that 'GHG emissions' as a term occurs in all 4 top 15 and that the term 'carbon footprint' appears in the top 15 only for the meat sector (webpages and reports), as a theme it strangely has a much higher involvement in the dairy sector than the meat sector. When taking into consideration the global concern regarding climate change and the recognition that methane gas emitted from food-producing animals as well as the role that the whole food chain's carbon footprint contributes to global warming (Gerber, 2013), it is understandable why the theme is important for the dairy industry but not why it has less importance in the meat industry.

'Biodiversity preservation' is more difficult to define as it covers a number of topics such as deforestation and preservation of ecosystems and notions such as 'natural habitat', 'construct wetland', 'land use', 'forest management', 'pesticides' and 'soil'. There are no terms related to this theme in the top 15. As a theme, however, it is the 8th most important in the dairy reports and in general, it has slightly higher involvement in the dairy sector. Although land use and deforestation are issues connected upstream, they have very little direct impact for the producers, which is possibly the reason why they are not top themes but nevertheless still receive some attention. It is not clear why dairy reports are more involved in this question.

'Waste and recycling' also includes packaging and text related to landfill, material resources and hazardous waste such as 'cardboard box', 'reduce/avoid waste', 'resource efficiency', 'waste management' and 'recyclable'. No waste-related terms are in the top 15 but 'waste and recycling' as a theme is in the top 10 for all except meat reports. For dairy reports it only takes 2nd place. This is another indication of the considerable difference in results between terms and themes. According to the LCAs, packaging is a key environmental hotspot for the processing industries, especially in the case of the dairy sector (and milk). This is mirrored in the results.

'Transport and distribution' includes terms such as 'logistics', 'vehicles', 'milk collection', 'collection rounds' and 'trucks'. It covers the transport of animals, milk and other materials to the manufacturing plant and then the distribution of the products to the retailers but it does not include issues relating to animal conditions during transport. No such terms turn up in the top 15 term sets but as a theme it does appear in the top 15 result sets for dairy reports, albeit in very low positions (14th or 15th).

'Environmental challenges/footprints/impacts/issues/protection/responsibility' are some examples of the terms included in the theme 'general environmental references'. In the top 15 terms 'environmental impacts' is common to all data sets and 'environmental protection' is unique to meat websites, taking 4th position. Generalized terms have a much higher involvement in webpages than in reports. The generic terms that are used to describe all forms of environmental challenges are indicative only of a general disposition to address the effects the company has on the environment but do not reflect concrete actions.

The three articles on sustainability in the food chain, which were introduced in the literature review, do not shed much light on the environmental impacts of the processors. Instead they all pinpoint agriculture as the component of the food chain that impacts most on the environment. The industry report actually considers sustainable agriculture as one of the four CSR challenges faced by manufacturers (Prescott et al., 2002). Based on this Maloni and Brown (2006) stress the importance of industry and retailers managing environmental issues throughout their supply chains and Forsman-Hugg et al (2013) suggest it is equally as important for companies to mitigate impacts along the product's lifecycle as it is to mitigate impacts that arise from their operations. They later also name climate change and eutrophication of waters as the most important environmental concerns connected to food production.

4.5 Economic perspective

Regardless of whether results are obtained via themes or terms, economic issues are the least represented. In the result sets for the top 15 terms, none of the terms refer to economic sustainability. In the top 15 themes 'financial aid' appears in the dairy webpages in 5th place. In the thematic analysis, the list of economic themes was initially longer but there were not enough terms to support some themes so finally 4 themes emerged: 'community investments', 'financial aid', 'shared value' and 'general references'.

Table 8 Findings from the economic perspective

	Involvement in economic issues	Meat vs Dairy	Webpages vs Reports
community investments	large variance (0%-22%)	non-existent in meat sector but quite important for dairy	NOI
financial aid	most important topic but with a large variance	higher in meat (≈15%)	higher in webpages (≈25%)
shared value	almost identical stats webpages (≈3.5%) and reports (≈13.5%)	NOI	a bit higher in reports (≈10%)
general references	large variance (5.8% - 22%)	NOI	NOI

'Community investments' refers, among other things, to collaboration with local partners and local suppliers and even volunteer work. Some examples of terms are 'local economy/farmers/dairy', 'locally sourced' and 'community work'. It is noteworthy that this issue has high involvement in the dairy sector but almost none in the meat sector. As milk is collected from the dairy, it can be argued that the contact between the rural community and the processing unit is more frequent and thus closer in the dairy industry than in the meat industry and for this reason they take a more active role in the community in general. There is a fine line between the themes 'community investments' and 'local communities' in the social dimension. 'Community investments' are seen more as efforts to support the community's economy by either providing work or sourcing locally whereas 'local

communities' refers to other activities undertaken such as social events and more generalized action like creating a development plan.

'Financial aid' which encompasses charities, donations, emergency aid, grants and even NGOs and includes terms such as 'charitable causes/projects', 'donated', 'humanitarian aid', 'sponsorship' and 'Red Cross donation' is by far the most important economic topic, reaching 90% involvement for meat webpages and not falling below 52% in dairy reports in the economic sustainability pillar . It is also the only theme to make it into the top 15 themes in the dairy websites and in general, it has much higher involvement in the webpages. The reasons behind this could be that firstly, it is a widely-applied marketing tactic for a company to associate itself with charitable causes in order to create a positive image (Adams & Hardwick, 1998) and secondly, the website has a wider audience than the reports. Moreover, in the article 'CSR in the food supply chain' Maloni and Brown (2006) identify what they call the 'community' as one of the eight aspects of CSR but they go on to define it as a mix of financial donations, volunteering and what is called 'local community' in this paper, but they say that almost all action revolves around financial donations so it is not surprising that the latter, which has been taken as a separate theme in this thesis, has such high involvement.

'Shared value' comprises only a few terms such as 'create jobs', 'share value or profit' and 'milk price' and relates to the notion that value needs to be shared along the supply chain in order for all businesses and enjoy longevity. Terms related to this theme are more commonly found in reports. Bearing in mind the economic importance of the food chain as a source of livelihood to almost 20% of the European population and the importance of the meat and dairy processing industry as part of the sector (see chapter 2.9 for details), it is surprising that there are not more terms relating to shared value along the chain and discussion of prices given to farmers etc. This is reflected in other literature. For instance, Forsman-Hugg et al (2013) say that with respect to economic responsibility being categorised as one of seven CSR areas, two main issues exist, both of which are related to shared value. The first is the economic impacts of food production on the different stakeholders and society and the second concerns the transparency of price formation in the food chain. Also Maloni and Brown (2006) define fair trade, one of their eight CSR components, as giving suppliers fair prices that ensure their financial robustness.

Finally, 'general references' are all generic references and bigrams that usually start with the term 'economic' such as 'economic/growth/performance/development/activity'. There is a large variance in the appearance of such terms but their existence is evidence that economic issues are discussed, although not widely.

4.6 Social perspective

The social pillar comprises many different issues so they have been broken down into 4 themes named 'labour management', 'human rights', 'public concerns' and 'product quality and information'. Their involvement in the social issues is presented in overview in Table 9 and in more detail in Table 10. There is no prerequisite that all topics have to be covered equally i.e. 25% involvement. The range of involvement for each topic is not very big but still the different topics do have varying importance across different mediums and industries.

Labour Management: In meat reports clearly 'labour management' comprising 'health and safety, 'education and training', 'diversity & equal opportunity', 'labour - management relations' and 'benefits', is the most important issue. By consulting Table 10 we can trace back the cause of this to the cumulative effect of 'health and safety' being the most

important topic in the meat industry as well as 'training and education' and 'benefits' having medium involvement in reports.

Table 9 Involvement of main categories in social discourse

	Labour Management	Human Rights	Public Concerns	Product Quality & Information
Dairy Reports	30.6%	5.6%	37.3%	26.4%
Dairy Web	23.3%	2.3%	36.6%	37.9%
Meat Reports	41.0%	4.8%	20.6%	33.6%
Meat Web	27.2%	4.0%	27.6%	41.2.%

Table 10 Findings from the social perspective

		Involvement in social issues	Meat vs Dairy	Webpages vs Reports
Labour Management	health & safety	very important, some variance (11%-19%)	most important meat topic, 3rd for dairy	NOI
	training & education	medium importance, low variance (3.9% – 6.0%)	NOI	slightly higher in reports
	diversity & equality	medium importance, low variance (4.3% – 6.3%)	slightly higher in dairy	NOI
	relations labour management	≈2% involvement except meat reports 3.7%	NOI	slightly higher in reports
	benefits	some variance (1.3% – 6.2%)	NOI	slightly higher for reports (≈4%)
	human rights	focus on general human rights concerns (≈4.8%) , slightly lower in dairy webpages	NOI	NOI
Public Concerns	local communities	very important for dairy webpages 14%, medium for rest ≈6%	NOI	NOI
	health & nutrition	very important, some variance (7.0% – 17.9%)	very important for dairy, medium for meat	NOI
	access to food	vow & varying involvement	low involvement dairy ≈ 2.5%, almost 0% meat	
	corruption	medium involvement in all information sources ≈6%	NOI	NOI
	general references	not many (1.5%-2.9%)	NOI	NOI
Product Quality and Information	food safety	very important topic, some variance (6.8%-14.6%)	higher in meat ≈4%	higher in webpages ≈4%
	product nutritional value	stable involvement ≈10% and high importance	NOI	NOI
	responsible marketing	low and variant involvement (1.7% -4.1%)	NOI	slightly higher in reports
	food quality	important topic online but medium involvement in reports (5.7%-7.4%)	NOI	higher in webpages ≈ 9% difference

'Health and safety' refers to the health and safety of employees and comprises many terms such as 'accident rate', 'absenteeism', 'ohsas', 'noise', 'injury', 'safe work', 'sick leave',

'working conditions', 'safety management' and even the term 'health and safety'. It is clearly a very important topic as firstly, it is found in every result set of the top 15 terms and themes and secondly, it has between 11% - 19% involvement in social issues as a whole. In fact it is the top theme in meat reports and webpages. In the top 15 terms there is also another relevant term, 'working conditions', which appears in both of the report result sets. The labour work especially in the meat processing industry is physically hard and repetitive work, where accidents can easily occur (EFFAT, 2010) so it is not surprising that it receives so much attention.

The following 3 themes 'training and education', 'diversity & equal opportunity' and 'benefits' have medium involvement in social issues. 'Training and education' also covers the opportunities for personal development and includes terms such as 'career opportunities', 'development of skills', 'group training' ,'apprenticeships' and 'training programme'. Some examples of terms in the theme 'diversity & equal opportunity' are 'employee disabilities', 'gender equality', 'male female', 'sexual orientation' and 'young people opportunity'. As a theme it appears on the bottom rung of the top 15 result set for dairy reports. 'Benefits' has terms such as 'pension', 'healthcare', 'employee benefits', 'life-work balance' and 'wage' grouped under its title. It is quite an important theme for meat reports since it takes 10th place in the top 15 themes and the term 'minimum wage' appears in the top 15 terms.

The last category in the group is 'labour - management relations' with relatively low involvement. Terms in this category refer almost solely to the opportunities the labour force has to collectively negotiate e.g. 'collective bargaining', 'employee/staff representatives', 'freedom of association' and 'works council'.

'Labour management' or 'occupational welfare' (Forsman-Hugg et al., 2013) and 'labour & human rights' (Maloni & Brown, 2006) is considered one of the seven or eight key issues respectively in said literature. Both emphasize working conditions and safety as well as compensation and equality in treatment. Both also touch upon worker rights, human rights and also training and motivation. When these are compared to the above, approximately the same issues are covered albeit with slightly different emphasis between the literature and the findings.

Human Rights: 'Human Rights' started out as intermediate category with 4 themes 'non-discrimination' 'child & forced labour', 'complaints & whistle-blower' and 'other' but there were not enough terms to support these categorizations. So finally everything was aggregated to one theme 'human rights'. It has medium involvement across both sectors and mediums but overall, it is not enough for the theme to earn a place in the top 15, although as a term it does appear in the top 15 in the results from the reports of both industries. It is not a forgotten issue but it ranks lower than nearly all labour management themes. Human rights does not feature prominently in the literature reviewed either, although topics such as child abuse, illegal labour are discussed as part of labour issues.

Public Concerns: 'Public concerns', which is made up of 5 themes 'local communities', 'health & nutrition', 'access to food', 'corruption' and 'general references' is the most important and diverse social topic in dairy reports. The first 2 themes stand out for their importance because they are common to all result sets in the top 15 themes. 'Corruption' is also a frequently encountered theme and the remaining two have rather low involvement.

Apart from being a theme, 'local communities' is also a term that appears in the top spot for the dairy websites. There are other terms in this theme as well, such as 'community

engagement', 'cultural projects', 'development programme', 'rural action/areas/communities', 'marathon' and 'support art'. In the overall social discourse it has medium importance except in dairy webpages. It is important to define the content of the theme because, for example, the word 'community' is used by Maloni and Brown (2006) to primarily discuss philanthropy and financial aid and to a lesser extent other issues e.g. arts, educational support, health care etc, but in this thesis philanthropy and financial aid are part of the economic theme 'financial aid'. Forsman-Hugg (2013) use the term 'local well-being' to cover a rather grey area which they call '...the interaction between a company and its specific markets…'. Regardless of the exact content of the theme, there is a strong indication that supporting the local community and impacting it in a positive way is a very important part of sustainability so it is not surprising that this is a big issue for meat and dairy processors.

'Health & nutrition', comprising diverse terms such as 'child nutrition', 'diabetes', 'health wellness' 'obesity', 'portion size', 'food waste' and 'consumer satisfaction/wants', should not be confused with 'product nutritional value' which concerns issues such as reduction of fat in meat balls. Although 'nutrition' as 'single term' per se was not included in any thematic category (it was part of bigrams), it was a single term when counting term frequency and as such, it was common to all and took the first position for the dairy result sets. Although in academic literature (Forsman-Hugg et al., 2013; Maloni & Brown, 2006) there is a discussion about the responsibility of trying to influence lifestyle, the findings from the text mining and the industrial report reviewed (Prescott et al., 2002), which has 'nutritional lifestyle and marketing' as one of the two CSR challenges facing manufacturers, seem to place a higher importance on this issue.

There are three types of terms in 'corruption', the first concerns moral behaviour and includes notions such as 'ethical behaviour', 'bribery' and 'responsible manner', the second is concerned with traceability and transparency and the third covers legal requirements / obligations. As a theme it is included in all top 15 themes except for dairy websites. Maloni and Brown (2006) and Prescott et al (2002) stress the need for ethical business practices in procurement and trade, which is quite limited considering the breadth of issues covered by corruption.

'Access to food' and 'general references' are social aspects with low involvement, referred to respectively by terms such as 'malnutrition', 'poor food', 'food security' and 'social development/welfare/issues/fabric'. Neither theme appears in any of the top 15 lists nor do any relevant terms. 'Access to food', however, is discussed by Maloni and Brown (2006) and their position is nicely summed up with the following sentence '…while food companies may not be directly responsible for addressing world hunger, they should realize that they may potentially play an important role…'. Indeed, the explanation for 'access to food' not being considered a big issue by industry is that they might not have recognized their potential role yet.

Product Quality and Information: This topic is the primary focus in the webpages and is made up of the following 3 themes with very high involvement: 'food quality', 'food safety', 'product nutritional value' and also 'responsible marketing' of lesser importance.

Some examples of terms in the 'food safety' theme are 'safety products', 'international food standard', 'bacteria milk', 'salmonella', and 'product hygiene'. These terms indicate the demand for food that does not present any health hazards or transfer foodborne illnesses to the final consumer. It is evident from the high involvement of the theme in social issues, its appearance in all top 15 themes and as a term in all top 15 terms' results lists that it carries

major importance and even more so on websites. A related term, 'product safety' also appears in two top 15 term lists. This demand for safe food does not stem only from consumers but also from the vast majority of the stakeholders, not least from governments and the companies selling the final product. This is unquestionably a major topic in all the relevant articles from the literature review (Forsman-Hugg et al., 2013; Maloni & Brown, 2006; Prescott et al., 2002) so it is not surprising that its involvement is so high and usually encompassing quality as well, which is covered as a separate category of importance in this thesis.

A distinction must be made between the themes 'product nutritional value' and 'health and nutrition'. The first, which includes terms such as 'additives', 'nutritional benefits/quality/value', 'vitamin', 'magnesium', 'improve product', 'good food', 'flavour', 'reduce fat' and 'calcium' refers to the efforts to make the products as nutritional as possible while the second theme addresses corporate contribution to overall public health and nutrition in society. Almost a tenth of all terms in the social category are related to 'product nutritional value', regardless of medium and sector and the theme is common to all top 15 result sets and is, therefore, very important. With the rising awareness in the public sphere about the connections between diet and overall health, it is not surprising that nutrition is a hot topic. Meat and dairy products are presented in communications as key components of a healthy diet. This is especially true in the dairy industry where traditionally, milk is a drink of high nutritional value. This topic is also a key theme in the article reviewed in literature (Forsman-Hugg et al., 2013; Maloni & Brown, 2006; Prescott et al., 2002).

'Food quality' is comprised of many bigrams that are mostly compound words or phrases with 'quality': 'quality assurance/checks/control/hygiene/meat/food/system' and 'consistent/top quality'. This is also a very important theme because it appears in the top 15 themes for all result sets except for dairy reports and the term 'product quality and assurance' appears in the entire top 15 term lists.

'Responsible marketing' has low involvement and does not appear in any lists. Some relevant terms are 'information consumers' and 'labelling'. It is surprising that there is not more discussion about marketing because it is part of 'nutrition, lifestyle and marketing', one of the top challenges faced by food manufacturers according to Prescott et al (2002). 'Labelling' is also presented as a method of upholding nutritional responsibility (Forsman-Hugg et al., 2013; Maloni & Brown, 2006; Prescott et al., 2002).

4.7 Sourcing perspective

Sourcing is the fourth sustainability pillar, consisting of two intermediate categories 'Sourcing issues' and 'animal well-being'. Milk producing animals live on the farm, as do animals reared for meat, for most of their life; the farm is also the place where the largest proportion of the animal-related issues occurs, with transport and slaughter being the exceptions. For this reason animal well-being has been added to sourcing issues.

'Animal well-being' includes two themes 'animal health' and 'animal welfare' embracing respectively terms such as 'feed improvement', 'breeding', 'pig health', 'animal husbandry/origin/nutrition', 'veterinarian', 'monitor animal', 'cow feed' and 'animal safety'; 'benefit/conditions/handling/management/protect/respect', 'transport animal', 'distance animal transport', and 'animal slaughter'. Both themes are very important for the meat industry, but not so much for the dairy industry. This can be seen in the following statistics: 'animal welfare' and 'animal health' are two of the top terms and top themes in both result sets for the meat sector. In fact 'animal welfare' is the top term in both mediums. They do

not show up in the dairy-related top lists. Animal health and welfare are big issues for both industries because they are major contributing factors to food or product safety and quality as well as being issues of concern in their own right because animals are considered in the EU as being sentient beings that need to be protected and respected. Therefore, it is somewhat unexpected that animal health and welfare do not appear in the top terms for the dairy sector, although they do appear further down on the list. One possible explanation is that the NGO's campaigning for animal rights focus a lot of attention on the meat processing industry and the slaughter and transportation of livestock. 'Animal health and welfare' features with similar content in both articles (Forsman-Hugg et al., 2013; Maloni & Brown, 2006) on CSR in the food chain, covering similar issues as the ones in this thesis, confirming the importance of this topic. It is of particular interest that one of the 8 CSR issues according to Maloni and Brown (2006) is biotechnology used in animals and plants. Some of the issues addressed there such as the use of antibiotics, are part of the findings but some are not such as recombinant DNA, cloning and genetic testing.

Table 11Findings from the sourcing perspective

		Involvement in sourcing issues	Meat vs Dairy	Webpages vs Reports
Animal Wellbeing	animal health	very important for meat but not dairy so big variance	much higher in meat industry ≈ 20% difference	NOI
	animal welfare	very important for meat but not dairy so big variance	much higher in meat industry ≈ 20% difference	NOI
Sourcing Issues	responsible sourcing	very important for dairy but not meat so big variance	much higher in dairy industry ≈ 17% difference	slightly higher for webpages
	collaboration with farmers	important for all except meat reports	higher in dairy	NOI
	supply chain collaboration	varying involvement (7.4%-19.6%)	NOI	NOI
	raw materials	varying and high involvement (7.4% - 26.8%)	NOI	NOI

The other group, 'sourcing issues' includes 4 themes. The first is 'responsible sourcing' consisting of terms such as 'code of practice', 'supplier network' and 'organic food', 'audits supplier', 'natural resources', 'responsible/green purchasing', 'responsible soy' and 'dairy farmers' employees'. 'Responsible sourcing' has significantly higher involvement in the dairy industry and it features on the dairy industry's list of top 15 themes. The term 'code of conduct', which is also linked to this category in the business context, is a document written in order for employees and/or suppliers collaborating with the company to know what is expected of them. A code of conduct is generally becoming a status quo in business because it clearly demonstrates the expectations and hence, the values of the company and protects not only the company but also the employee. The term appears in three out of the four top 15 term lists. Ethical purchasing or trade and especially, corruption within purchasing are also emphasized as a key issue in the reviewed literature (Maloni & Brown, 2006; Prescott et al., 2002).

The other three themes have varying involvement without any specific pattern either in medium or sector. The theme of 'collaboration with farmers' includes 'train farmers', 'agricultural production/supply/initiative', 'farm management/assurance', 'farming practices', 'support dairy farm', 'sustainable farming' and 'help farmers'. As a theme it is present in all top 15 themes with meat reports being an exception. The term 'sustainable dairies' is also a top term in dairy sector result sets. There is a close collaboration and high mutual

dependency between farmers and processors, which is especially relevant for the dairy sector where they are in daily contact. This makes the need to integrate sustainability upstream even more urgent and that could be why the term 'sustainable dairies' is much used.

'Supply chain collaboration' encompasses terms like 'production/value/supply chain', 'sharing information/knowledge/practices' 'distribution channels', 'food chain' and 'farm to fork'. Although it does not turn up on the top 15 themes list at all, the term 'value/supply chain' does appear in all top 15 term lists except for meat reports. This indicates that the theme includes some popular terms but is not frequently addressed as a theme.

The final theme is 'raw materials', which is common to all top term result sets, and includes, apart from the term itself, bigrams such as 'product ingredients', 'farm/raw milk', 'materials ingredients' and 'packaging materials'. As a theme it also appears in 2 of the top 15 theme lists. In order to ensure food safety, product quality and nutritional value, milk and dairy processors are highly dependent on the raw materials that are provided to them (Maloni & Brown, 2006; Prescott et al., 2002). Consequently, 'raw materials' is also a commonly cited term.

5 Analysis

This section compares the findings on corporate sustainability practices to societal expectations. According to the taxonomy used in this thesis (see chapter 2.6) there are three types of societal stakeholder groups: global society, national society and social groups and institutions and in the analysis, there is one chapter dedicated to each group. In each chapter expectations related to meat and dairy processing are presented and simultaneously compared to the findings. More information on the choice of groups and their subsequent initiatives, frameworks and recommendations can be found in the methodology section (see chapter 3.6.2). The comparative analysis is followed by a chapter where all the observations are pulled together in order to provide suggestions. In a final chapter the feasibility of these suggestions is discussed based on information gathered from interviews conducted with the industry.

5.1 Global society

5.1.1 OECD guidelines for multinational enterprises

The OECD guidelines consist of eleven different themes 'Concepts and Principles', 'General Policies', 'Disclosure', 'Human Rights', 'Employment and Industrial Relations', 'Environment', 'Combating Bribery, Bribe Solicitations and Extortion', 'Consumer Interests', 'Science and Technology', 'Competition' and 'Taxation'. It does not include specifics relating to any sector but covers general issues that can arise.

One area that is almost completely missing for the meat and dairy reports is that of 'Science and Technology'. This refers to the transfer and diffusion of scientific knowledge and technological know-how from one country to another. Although this is not a focal issue for the meat and dairy processors, there is a trend towards intra-European and global processor consolidation but not all European countries or countries in other continents are on the same level of technical development and, therefore, there is some scope for improvement, especially with respect to many non-European countries. Corruption issues such as transparency, anti-competitive behaviour and bribery feature prominently and reoccur in many themes e.g. 'Disclosure', 'Combating Bribery, Bribe Solicitations and Extortion' and 'Competition'. Although 'corruption' as a theme is found in three out of four of the findings' result sets, its importance is not on a par with the guidelines. Another recurring theme covers economic responsibility such as taxation, price fixing, employment of local people and resources. The guidelines chiefly centre around 'shared value' (with special attention given to taxation) and 'community investments' topics, which are definitely not equally present in the findings and this clearly indicates an area where action can be undertaken. Terms relating to the latter issue are predominantly lacking from the meat processors' disclosures.

'Health and safety' and other labour management and human rights topics seemingly receive equal thematic coverage in both the guidelines and findings. 'Public concerns' such as nutrition and health, access to food and all themes under the heading 'Product Quality and Information' are covered more extensively in the findings presumably, because they are critical to the food industry whereas the guidelines are addressed to a broader spectrum of businesses. The same applies for environmental issues, where the guidelines only touch upon very general issues and animal well-being is not even mentioned. Other sourcing issues, however, such as responsible supply chain management are presented as salient and are incorporated into most of the themes of the guidelines and moreover, with respect to the method of application, it is specifically suggested that companies use leverage to mitigate adverse effects stemming from other supply chain members. This is an optional method for

dairy and meat processors (for the latter particularly) who need to upgrade their collaboration on sustainability upstream and downstream.

5.1.2 UN global compact

The UNGC is a corporate responsibility initiative based on a set of ten principles in the areas of 'human rights', 'labour', 'environment' and 'anti-corruption'. In the UNGC six out of ten of the principles are grouped under 'human rights' and 'labour' so considerable focus is put on the human being and the needs of the employee who works for the company in question but also for affiliated companies. 'Labour management' issues are extensively covered in the findings but 'human rights' do not appear to quite the same extent. Some of the studied companies do actually have separate codes of conduct addressing these issues that could not be covered by the findings but other companies, especially those entering new markets in developing worlds could perhaps find it beneficial to develop more detailed human rights implementation strategies, policies or measures. Economic issues are embedded in the principles and similarly to the OECD guidelines, concentrate on the support of livelihoods of local communities as well as of individuals working for the company with emphasis placed on those groups that are often subject to discrimination. As in the OECD guidelines, combating corruption at all levels is also a salient issue with special consideration given to the protection of smaller businesses. For some companies it is questionable whether they are doing enough in the way of human rights and anti-corruption. Another issue embedded in the principles concerns the responsibility of the enterprise to try and bring about positive change in the supply chain as well, which is further evidence of the high expectations associated with companies to take on responsibility well beyond their own borders.

In UNGC, two aspects of environmental issues are discussed for virtually the first time: the precautionary principle, a term that seldom appears in the result sets, and the development and diffusion of environmentally-friendly technologies. There are some instances where the latter theme emerges in the findings in relation to minimizing impacts e.g. energy consumption and the adoption of some cleaner technologies e.g. biogas solutions, but there has been little commitment to the development and consequently, to the diffusion of environmentally-friendly technology. The prominence placed on these two issues, namely, the precautionary principle and the development of environmentally-friendly technologies in UNGC warrant the need for further action in this direction by the meat and dairy processors. The environmental section also includes a general reference to the need to undertake initiatives to promote greater environmental responsibility, but this does not go into specific details. As we have seen in the findings, companies address general references adequately.

5.1.3 Sustainability assessment of food and agriculture guidelines

The SAFA guidelines are directed explicitly at the food industry and go into a great level of detail. The focus here is to compare the findings with the stated and implicit priorities in the framework. The SAFA framework is made up of four components: 'good governance', 'environmental integrity', 'economic resilience' and 'social well-being. 'Good governance' bears some relation to 'corruption' but focuses mainly on governance and not impacts.

From the international guidelines used so far to analyse the findings in this thesis, this is the first to provide more relevant details about the environmental impacts of the food industry. All sub categories of 'environmental integrity', that is to say 'greenhouse gases', 'air quality', 'water withdrawal', 'water quality', 'soil quality', 'land degradation', 'ecosystem diversity', 'species diversity', 'genetic diversity', 'material use', 'energy use', 'waste reduction & disposal', and even two 'animal well-being' issues are included: 'animal health' and 'freedom from

stress' have been tackled in the findings. It is difficult to comment on whether they can be adequately tackled because individual company conditions influence the priorities. One observation is that land use and biodiversity, which have been aggregated in the findings, are given individual attention and a large number of indicators, which suggests that these issues are underrepresented in the findings. This is the first international standard to address animal welfare by specifically devoting a whole section to it. Animal welfare and health is a big commitment for the meat processors but these themes do not even make it into the top15 for the dairy industry indicating a need to prioritize, animal well-being in the dairy industry.

The same comprehensiveness does not exist from the economic perspective. There are two main aspects covered in the guidelines that are non-existent in the findings. The first concerns investments; so far the discussion has been focused on community investments but here investments at the enterprise and value chain level are also considered. The second concerns the resilience of the system to shocks and it is called 'vulnerability' with sub categories being 'stability of production', 'stability of market', 'stability of supply', 'liquidity' and 'risk management'. Similarly to the OECD guidelines and UNGC there is a focus on the issue of supporting the local economy through investments, local sourcing and value creation. All the points regarding 'economic resilience' can be viewed as opportunities for improvements. 'Food safety, quality and information' is also considered an economic topic in this context but this is covered by the findings.

One final theme in the SAFA is 'social well-being' where the human being is really put into focus whether as a member of the local community, an employee or a supply chain partner. Everyone should have the means of having a decent life through fair prices, decent wages and working conditions, human and labour rights, equal treatment (especially towards vulnerable groups), and even preservation of cultural identity. These are issues that have largely been discussed before; interesting additions are the focus on cultural identity and also that corruption issues are embedded in a lot of these aspects.

5.1.4 GRI food processing sector supplement

The GRI publishes general guidelines for all types of corporations, which in the case of the food processing industry are complemented by a sector specific supplement. Both these documents were used in the comparative analysis.

Regarding economic aspects there is a very strong focus on supporting the local level; this includes community investments, hiring local people at all company levels, supporting upstream local farming communities, especially in the rural areas and not adopting anti-competitive behaviour against the vulnerable small producers in the food supply chains and fair pricing. There is also a lot of emphasis on the terms of and amount of government financial support received. According to the thematic analysis of this thesis, some of the economic-related topics are classified under non-economic themes such as 'corruption' and 'responsible sourcing'. Therefore, we can identify opportunities not only for economic activities that are lacking e.g. community investments (an almost non-existent thematic category in meat disclosures) but also for other aspects, especially 'corruption', not referred to per se but present throughout.

Regarding social issues, the first observation is that there is coverage of most aspects listed in the GRI guidelines and sector supplement by both meat and dairy processors. There is also congruence in the attention given to the topics; for example, food quality and safety is important and is treated as such. Nevertheless, there are some points worth mentioning. Firstly, the GRI emphasizes the significance of labelling and responsible marketing, especially

when aimed at children. This topic has low involvement in the findings so there is potential to improve. Secondly, according to the GRI safe, healthy and affordable food has to be made available to all and it is this social issue that has the strongest potential for improvement, because although in the disclosures there is a lot of discussion about making healthier products, trying to influence the consumer and fighting malnutrition through education etc., there is not much discussion about how these healthy alternatives can be realised for the majority of the population.

Nearly all the environmental issues addressed in the GRI guidelines and sector supplement can be found in the reports and websites of the companies. Topics such as 'material use and recycling', 'water withdrawal and discharge', 'GHG emissions', 'waste', 'transport', 'compliance with laws and regulations' and 'energy use and reduction' can all be found in all the result sets. This effectively means that there is adequate coverage of the environmental challenges. However, two possible improvements are identified from text in the sector supplement where the context is set. The first concerns the importance of managing the preservation of natural resources in light of the reciprocal relationship between natural resources and the companies' survival. In the findings this is dealt with in the biodiversity section and the statistics of involvement for this theme are relatively low, indicating there is scope for its further development especially in the meat sector. The second is the risk in the food processing industry associated with climate change. Although 'GHG emission' is a highly visible term in all result sets, as a theme its position in the respective results for the dairy and the meat industries varies considerably: in the former it holds top positions while it is underrepresented in the latter.

By including a section for reporting on supplier impact assessment in each category of the guidelines, sourcing is addressed holistically. The GRI acknowledges the complexity of the global food supply chains and the difficulty of collaborating with suppliers and implementing fair and ethical trade practices but still deems sourcing to be a top priority. This is echoed by industry, where, according to the result sets, sourcing has between 15% - 21% involvement in sustainability. Although it is clear that industry is doing a lot in this direction, improvement can be made to the details, especially concerning animal welfare in the dairy industry as noted in the SAFA chapter. GRI also mentions that large-scale or industrial operations are where a lot of animal welfare challenges occur.

5.1.5 ISO international standards

There are more than 19,500 International Standards that cover almost every industry. Out of these standards ISO estimates that approximately 5% relate to food in order to standardize food quality, safety and efficiency. This is, in itself, a clear indication of the importance globally of ensuring food quality and safety. From the findings this is obviously a priority for both the dairy and meat industries. An in-depth analysis of ISO standards related to food safety would go beyond the scope of this report and would not be beneficial because it would involve the addition of too much detail. Therefore, ISO26000, which relates to social responsibility, is mainly used in this comparative analysis. It focuses on six core subjects: 'human rights', 'labour management', 'the environment', 'consumer issues', 'fair operating practices' and 'community involvement and development'.

The content of these core subjects is very similar to the content found in the other guidelines and initiatives. Nothing new is added, but previous findings and identified areas of improvement are confirmed. The employee's needs are addressed in two out of the six core subjects, namely 'human rights' and 'labour management' which is indicative of the critical importance of this topic. 'Community support' is also singled out again as a salient issue as is

'fair operating practices', which refers to anticorruption and supply chain responsibility. Environment issues cover pollution prevention, climate change, protection of habitats and resources. One difference worth noting is the way the information is organized. The topic 'consumer issues' contains information which in the GRI and this study is found under the headings 'society' and 'Product Quality and Information'. This really puts the consumer as an entity into the limelight rather than treating the topic as a more general obligation to society. This shifts focus from general societal concerns to the concerns of a specific stakeholder.

5.2 National society – The EU

The long term goal of the EU is sustainable development (EC, 2009) so it is committed in principle to sustainability but clearly, the principle is also being put into practice since 42% of the EU's budget is earmarked for 'sustainable growth: natural resources' (EC, 2014a). The European Commission strongly encourages enterprises to take on responsibility for their impacts on society and engage in CSR by managing four areas of impacts within their strategy and operations, namely, 'social', 'environmental', 'ethical human rights' and 'consumer concerns' (EC, 2011a). The first observation is that respect of human rights including human dignity, freedom, freedom of association, democracy, equality and the rule of law, is a major issue since it is addressed as a stand-alone category. The second observation concerns the importance assigned to the consumer. Consumer needs are targeted as a separate area of responsibility similar to the ISO 26000. In fact, according to the EC *'...at the heart of any food-related matter, the EU sees the consumer as the key stakeholder in the whole food/feed chain...'* (EC, 2014b). Although the first observation points to an area of improvement that also cropped up when analysing global society's expectations, the second observation concerns the framing of sustainability. In the EC's definition of CSR the economic component is not directly referenced but the EC still sets down the main purpose of enterprises as maximising shared value, not only for owners/shareholders but also for other stakeholders and society (EC, 2011a). This effectively means that sharing value, although not classified as part of the economic pillar of sustainability or CSR, is in fact the main goal of a company. Considering the low involvement of shared value in the result sets this can definitely be viewed as an opportunity. In the EC's definition of shared value, focus is placed on the creation of more and better jobs, especially for the youth.

On the main EU webpage the EU presents the topics where it is active. The following section is mainly based on information contained in this group of webpages (more information in chapter 3.6.2). From an environmental perspective issues are grouped under three headings: 'climate change', 'energy' and 'environment'. 'Energy' is described as *'… one of the main challenges facing Europe today…'* and is closely related to 'climate change' because the main solution to both problems is the shift towards a zero carbon economy, in the first case in order to reduce dependence on fossil fuels and in the second case in order to cut emissions. Almost all possible environmental issues are explored in different forums but i) the protection of natural capital like water, air quality, habitats and birds and ii) the most efficient use of scarce natural resources like water, minerals, and of course land, are presented as the most critical. Regarding food, it is identified as one of the three key areas where the environmental impact of production and consumption needs to be lowered. The priorities are to improve food chain efficiency, create a low carbon food supply chain, move towards zero food waste and increase consumer demand for sustainably produced and supplied food (EC, 2014b). When comparing these primary issues to the findings, it is clear that meat and dairy processors also prioritize energy and GHG emission reduction as goals of their environmental initiatives, although the meat industry has the potential to step up its climate change action. Issues such as biodiversity, habitat protection, deforestation and water stress are also part of the processors' environmental commitments, but here too there seems to be

scope for improvement, especially concerning biodiversity and land use. The other topics such as moving towards zero food waste are relatively novel ideas, although the terms do occasionally turn up in the results sets. This means that for many companies an opportunity presents itself to work with these issues.

Social impacts are harder to define because unlike environmental ones, the EU does not clearly cluster them into a group. They are referred to as being multidimensional (EC, 2011a) and the following are listed as mandatory issues: human rights, labour and employment practices including training, diversity, gender equality, employee health, employee well-being and combating bribery and corruption (EC, 2011a). Of course, this does not bar other aspects from being included such as community development or the integration of disabled persons (EC, 2011a). Corruption and labour and human rights are also main topics of action for the EU. The latter comprises: health and safety, which the EU prides itself on having positively impacted heavily, training and education, rights at work and social protection and inclusion. Corruption refers to fraud prevention and fair and equal competition as well as access to public procurement. These are clearly issues that the meat and dairy producers need to take a strong line on and in many ways they do but 'corruption' as a theme appears in only two top 15 result sets so there is scope for more action. A point of consideration for those meat and dairy processors driving higher consolidation is anti-competitive behaviour. The EU focuses especially on supporting SMEs and not allowing for them to be ousted by larger companies.

Two more important social issues are highlighted. Firstly, the EC emphasizes the role of EU policy in supporting local and rural communities and in encouraging food manufacturers and retailers to follow suit and invest in local communities and support them whenever possible. Secondly, health and nutrition is highlighted as a grave concern because of the growing trend of people to have unhealthy diets coupled with a lack of physical activity and also that food of low nutritional value and sometimes even unsafe, of low quality or inadequately labelled appears on the market. These are issues that have been viewed in the results sets. As can be seen in the findings on 'Product Quality and Information', both industries are committed to improving nutritional value, providing safe food and to some extent, improving labelling. They are also active with regard to general concerns around health and nutrition, although the meat processors are slightly less so than the dairy processors. The EU takes an integrated approach towards food safety and quality by including animal health and welfare and plant health in the topic.

Regarding animal health and welfare in the Treaty of Lisbon, which came into force on 1st December 2009, the EC recognizes that animals are sentient beings and sets a minimum of welfare requirements. It also makes it requisite that animals should not have to endure avoidable pain or suffering. The Farm Animal Welfare Council has adopted the following five freedoms: i) freedom from hunger and thirst, ii) freedom from discomfort, iii) freedom from pain, injury and disease, iv) freedom to express normal behaviour and v) freedom from fear and distress. This is a clear expression of the expectation that animal well-being should be taken seriously by corporations. Meat processors are really prioritizing animal health and welfare but for dairy processors there seems to be room for improvement. One of the reasons that the dairy industry may feel disassociated with animal welfare is that they are not directly responsible for the animals at any point of the process. This is not, however, a relevant argument because similarly to the global institutions consulted /referred to in this thesis, the EU recognizes supply-chain responsibility as an important cross-cutting issue (EC, 2011a).

In fact the food chain in Europe faces a number of challenges that need to be dealt with collaboratively. Apart from all the previously-discussed issues, one that deserves special consideration in the EU context is fair pricing as a source of concern (EC, 2011b; Eurostat, 2011). Food has to be priced so that it is accessible to consumers and provides producers with a liveable income. This can be linked to the themes 'shared value', 'responsible sourcing' and 'access to food'. 'Shared value' and 'access to food' are themes with very low involvement; the latter has almost zero involvement in the meat industry. With the results of the economic crisis in mind, 'affordable access to nutritious food' is set to be a new topic on the agenda.

5.3 Social groups or institutions

There were 27 organizations taken into consideration when determining the expectations of social groups and institutions. Table 12 presents them and includes the following pieces of information: name, brief description of aim and geographical area of operation. All these organizations have specific topics that they focus on; their main topics are also presented in the table, regardless of the relevance to this study, in order to give the reader an idea of the breadth of their work. Some of these topics are presented in further detail whenever it is relevant to the food industry. From these topics only the ones that are relevant to the scope of this study were selected and then organized into themes. These themes and their occurrence count are presented in Figure 12.

Table 12 Social groups and institutions

The Health and Environment Alliance (HEAL) is an NPO addressing how the environment affects health. It is made up of 65 European member organizations
Main: environment & health, chemicals, pesticides, climate & energy, air quality, mercury, cancer, noise, electromagnetic fields, fracking, nanotechnology, children's health, human biomonitoring, asthma & allergies
Health Action International (HAI) is a European network to improve access & rational use of medicines
Main: access to essential medicines, rational use of medicines, democratisation of medicines policy
Health Care Without Harm Europe is a European NPO coalition with 75 members in 26 European countries
Main: safer chemicals, climate change & health, green building, sustainable procurement, pharmaceuticals, sustainable food, waste management
Human Rights Watch (HRW) is a NPO, NGO international human rights organization with a European regional department
Main: human rights in the EU, EU foreign policy, Kosovo
European Environmental Bureau (EEB) is a European federation of environmental organizations with 140+ member organisations
Main: biodiversity & nature, climate & energy, governance & tools, industry & health, sustainability Relevant: agriculture, biodiversity, soil, water, climate change, energy, air quality, chemicals, nanotechnology, noise, ecolabel, environmental justice, food waste, ecodesign of product
Transport & Environment (T&E) represents around 50 organisations across Europe, mostly environmental groups working for sustainable transport policies at national, regional & local level
Main: air pollution, aviation, GHG emissions, biofuels, cars & CO_2, dirty oil, shipping, smarter lorries, sustainable trade, CETA & TTIP, vehicle noise, vans
Transparency International is a coalition against corruption, present globally & in several European countries
Main: defence & security, public procurement, whistleblowing, international conventions, access to information, politics & government, oil & gas, intergovernmental bodies, climate change, judiciary, sport, education, bribery, forestry, health, poverty & development, water, humanitarian assistance
Pesticide Action Network (PAN) is a network of over 600 non-governmental organisations, institutions & individuals in over 60 countries worldwide working to minimise the negative effects of pesticides.

Main: agriculture, biocides, biodiversity, pesticides, supermarkets
Oxfam is an international confederation of 17 organizations working together to alleviate poverty
Main: human rights, emergency response, active citizenship, gender justice, inequality & essential services, natural resources, saving lives, democratic sustainable food, women's rights Relevant: prices, farming, small farmers producers, climate change, land rights & grabbing, water, pollution
International Union for Conservation of Nature (IUCN) is a global professional nature conservation network with 1,200 member organizations including 200+ government and 900+ NGOs
Main: business & biodiversity, economics in nature conservation, ecosystem management, environmental law, forest conservation, gender equality, global policy, marine & polar, protected areas, science & knowledge, social policy communities, species, water, world heritage, climate change
International Society of Doctors for the Environment (ISDE) is global environmental NGO of medical doctors based in Switzerland
Main: nuclear energy, waste incineration, air quality in Europe, climate change & human health, persistent organic environmental chemicals, children, precautionary principle, PVC medical use
WWF is a foundation focused on nature conservation with a global presence & active in most EU countries
Main: protect species, conserve places, by-catch, climate change, deforestation, illegal wildlife trade, oil & gas, overfishing, pirate fishing, illegal fishing, pollution, soil erosion and degradation, water scarcity Relevant: sustainable agriculture, poverty, water, biodiversity, soil, GHG, animal health, welfare & slaughter
Greenpeace International is a global environmental organisation with 28 offices and present in 40+ countries
Main: climate change, forests, protecting oceans, ecological farming, toxic pollution, nuclear, peace & disarmament, energy revolution, sustainable agriculture
Global Witness is a NGO, NPO organisation based in the UK trying to expose the economic networks behind conflict, corruption and environmental destruction
Main: ending secrecy in oil, gas and mining deals, stopping the financial sector fuelling corruption, thriving within the planet's thresholds, conflict and fragile states
Amnesty International is global organization aiming to end human rights abuse and present in 150+ countries
Main: human rights Relevant: business & human rights, children, demand dignity, discrimination, freedom of expression, justice, poverty, refugees & migrants, roma, sexual orientation, women's rights, equality
The European Consumer Organization (BEUC) acts as the umbrella group for 40 independent national consumer organisations from 31 European countries
Main: financial services, food, digital rights, consumer rights & enforcement, sustainability, health, safety, energy Relevant: cloning in food, food information, food safety, food choice, nutrition, health and nutrition claims, consumer rights, ecodesign & energy label, ecolabel, sustainable mobility, chemicals, nanotechnology
CEE Bankwatch Network is a network of environmental NGOs operating in central and eastern Europe that challenges financial institutions not to finance environmentally and socially harmful investments
Main: energy & climate, transport impacts, social & economic impacts, resource efficiency & waste
Friends of the Earth (FoE) is a national environmental organization based in the UK and part of Friends of the Earth International with a global presence
Main: climate change, environmental justice, economics & resources, nature, land, food & water, lifestyle Relevant: genetic engineering & nanotechnology in food, forests, subsidy cuts, fair trade, sustainable farming, what to eat, water, land grabbing, trade, democratic food chain
Climate Action Network (CANEurope) is a coalition of over 120 member organisations in more than 25 European countries working on climate and energy issues
Main: emission trading scheme, renewable energy, coal, energy savings, IPCC, climate negotiations & finance
Consumers International (CI) is a global federation of consumer groups with 250+ members in 120 countries
Main: world consumer rights day, financial services, food, consumer justice and protection, digital Relevant: food marketing to children, salt reduction, food safety, fair trade, GM, food prices, healthy diets
ChemSec, the International Chemical Secretariat, is a non-profit organisation founded by four environmental organisations working to remove hazardous chemicals from human activity
Main: carcinogens, mutagens and reprotoxins, windows of development, endocrine disruption,

Eurogroup for Animals represents 48 European animal welfare organisations on the EU level.
Main: animal testing, companion animals, trade & animals, farm animals, wildlife, responsible business Relevant: CAP, Slaughter, Transport, Cloning of animals for food, Pig castration, CSR and animal, consumer concerns, animal welfare in the food chain
The European Coalition to End Animal Experiments (ECEAE) is an alliance of European animal welfare organizations campaigning on behalf of animals used in laboratories.
Main: animal tests, animal experiments
Compassion in World Farming (CIWF) is a farm animal welfare organization present in FR, UK, PL, IT
Main: factory farming, animal cruelty, people and poverty, environmental damage, consumer health, consumption choices
World Animal Protection is a charity in the UK and works with affiliated offices in over 50 countries
Main: animals in communities/in farming/in disasters/in the wild, global animal welfare, education Relevant: farm animal welfare¸ humane slaughter
CONCORD is the European confederation of Relief and Development NGOs consisting of 38 member organisations that represent over 1,800 NGOs
Main: food security, natural resources, financing for development, climate change, poverty Relevant: human rights, healthy and nutritious food, democratic food chain, planetary boundaries, resilience
Food & Water Europe is part of 'Food and Water Watch' and works to ensure the food, water and fish we consume is safe, accessible and sustainably produced, present in US, Europe & Latin America
Main: free trade, agriculture, fracking, consumer rights, fish, water, questionable technologies policy Relevant: factory farms, rural development, soy, clones & GM animals, nanotechnology, GMOs, GM Animal Feed, Food Irradiation

There are a number of noteworthy findings. First of all, the themes that emerge in this part of the study differ slightly from the ones found during the text mining process and that have been used up to now. The themes themselves are a clear indication of priority areas for social groups and institutions. These are 'sustainable agriculture', 'human rights and corruption', 'consumer issues', 'animal well-being', 'food safety', 'environmental issues' and some other topics. The most commonly found topic, with 16 out of 27 groups naming it in their programme, is 'climate change'. Next in line of frequency are 'sustainable agriculture', 'rural development', 'consumer health', and 'healthy and nutritious food'. 'Sustainable agriculture' is a stand-alone theme for the groups which refer to its environmental, social and economic sustainability but many groups focus on specific subjects as well, such as 'factory farms', 'soy', 'pesticides', 'land use', 'biodiversity', 'GHG emissions', 'rural development', 'soil', 'manure' and 'water'. From these subjects, a) 'rural development' which includes investments in local farming communities, support of farmers and their income and development of infrastructure and b) 'land use' are the most important. According to the findings from the text mining, there is a strong focus on 'collaboration with farmers' which bears resemblance to the theme of 'sustainable agriculture', so processors are acting to make primary production more sustainable. Specifically, 'rural development' includes aspects found in 'community investments' and 'local communities' from the economic and social pillars respectively and it is topic which has been highlighted by the global and national societal stakeholders.

Although the topics regarding corruption & human rights are all of medium individual importance, when aggregated the overall theme is very important. This theme consists of 'human rights', 'democracy in the food chain', 'bribery & corruption', 'transparency', 'distribution and use of subsidies', 'justice', 'CSR', and 'women's rights'. This is also a theme that has repeatedly appeared in the analysis of national and global stakeholders, thereby indicating an opportunity for improvement.

Similar to findings from the ISO 26000 standard and the EU analysis, a lot of focus is put on the consumer. There are a few consumer groups that were included in this study but these

findings show that interest in consumer issues is not confined only to them. The main subjects addressed here are upholding consumer rights, trying to bring about change in diet, protection of consumer health, supporting children's specific needs as well as general labelling issues. Out of these 'protection of consumer health' was by far the most important topic. This finding definitely correlates with the findings from the text mining because the 'nutritional value of products' and 'health and nutrition' are both themes with high involvement.

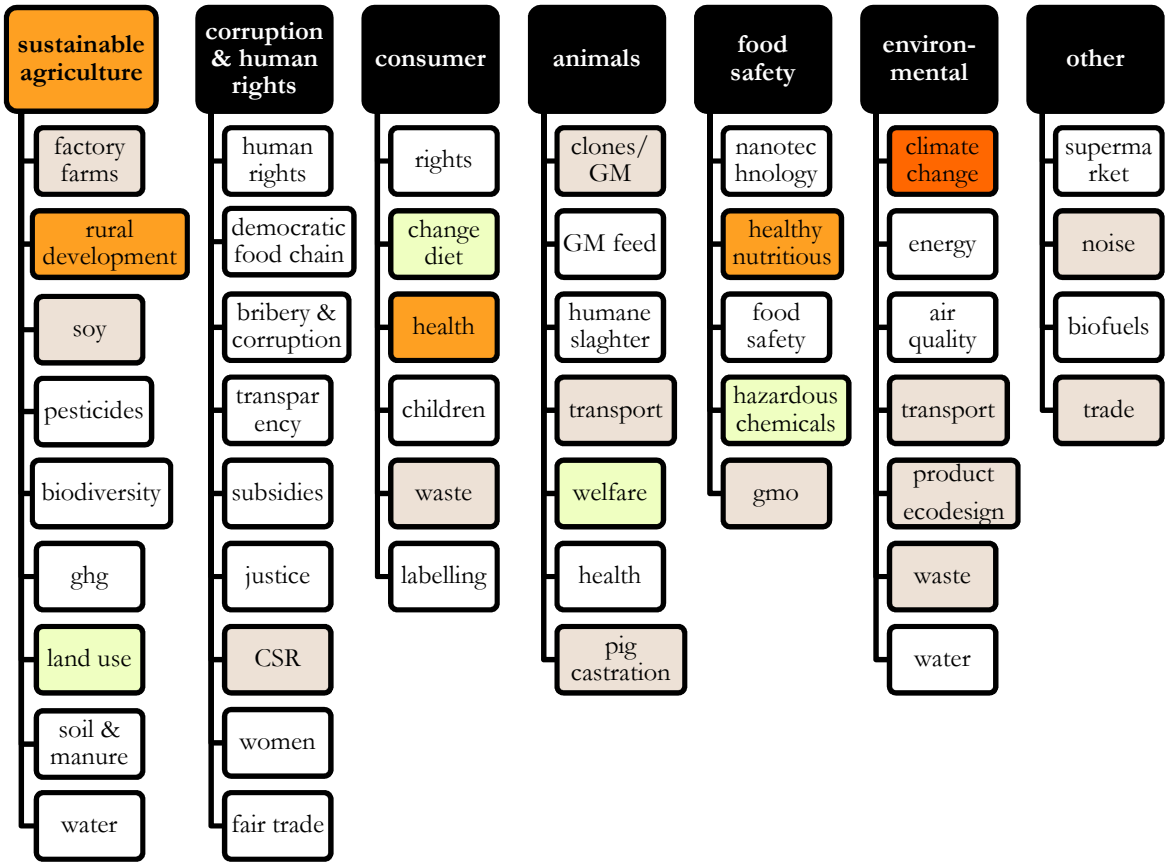


Figure 12 Key expectations of social groups and institutions

Key: Number of occurrences: ■>15 ■15⩾x⩾10 ■9⩾x⩾7 □6⩾x⩾4 ■3⩾x⩾1

There are a number of groups that also promote animal health and welfare. These groups are not exclusively animal rights groups, since for example, environmental groups and consumer groups also express their concern in this area. Topics that arise are 'cloning and genetic modification of animals', 'genetically modified feed', 'humane slaughter', 'transport conditions', 'general welfare', 'animal heath' including 'antibiotic use' and 'pig castration'. 'Animal health and welfare' is connected to 'food safety' which is another theme that emerges. Although some groups concern themselves with food safety as such, more are engaged in pushing for healthy alternatives of high nutritional value free from potentially harmful substances like nanomaterials, hazardous chemicals and genetically modified organisms. In the results sets from industry, 'animal well-being' is top priority in the meat processing industry but there is scope for improvement in the dairy industry and 'food safety' is really high in all the thematic result sets which demonstrates congruence with the wishes of social groups and institutions.

Environmental issues within industry is the final theme relevant to this thesis. As mentioned earlier climate change is a very important issue. Most environmental issues are present in this category such as 'energy', 'air quality', 'transport impacts', 'product ecodesign', 'waste handling' and 'water use' and these topics are also present in the findings from the text mining. Finally, some issues that cannot be classified into the other categories and are distantly relevant to meat and dairy are: 'the responsibility of supermarkets as champions of sustainability in the food chain', 'the noise levels from industry, transport etc', 'the switch of land use from food production to biofuels' and the 'Transatlantic Trade and Investment Partnership (TTIP)'.

It needs to be noted that groups can involve a great level of detail e.g. a campaign against a specific pesticide or even encompass topics irrelevant to meat and dairy production and consumption; these have not been included because they do not add value to this study.

5.4 Suggestions for improvement

In the previous three subchapters the elicited expectations or areas of concern regarding the food chain from the perspective of global and national societal stakeholders and social groups and institutions were presented. As a general observation the results are quite cohesive since there are a number of recurring themes that emerged. Whether this trend is top down or bottom up driven is not discussed within the context of this thesis but there were many issues that were overlapping between the different standards and guidelines, websites and stated areas of involvement. However, several issues that essentially refer to the same expectation or principle come under different headings and are grouped in different ways. There is a wider implication from this overlapping of issues because it means that the emerging global society is moving towards similar expectations, making it easier for international companies to legitimize their behaviour and work on closing legitimacy gaps.

Another general observation concerns the meaning and content of words, headings and themes. Often words have multi-meanings or headings are used to encompass various ideas and because everything is interconnected it is hard to clearly categorise all issues into themes and make comparisons. For example, 'paying taxes' can be classified as an economic issue of 'shared value' or a measure of 'anti-corruption' depending on the viewpoint. The GRI names 'freedom of association and collective bargaining' as a human rights issue while the OECD Guidelines for Multinational Enterprises has it grouped in Chapter IV, 'Employment and Industrial Relations' so in one instance these issues are tackled as human rights issues and in the other as labour issues. Of course, many global stakeholders recognize this problem and provide tables in their guidelines indicating overlaps between their aspects and other global standards aspects e.g. SAFA Framework or GRI but this is not the case at the national or social group level. This is also handled in the discussion chapter but it is emphasized here so that the reader can bear this in mind when reading the suggestions for possible improvements which follow and therefore, focus on the content rather than on headings. For reference, the content and examples of relevant terms and ideas for each theme for this thesis can be found in chapters 4.3 and 4.4.

To begin with, special reference needs to be made to the economic pillar, which is generally underrepresented in the findings. Different aspects of economic responsibility have been referenced in the expectation lists of all societal stakeholders but similar findings are not quite so readily available in industry. More specifically, although there is a commitment towards the provision of financial aid, this needs to be taken a step further and meat and dairy processors need to position themselves as organizations committed to sharing value or distributing income through the value chain via job creation, wages and benefits, pricing of

inputs and outputs, shareholder dividends and tax payments etc. This is covered to some extent in the financial reporting but the issues which demonstrate how a corporation shares value, economically participates in the market and invests in the local community need to be integrated into the sustainability documentation.

'Community investments' in fact were almost non-existent in the meat industry's results sets. This theme together with 'local communities', which has medium involvement in all results sets except for dairy webpages where it is high, cover most forms of engagement with local communities, such as 'local sourcing', 'employment of locals', 'employee volunteering', 'co-creation of development plans', 'event organisation', 'impact assessments of effects on communities' etc. 'Engagement with local communities', however, was found to be unanimously very important for all societal stakeholders i.e. OECD Guidelines for Multinational Enterprises, GRI, SAFA, UNGC, ISO2600, EU and Social Groups and Institutions. This is another clear area of potential improvements. Furthermore, 'the scope of local communities' needs to be discussed as well because for many societal stakeholders it is not only the communities surrounding the processing plant that need to be considered but also the rural and farming communities. In the SAFA Framework special consideration is also given to investments at the enterprise and value chain level. One further interesting aspect in the SAFA framework worth mentioning here because the SAFA is the newest set of guidelines, is the focus on *'…the resilience of the economic system to shocks stemming from production, the market etc…'*. This is called 'vulnerability'.

Another theme that was present in all the agendas of all societal stakeholders and stems from 'economic and social sustainability' is 'corruption'. Not all stakeholders address all aspects of 'corruption' e.g. some social groups focus solely on 'transparency' but all incorporate one of the following issues: 'morality of corporate behaviour', 'traceability', 'transparency', 'anti-competitive behaviour', 'justice', 'following legal requirements or obligations'. Two issues very specific to these industries were named in the SAFA Framework, the UNGC and also by the EU. The first concerns access to government funding and the second concerns the use of power by larger players against small business units. Although the findings in this thesis do not go into this level of detail, 'corruption' as a theme is found only in dairy reports' and meat websites' top 15 themes and generally had medium involvement.

Other areas of potential improvements in the social component of sustainability are 'human rights', 'consumer access to affordable and nutritious food' and 'labelling. 'Human rights' was named as a key issue for many societal stakeholders but it is difficult to ascertain whether enough is being done because there is a grey area between 'labour' and 'human rights' issues. In general, results were comprehensive for 'labour' issues i.e. 'health & safety', 'training & education', 'diversity & equality', 'labour-management relations' and 'benefits' but 'human rights' was a theme with low involvement, so there is a high probability that companies themselves need to investigate legitimacy gaps in this subject area. Although 'health and nutrition' and 'product nutrition value' were themes with high involvement, especially for the dairy industry, there is a question as to whether the consumer can financially afford it. The EU, ISO2600 and some social groups and institutions put a lot of focus on the consumer and want to promote a healthier diet which is affordable so meat and dairy processors need to evaluate if they are contributing enough to all stages of consumer access to affordable and nutritious food. Finally, a lesser issue but called for by some societal stakeholders e.g. GRI, consumer groups and the EU is 'clear labelling', which can actually be incorporated in the previous theme, because it will help the consumers make informed choices and have better access to nutritious food. This is relevant mainly for the larger processors that have their own retail brands.

The importance of 'sourcing' or 'responsibility upstream' cannot be overstated for this industry. Although in this thesis, it is perceived as a separate pillar, the findings from stakeholders and academia suggest that the boundaries of sustainability which were confined to the corporation have now expanded to include the farm e.g. in the G3 version of the GRI Food Processing Sector supplement, 'sourcing' used to be a standalone category but in the G4 version, it incorporates environmental, social and economic issues. As seen in academia a lot of environmental, social and economic impacts occur on the farm and society is aware of this; 'sustainable agriculture' was one of the most frequent topics of concern for social groups and institutions. 'Sourcing' in general had a very high involvement in sustainability ranging between 15% -21% but still some points of improvement can be identified. 'Responsible sourcing', which was touched upon previously in the themes 'corruption' and 'shared value', including 'fair pricing', 'supplier screening', 'supplier employee welfare', 'ethical/green procurement' had low involvement for the meat industry. Also 'collaboration with farmers', 'supply chain responsibility' and 'raw materials' had varying involvement making it difficult to reach conclusions but also making it probable that there are individual companies that should assess their impacts.

'Animal well-being' including 'welfare and health' was on the agenda of organizations that specifically focus on the food chain e.g. the GRI food processing supplement, SAFA framework, Euro group for Animals, Friends of the Environment, the EU etc. According to the findings 'animal health and welfare' are top priority for the meat industry but there is clear scope for improvement for the dairy industry. Some noteworthy issues in this area are 'the use of clones or genetically modified animals', 'humane slaughter', 'transport', 'antibiotics and hormone use'. One issue which relates to animals but can also be seen as an environmental biodiversity issue is 'species diversity'. 'Preservation of biodiversity' had medium involvement and is an indirect environmental impact but also potentially one worth working with the farmers on because it appeared in many cases as an issue of concern for societal stakeholders SAFA, GRI, ISO 26000, the EU, social groups and institutions.

Apart from 'energy and food waste', which is emphasized by the EU and academia as important and according to the results sets leave a slight scope for improvement, the remaining suggestions for environmental improvements are not related to the corporation but to the farm. These concern 'land use', 'biodiversity' and 'climate change' and were repeatedly found in the societal stakeholders' expectations. 'Land use' and 'biodiversity' were assessed as one item in the text mining results and 'climate change' is referred to as 'emissions'. These issues have low involvement in the results sets with the exception of 'climate change' for the dairy industry. 'Climate change' was the most frequent common theme for social groups and institutions and also a major topic for the EU. Therefore' all three issues are potentially areas of improvement' especially for the meat industry. Since there is so much focus on environmental issues upstream' the need presents itself for environmentally responsible logistics and for a system which can sanction, reward, screen, assist, advise and reject suppliers on the basis of their sustainability practices.

Brief consideration can also be given to the novel topics relating to i) the responsibility of industry with respect to the dispersion of scientific knowledge according to the OECD Guidelines for Multinational Enterprises and ii) to create and diffuse environmentally-friendly technologies according to the UNGC.

5.5 Discussion of feasibility of improvement implementation based on interviews

In total 7 interviews were carried out, for which the company and contact details are presented in Table 13. On the basis of the theoretical framework presented in chapter 2.7, the key determinants for sustainability priority setting are the key stakeholders, internal business priorities and scientific evidence. The interviews were based on this framework; thus this structure is also used to present the information obtained from the interviews and assess the validity, applicability and feasibility of the suggested improvements. First though, some background information is given that may explain the findings and suggestions. This explanation is based on the development of sustainability within the meat and dairy processing industry over time.

Table 13 Interviewees

Date	Company	Interviewee	
HKScan	13th June 2013	Vera Söderberg	Sustainability Manager, Environment
Meat processor, international, based in the Nordics, net sales EUR 2.1 billion			
Tican Group	25th July 2013	Martin Søvsø	Environmental Coordinator
Meat processor, cooperative, international, based in Denmark, revenue DKK 5.1 billion			
Goldschmaus Gruppe *	18th July 2013	Friederike Meyer	
Meat processor, based in Germany, turnover €420m			
Rosderra Irish Meats*	31st July 2013	Deirdre Doyle	QA Manager
Meat processor, based in Ireland, turnover around €300m			
Atria Oyj	19th August 2013	Eeva Juva	CR Manager Atria Finland
Meat processor, international, based in Finland, net sales EUR 1.344 billion			
Arla Foods	19th May 2014	Ulla Nilsson	Vice President, Corporate Responsibility
Dairy processor, cooperative, international, based in Sweden & Denmark, turnover DKK 63,114 billion			
Arla Foods	20th May 2014	Kjell Lundén Pettersson	Senior Manager, Corporate Responsibility

** email questionnaires answered by representatives from Böseler Goldschmaus and Rosderra Irish Meats numbers for 2012/2013*

During the interviews there was a tendency for the conversation to default to environmental issues rather than stay centred on the holistic concept of sustainability. This is probably due to the fact that, although the interviewees are more than cognizant of the multi-dimensional side of sustainability, environmental issues come foremost to mind. The reason for this may lie in the perception of the interviewees of how sustainability has developed in industry i.e. although companies have been working with different aspects of sustainability for a number of years, two examples being 'health and safety' and 'quality', environmental management and reporting is, in fact, considered to be the precursor of sustainability management and reporting. When asked about the historical development of sustainability management within their respective companies, they all described a journey similar to the one presented in Figure 13, which started with energy management, was followed by environmental management of other aspects such as water, waste, chemicals, noise, odour, and waste water, then came to include animal health and welfare issues, followed by climate change issues and finally, in more recent years the transition was made to sustainability management. When creating a sustainability or CSR strategy, most companies looked internally for social issues that were

already part of the corporate goals such as 'quality', 'food safety' and 'labour issues' and "added them the to the sustainability package" (Martin Søvsø Tican). The lack of reference to economic issues means that these were dealt with in financial reports, attended to by the financial department.

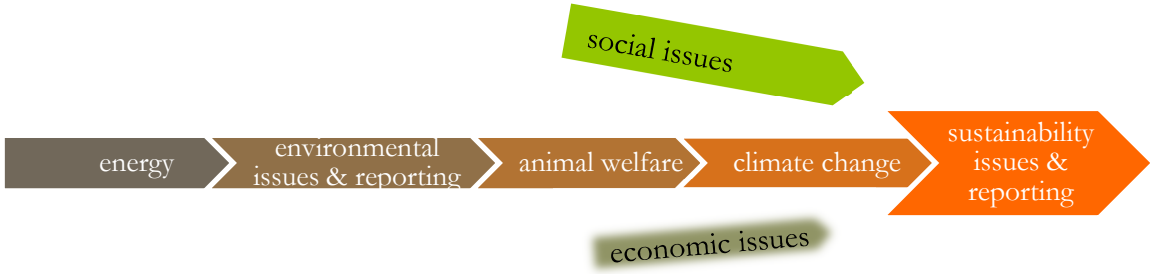


Figure 13 Development of sustainability management in meat and dairy processing industries

This development journey provides the reasoning behind many of the previous findings, while simultaneously confirming their validity. The economic pillar has not been fully integrated into sustainability management; people feel that it is dealt with elsewhere by other departments and in other reports. For this reason, we see this absence of reference to economic issues in the disclosures. Assessing and mitigating environmental impacts, particularly energy impacts has been undertaken for some years now so it is well developed. Consequently, this study found that the next challenge for companies is to start tackling negative impacts which occur in other stages of the food chain in collaboration with other supply chain members, the main example being on the farm in the areas of 'biodiversity', 'land use' and 'climate change'.

With respect to the social pillar, companies have been working on issues such as 'food safety', 'product quality', and 'labour and human rights' since their formation because otherwise they "would be dead on the market because consumers would not buy the product, retailers would not sell it and people would not work for the company" (Ulla Nilsson, Arla) so it is not surprising that the themes 'labour management', 'human rights', 'product quality and information' are usually comprehensively addressed and therefore, all areas of improvement can be found in the theme 'public concerns' which includes 'local communities', 'health & nutrition', 'access to food' and 'corruption'. 'Public concerns' are subjects that have emerged more recently but the systems for working with them are undeveloped as yet.

Traditionally the focus of the company/business has been on mitigating the impacts of the corporation while the adoption of a value chain perspective in sustainability management is more recent. However, as the interviewees pointed out, meat and dairy processors have, in fact, been quite prompt in taking a supply chain view of sustainability, due to the nature of the food chain, the high dependence of the processing industries on primary production and their close ties with the farmers. Nevertheless, there is still scope for improvements. Firstly, the supply chain perspective has to be applied to all three pillars, whereas now it is only being applied in selected issues and secondly, there needs to be collaboration to reach specific targets.

All the companies that participated in the interview have an environmental management system in place and they are either in the process of making or have already made the transition to sustainability management.

5.5.1 The role of stakeholders and society

The role of stakeholders in defining sustainability priorities has been extensively discussed from a theoretical perspective in the literature review chapter 2.4 and 2.7. A large part of the interviews concentrated on understanding how the corporations include their stakeholders in the priority setting process and if specific groups have expectations that influence sustainability practices. Questions such as 'Which stakeholders influenced the decision to engage with issue X?' or 'Has stakeholder X shown any interest in your sustainability programme or set any requirements?' were asked. Answers did not vary considerably. Everyone mentioned 'governments' as a main driving force via legislation, carbon tax, permits and grants. 'Customers' were also mentioned by everyone as influencers; some customers request certification schemes (Friederike Meyer, Goldschmaus), others are interested in a specific issue like animal welfare (Eeva Juva, Atria, Deirdre Doyle Rosderra) or ethical trade (Deirdre Doyle Rosderra) or they ask the corporation to complete self-assessments (Vera Söderberg HKScan). Their main concern, though, is undoubtedly 'product quality and safety' (Martin Søvsø Tican). Many interviewees agreed that media and NGOs could potentially be a very dynamic source of change, if they become really interested in a topic e.g. 'the horsemeat scandal' which led to more transparency. 'Banks', 'shareholders' and 'investors' are starting to show an interest (Vera Söderberg HKScan, Ulla Nilsson Arla, Eeva Juva Atria) because "a sustainable company is one that will financially survive" (Ulla Nilsson Arla). Concerning 'competition' and with the exception of companies that are forerunners, some interviewees mention that if competitors are working with sustainability, then it can be a form of peer pressure (Friederike Meyer, Goldschmaus). Everybody agreed that consumers' main demands centre on the attributes of the product, such as quality, taste, nutritious value, labelling etc. Apart from a limited demand for organic products, there is little evidence of expectations in other areas (Martin Søvsø Tican, Vera Söderberg HKScan, Eeva Juva Atria).

There is a clear opportunity in engaging with farmers because due to the nature of their work, they inherently take the long term view and they are directly affected by impacts e.g. climate change and environmental problems (Vera Söderberg HKScan, Kjell Lundén Pettersson Arla). This means that they have a genuine interest in moving towards sustainable agriculture. It also means that the suggestion made in this thesis to collaborate with farmers in order to mitigate environmental impacts, such as climate change and in some cases animal welfare challenges, is indeed a feasible suggestion. On the other hand, farmers are also price driven, so when it comes to the processor investing financially in sustainability, they applaud any cost reducing measures but they are more sceptical if it negatively impacts the price they receive for each animal (Martin Søvsø Tican).

Employees in some countries form strong collectives and lobby for their rights and they want to feel that they work for an ethical company. In fact, the main internal benefits of working with sustainability were 'employee engagement/dedication', 'attraction of talented people', 'employee retention' and 'enhancing company culture' (Eeva Juva Atria, Kjell Lundén Pettersson Arla, Vera Söderberg HKScan, Ulla Nilsson Arla, Friederike Meyer Goldschmaus). Ulla Nilsson said that the main audience for the CSR report in Arla are the employees.

The above then are the stakeholder groups that were mentioned in the discussions with industry members. Apart from the case of farmers, where arguments were found to support the suggestions given in the previous chapter, no information provided in the interviews contradicted the suggested improvements. In fact, the position held in this thesis that society is a key stakeholder when determining environmental sustainability was confirmed by the interviewees indirectly. Firstly, NGOs, media and above all governments, which are considered societal stakeholders in this thesis, were found to be amongst the most influential sustainability drivers. Secondly, although the interviewees did not make a direct reference to society being a major stakeholder in the process of setting sustainability priorities, they all made indirect references to society's influence on sustainability practices and to other stakeholders, who in their turn influence the company. Below are some examples of references made to the importance of society's expectations:

"people in general expect a company to care about people, animals and the environment; they do not articulate this expectation as a question 'do you have a CSR strategy?'; they probably do not even know what CSR is but they still want you to be decent, ethical and caring" (Ulla Nilsson, Arla)

"an issue only becomes an issue when you care about it and your friends care about it and then everybody feels that something needs to be done…" (Vera Söderberg HKScan)

"people aren't asking for more which, in my opinion, is a shame, because then things would happen" (Martin Søvsø Tican)

"sustainability is a topic which will overall gain more and more importance; in the future customers and other stakeholders will all require sustainability" (Friederike Meyer, Goldschmaus)

"demands will be greater as more and more people realise the problems and so they will ask for more (Eeva Juva, Atria)"

Another noteworthy point is that most interviewees mentioned a difference in the expectations of stakeholder groups depending on the European country they operate in (Ulla Nilsson Arla, Kjell Lundén Pettersson Arla, Eeva Juva Atria, Vera Söderberg HKScan, Martin Søvsø Tican), which the interviewees associated with differences in the general expectations, culture and level of development of the different countries. This means that society's expectations influence stakeholder expectations and vice versa. "If sustainability is not part of the general culture outside the workplace and if the importance of environmental protection, animal well-being and other social aspects is not part of the employees' everyday awareness, it is much harder for them to engage with sustainability at work and subsequently it takes much longer for the corporation to move towards sustainability" (Vera Söderberg HKScan).

All stakeholders are interconnected and it is hard to say in practice who initiates and where change starts (Ulla Nilsson, Arla); But as described by the interviewees, in order for change to take place there has to be critical mass asking for that change and this critical mass is created with a snowball effect as one stakeholder influences the other until it becomes generalized in society. From the perspective of a researcher who wants to evaluate the current practices, it is easier to compare practices to the 'snowball' which is society's expectations rather than 'the bits of snow' which are stakeholder's expectations that could potentially become a snowball. On the other hand, the observation that there is a shift

towards common global societal expectations is not supported by the interviewees, because according to them big differences still exist between national global societies.

5.5.2 The role of science and measurements

Companies use science to assist them with sustainability priority setting. Measurements, methods from standards that are grounded in science, LCAs, carbon and water footprint assessments, environmental impact assessments and information from indicators (Deirdre Doyle Rosderra, Eeva Juva Atria, Vera Söderberg HKScan, Kjell Lundén Pettersson Arla, Ulla Nilsson Arla, Martin Søvsø Tican, Friederike Meyer, Goldschmaus) are some of the things taken into consideration when deciding on sustainability priorities and in setting targets and goals. By knowing where the biggest impacts occur and what methods are available to address these impacts, companies can be more effective and choose low hanging fruits first. Science is found more commonly as a determinant of environmental sustainability (Martin Søvsø Tican, Deirdre Doyle Rosderra) whereas guidelines such as the UNGC and GRI assist industry more with social and economic issues (Eeva Juva, Vera Söderberg HKScan, Kjell Lundén Pettersson Arla).

The suggestions made in this thesis were based on comparing the findings from the disclosures against academic literature on sustainability in the food chain and also against the most commonly used guidelines. So the role of science has been taken into consideration and has been integrated into the suggestions.

5.5.3 The role of internal business priorities

A number of internal business priorities and characteristics were found to influence sustainability management, such as wanting to be a leader in the sector (Kjell Lundén Pettersson Arla), using it as a basis in creating a common culture (Vera Söderberg HKScan), utilizing the methods in the standards as a way of driving continuous improvement (Martin Søvsø Tican) or some charismatic or visionary leaders that champion the sustainability initiative and drive the work forward (Ulla Nilsson Arla, Eeva Juva Atria). These are just some examples on the subject, which was the least discussed during the interviews because the validity of the suggestions cannot be evaluated against the internal business priorities of each meat and dairy processor, since this is sensitive information that companies are not willing to share and often difficult to articulate as people are sometimes not really aware of being part of a culture. Finally cost reduction was unanimously named as a strong internal business priority. All corporations evaluate the cost of any sustainability measures against the benefits, during the process of setting sustainability priorities and prior to undertaking action.

6 Discussion

6.1 Methodology and suggestions for further research

In Europe, societal concern about the sustainability of meat and dairy is increasing. This thesis proposes that although the meat and dairy processors are not the main contributors to many of the impacts in the supply chain, they have a role to play in addressing this concern and making the shift towards more sustainable meat and dairy supply chains. Therefore, a research gap in the area of sustainability for the meat and dairy processors was identified and during the course of the study, although some relevant literature for specific impacts was found and subsequently, reviewed e.g. LCAs, no similar holistic research in this field was identified. The findings confirmed that many of the actions to mitigate the negative impacts caused by meat and dairy food chain can be initiated by the meat and dairy processors alone or in collaboration with other value chain members. One example to demonstrate the level of change that can be set in motion by processors even with respect to the prime issue of GHG emissions in agricultural production is Arla's commitment to reduce the footprint per kg of milk by 30% in 2020 (in relation to that of 1990) from Arla farms (Arla, 2014). Thus, in the interest of sustainability it is important to see what meat and dairy processors are doing and to try and suggest improvements.

The need for holistic research is based on the fact that society is asking for sustainability, which, as discussed extensively in the literature review, is a holistic concept but without a clear definition. This means that there is a need, aside from the theoretical discussion, to define in practical terms what industry means by sustainability and what society means by sustainability. Other difficulties arose during the course of this research with respect to the use of vocabulary and terminology in this area. For example, the words 'stakeholder' and 'society' can each carry several meanings. Additionally, it became clear that the content of many themes, e.g. 'local community' or 'community investments', is ambiguous and that issues are categorised differently according to different standards, groups of people etc. An example is that of 'employee wages' which can be seen as part of the economic issue 'share value equitably' or as a social 'labour issue'. A further example is that 'product quality and information' is included in the SAFA Framework as an 'economic resilience' category whereas the GRI classifies it under 'social responsibility'. There are three outcomes from this lack of consistency in terminology.

The first is that there is a need to clear out the clutter and homogenize meanings with words. This is not a simple process and can only be brought about by the involvement of many stakeholders, one of which is academia. There is evidently a lack of research into industry-specific 'sustainability' content definition. The SAFA Framework is an effort to unify expectations in the food industry from the perspective of the UN but that does not acquit academia of its role in seeking solutions. Indeed, from the literature review it is evident that there is now a considerable academic interest in the field of CSR and sustainability. This can be seen from the fact that very few of the citations used are over 4 years old and as the thesis progressed new research was constantly emerging. Thus, this is a specific direction sustainability research can take.

The second outcome is that the relevancy of the study is confirmed. These kinds of studies are needed since complexity and ambiguity of content make it difficult for industries to compare their respective priorities and to further compare them with the priorities of society, for this to be able to be done reciprocally and subsequently, realise where improvement is needed. In the current circumstances, such studies are essential in order to provide guidance

to companies and societal stakeholders wanting to implement positive change and move towards sustainability, because industry does not stop operating and impacts occur constantly.

The third outcome is that the study became more complex as the author had to determine the right level of detail because by digging too deep, it would be hard to reach any conclusion but by being too superficial, the conclusion would be invalid or inexact. This meant that a constant effort was required to check the meaning that each group of people assigned to words, terms or themes, which when considering there were, for example, 27 social groups and institutions assessed, is quite a formidable task. Therefore, examples of words and where relevant, explanations of terms were given and attention was drawn to the use of words in the analysis chapter. The author also had to be constantly aware of the possibility of her own semantic filters potentially influencing the findings. Additionally, the end results from the text mining had the disadvantage of being single terms or n-grams removed from their immediate context, which added to the complexity of term ambiguity. But, on the other hand, by using text mining, considerably more data could be included in the study, leading to a quantitative analysis, whereby more companies could be taken into account and a more representative view of European reality determined. This method also gave structure to the complexity of dealing with a fair number of large documents i.e. 50-60 pages long. The content analysis, which was carried out for societal stakeholder document assessment, had the advantage of maintaining the words in some sort of 'context' but structure had to be loaned from the text mining section and fewer documents could be reviewed.

Although many research papers make reference to society's demands as driving forces for sustainability, none were found that try to assess society's expectations per se and use them to evaluate a corporate sustainability agenda. This kind of research has been done from the perspective of other stakeholders e.g. (Calabrese et al., 2013), but not from that of society. One of the reasons for this is that despite the fact that many recognize the importance of society, it is, nevertheless, a very difficult stakeholder to define and measure. Consequently, with reference to the literature review section and methodology section as well as to the fact that the author has grounded her choices for defining and selecting groups to represent society in theory, the method of evaluation is new and yet to be academically tested. From this point of view the thesis initiates an academic discussion on the use of society's expectations as a measure of corporate sustainability practices and also, more generally, sees a need for academia to find methods of evaluating sustainability practices. The need to take the fact there is an ambiguity of terms into consideration when creating any method for evaluating sustainability is pinpointed.

6.2 Relevance and applicability of the suggestions

In the final subchapter of the analysis section (chapter 5.5) a feasibility analysis of the suggested improvements was carried out based on interviews with industry. The information here complements that subchapter.

The suggestions were found to be applicable to industry but it is important to consider that this thesis looked at the industry as a group but of course, individual companies are at different stages of development regarding their sustainability programmes. This means that even though the suggestions are generally applicable, each company needs to evaluate for themselves what they are lacking e.g. many companies do not have any sustainability-related disclosures so they need to take a more generalized approach. Many companies may benefit from reading the findings and comparing them to their own company practices to see how they measure up against other companies as well as against societal expectations. The

suggestions can also be used in the form given by industry leaders in sustainability who are seeking to fine tune their programmes. Although this study did not pinpoint any major legitimacy gap, areas of improvement have been noted. Societal stakeholders who, according to legitimacy theory want to see their expectations met, can use these suggested improvements to guide the legitimation process e.g. national societal stakeholders.

7 Conclusion

This thesis aims to fill the knowledge gap with regards to the sustainability practices in the European meat and dairy processing industry and to propose improvements. The meat and dairy processors sustainability priorities are determined by using corporate sustainability disclosures, reports and online information, as sources of information and analysing them through text mining. Their priorities are then compared to society's expectations in order to estimate whether a legitimacy gap occurs and to identify areas of improvement. Society's expectations are elicited through content analysis of the information found on societal stakeholders' websites. The selection of these stakeholders was based on extended stakeholder taxonomy. Finally, interviews with industry were used to ascertain whether the suggestions are valid and whether the implementation thereof is feasible.

There first finding is that 17 out of the 32 dairy processors and 28 out of the 37 meat processors disclose some sustainability related information and also that large differences exist between the comprehensiveness of the sustainability disclosures. Processors in the early stages of working with sustainability management will find it more useful to benchmark their specific practices against industry's sustainability practices and societal expectations in the findings and analysis sections of the report.

Concerning current sustainability practices, 29 themes are covered by the meat and dairy processors' sustainability practices. Although some differences exist between milk and dairy processors' priorities as well as differences in the content on websites and in reports, still the results generally indicate a high level of homogeneity. The themes with the highest involvement are 'human health & nutrition', 'employee health & safety', 'product nutritional value', 'energy conservation', 'food safety' and 'food quality'. Some issues that are clearly important for specific industries are 'greenhouse gas emissions' and 'responsible sourcing' for dairy and 'animal health' and 'animal welfare' for meat. A little further down the line come 'local community support', 'waste, recycling & packaging', 'water conservation', 'raw materials', 'corruption' and 'collaboration with farmers' and then comes the following group: 'training & education', 'biodiversity', 'transport & distribution', 'benefits', 'financial aid' and 'diversity & equal opportunity'. Finally of lesser importance but still present are 'shared value', 'community investments', 'human rights', 'supply chain collaboration', 'responsible marketing', 'access to food' and 'labour-management relations'. The research also found that the use of generalized terms is more likely to occur on websites than in reports.

The research found that there is high involvement and wide coverage of environmental impacts within the processing plants and the challenge currently is to work with primary production, especially with land use and biodiversity issues and in the case of meat processors GHG. Economic issues were found to be underrepresented and the corporation should go beyond the strict confines of financial aid to enhance its role in sharing value, supporting community and providing resilience to economic shocks. Most social issues are also comprehensively covered in the meat and dairy industries' sustainability disclosures, although companies need to make sure that they have implemented zero- tolerance policies for corruption, anti-competitive behaviour and human rights abuse with especial consideration being given to access to government funds and pressure put on small industrial counterparts. Facilitating consumer access to affordable and nutritious food is identified as an area requiring improvement. As regards sourcing, it became clear that supply chain responsibility is being integrated into the three sustainability pillars and its importance cannot be overstated. Fair pricing, ethical trading, working with retailers to influence consumer behaviour are some ideas of initiatives that processors can be involved in. In this area there

are clear opportunities for dairy processors to work more on animal health and welfare issues and for meat processors to collaborate more holistically with farmers.

Interviews conducted with industry confirmed the feasibility and applicability of the suggestions, and also the validity of using society's expectations as a method for assessing sustainability practices and identifying areas of improvement, although it was also pointed out that society differs within the EU so there are merits to approaching the issue from the perspective of national societies. In fact, in the early stages of conducting the thesis it became apparent that there is not a standardized method for assessing sustainability practices and this is an area where research is needed and the method used in this thesis which is grounded on theory and validated by industry contributes to this body of literature.

Finally attention should be drawn to the fact that the use of words, headings and themes by different bodies can vary considerably in terms of content and this complicates the task of working towards uniformity within and improvement of sustainability practices. For this situation to improve coordinated cross-stakeholder efforts are required not least from academia where there is ambiguity in the use of words.

Bibliography

Adams, M., & Hardwick, P. (1998). An analysis of corporate donations: United Kingdom evidence. *Journal of Management Studies, 35*(5), 641-654.

An Pan, Qi Sun, Adam M. Bernstein, Matthias B. Schulze, JoAnn E. Manson, Meir J. Stampfer, Walter C. Willett, Frank B. Hu. (2012). Red Meat Consumption and Mortality: Results From Two Cohorts of American Adults. *Archives of Internal Medicine.*

Arla. (2014). Sustainable farming. Retrieved 01/12/2014, 2014, from http://www.arla.com/about-us/responsibility/environmental-strategy/sustainable-farming/

Bachman, Bonnie J., Bashyal, Shristy, & Baumann, Margaret. (2012). Sustainability in the plastics industry: concerns, issues, and strategies. *Održivost u plastičarskoj industriji: problemi, pitanja i strategije., 33*(1), 6-11.

Banerjee, Subhabrata Bobby. (2002). Corporate environmentalism: the construct and its measurement. *Journal of Business Research, 55*(3), 177-191. doi: http://dx.doi.org/10.1016/S0148-2963(00)00135-1

Barkemeyer, Ralf, Figge, Frank, Holt, Diane, & Hahn, Tobias. (2009). What the Papers Say: Trends in Sustainability: A Comparative Analysis of 115 Leading National Newspapers Worldwide. *Journal of Corporate Citizenship*(33), 69-86.

Bartholet, Jeffrey. (2011). INSIDE THE MEAT LAB. *Scientific American, 304*(6), 64-69.

Baumgartner, Rupert J. (2014). Managing Corporate Sustainability and CSR: A Conceptual Framework Combining Values, Strategies and Instruments Contributing to Sustainable Development. *Corporate Social Responsibility & Environmental Management, 21*(5), 258-271. doi: 10.1002/csr.1336

Ben&Jerry's. (n.d.). HappyCows.eu. Retrieved 14/08/2014, 2014, from http://www.happycows.eu/en/sad-truth

Bennett, Martin, & James, Peter. (1999). *Sustainable measures : evaluation and reporting of environmental and social performance / edited by Martin Bennett and Peter James with Leon Klinkers*: Sheffield : Greenleaf, 1999.

Blood, Robert. (2008). A study of Europe's leading NGOs and their contribution to policymaking in Brussels :Executive Summary. In D. Green (Ed.), *European NGO Futures*. Freiburg, Germany: SIGWatch.

Buttriss, J. L. (2013). Food security through the lens of nutrition. *Nutrition Bulletin, 38*(2), 254-261. doi: 10.1111/nbu.12031

Cairns, Robert D. (2006). On accounting for sustainable development and accounting for the environment. *Resources Policy, 31*(4), 211-216. doi: http://dx.doi.org/10.1016/j.resourpol.2007.02.002

Calabrese, Armando, Costa, Roberta, Menichini, Tamara, & Rosati, Francesco. (2013). Does Corporate Social Responsibility Hit the Mark? A Stakeholder Oriented Methodology for CSR Assessment. *Knowledge & Process Management, 20*(2), 77-89. doi: 10.1002/kpm.1406

Carroll, Archie B. (2008). A History of Corporate Social Responsibility: Concepts and Practices: Oxford University Press.

Chan, Eric S. W. (2013). Gap analysis of green hotel marketing. *International Journal of Contemporary Hospitality Management, 25*(7), 1017-1048. doi: 10.1108/IJCHM-09-2012-0156

Cho, Charles H., & Patten, Dennis M. (2007). The role of environmental disclosures as tools of legitimacy: A research note. *Accounting, Organizations and Society, 32*(7–8), 639-647. doi: http://dx.doi.org/10.1016/j.aos.2006.09.009

De Grosbois, D. (2012). Corporate social responsibility reporting by the global hotel industry: Commitment, initiatives and performance. *International Journal of Hospitality Management, 31*(3), 896-905. doi: 10.1016/j.ijhm.2011.10.008

de Vries, M., & de Boer, I. J. M. (2010). Comparing environmental impacts for livestock products: A review of life cycle assessments. *Livestock Science, 128*(1–3), 1-11. doi: http://dx.doi.org/10.1016/j.livsci.2009.11.007

Deegan, Craig. (2002). Introduction: The legitimising effect of social and environmental disclosures -- a theoretical foundation. *Accounting, Auditing & Accountability Journal, 15*(3), 282.

Dias-Sardinha, Idalina, & Reijnders, Lucas. (2005). Evaluating environmental and social performance of large Portuguese companies: a balanced scorecard approach. *Business Strategy & the Environment (John Wiley & Sons, Inc), 14*(2), 73-91. doi: 10.1002/bse.421

Djekic, Ilija, Miocinovic, Jelena, Tomasevic, Igor, Smigic, Nada, & Tomic, Nikola. (2014). Environmental life-cycle assessment of various dairy products. *Journal of Cleaner Production, 68*, 64-72. doi: 10.1016/j.jclepro.2013.12.054

Donaldson, Thomas, & Preston, Lee E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications*,* 65.

Dowling, John, & Pfeffer, Jeffrey. (1975). Organizational Legitimacy: Social Values and Organizational Behavior*,* 122.

Duarte, Fernanda. (2010). Working with Corporate Social Responsibility in Brazilian Companies: The Role of Managers' Values in the Maintenance of CSR Cultures. *Journal of Business Ethics, 96*(3), 355-368. doi: 10.1007/s10551-010-0470-9

EC, European Comission. (2009). *Mainstreaming sustainable development into EU policies: 2009 Review of the European Union Strategy for Sustainable Development* Brussels: Retrieved from http://ec.europa.eu/environment/eussd/.

EC, European Comission. (2011a). *A Renewed EU Strategy 2011-14 for Corporate Social Responsibility*. Brussels.

EC, European Comission. (2011b). Study on the Competitiveness of the European Meat Processing Industry. Luxenbourg: European Comission Enterprise and Industry.

EC, European Comission. (2014a). *Budget 2014 in figures*. Retrieved from http://ec.europa.eu/budget/figures/2014/2014_en.cfm.

EC, European Comission. (2014b). Research & Innovation - Bioeconomy -Food Retrieved 18.10.14, 2014, from http://ec.europa.eu/research/bioeconomy/food/index_en.htm

EFFAT, European Federation of Food Agriculture and Tourism Trade Unions. (2010). Putting meat on the bones: A report on the structure and dynamics of the European meat industry. In H. Wiedenhofer (Ed.).

Eide, MereteHøgaas. (2002). Life cycle assessment (LCA) of industrial milk production. *The International Journal of Life Cycle Assessment, 7*(2), 115-126. doi: 10.1007/BF02978855

European Topic Centre on Sustainable Consumption and Production. (2009). *European retailer initiatives along life cycle chain. The role of food retailing in the move towards more sustainable consumption and production*. European Environmental Agency. Copenhagen.

Eurostat. (2011). *Food: from farm to fork statistics*. Luxenbourg: Publications Office of the European Union.

Eurostat. (2013a). Agricultural statistics. Retrieved 15/8/2014, from http://epp.eurostat.ec.europa.eu/portal/page/portal/agriculture/introduction

Eurostat. (2013b). *Manufacture of food products statistics - NACE Rev. 2.* Retrieved from http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Manufacture_of_food_products_statistics_-_NACE_Rev._2.

Fantin, V., Buttol, P., Pergreffi, R., & Masoni, P. (2012). Life cycle assessment of Italian high quality milk production. A comparison with an EPD study. *Journal of Cleaner Production, 28*, 150-159. doi: 10.1016/j.jclepro.2011.10.017

FAO, Food and Agriculture Organization of the United Nations. (2007). Livestock's Long Shadow: Environamental Issues and Options.

FAO, Food and Agriculture Organization of the United Nations. (2013, 25 September 2012). FAO's Animal Production and Health Division: Meat Consumption. Retrieved 3 June, 2013, from http://www.fao.org/ag/againfo/themes/en/meat/background.html

FAO, Food and Agriculture Organization of the United Nations. (2014). Sustainability assessment of food and agricultural systems guidelines Version 3 (pp. 268). Rome.

Fifka, Matthias S., & Drabble, Maria. (2012). Focus and Standardization of Sustainability Reporting – A Comparative Study of the United Kingdom and Finland. *Business Strategy and the Environment, 21*(7), 455-474. doi: 10.1002/bse.1730

Forsman-Hugg, S., Katajajuuri, J. M., Riipi, I., Ma¨kela¨, J., Ja¨rvela¨, K., & Timonen, P. (2013). Key CSR dimensions for the food chain. *British Food Journal, 115*(1), 30-47. doi: .DOI: 10.1108/00070701311289867.

Freeman, R. Edward. (2010). *Strategic management : a stakeholder approach / R. Edward Freeman*: Cambridge : Cambridge University Press, 2010.

Garvare, Rickard, & Johansson, Peter. (2010). Management for sustainability - A stakeholder theory. *Total Quality Management & Business Excellence, 21*(7), 737-744. doi: 10.1080/14783363.2010.483095

Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. (2013). Tackling Climate Change through Livestock: A global assessment of emissions and mitigation opportunities. Rome: Food and Agriculture Organization of the United Nations. FAO.

Gimenez, Cristina, & Tachizawa, Elcio M. (2012). Extending sustainability to suppliers: a systematic literature review. *Supply Chain Management, 17*(5), 531-543. doi: 10.1108/13598541211258591

Gira. (2012). The Gira European Meat Company Panorama 2010/11-2015 : Markets – Operators – News – Trends. France: Gira.

Given, Lisa M. (2008). *The Sage encyclopedia of qualitative research methods [Elektronisk resurs] / editor, Lisa M. Given*: Thousand Oaks : Sage Online, 2008.

González-García, Sara, Castanheira, ÉricaG, Dias, AnaCláudia, & Arroja, Luis. (2013). Environmental life cycle assessment of a dairy product: the yoghurt. *The International Journal of Life Cycle Assessment, 18*(4), 796-811. doi: 10.1007/s11367-012-0522-8

Gopal, Ram, Marsden, James R., & Vanthienen, Jan. (2011). Information mining — Reflections on recent advancements and the road ahead in data, text, and media mining. *Decision Support Systems, 51*(4), 727-731. doi: http://dx.doi.org/10.1016/j.dss.2011.01.008

Goyal, P., Rahman, Z., & Kazmi, A. A. (2013). Corporate sustainability performance and firm performance research: literature review and future research agenda. *Management Decision, 51*(2), 361-379. doi: .DOI: 10.1108/00251741311301867.

Gray, Rob. (2010). Is accounting for sustainability actually accounting for sustainability…and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society, 35*(1), 47-62. doi: http://dx.doi.org/10.1016/j.aos.2009.04.006

GRI, Global Reporting Initiative. (2000). Sustainability Reporting Guidelines & Food Processing Sector Supplement *Version 3.0*. Boston: Global Reporting Initiative.

GRI, Global Reporting Initiative. (2013). G4 Sustainability reporting guidelines: Implementation manual (pp. 266). Amsterdam: Global Reporting Initiative.

Hahn, Rüdiger. (2011). Integrating corporate responsibility and sustainable development: a normative-conceptual approach to holistic management thinking. *Journal of Global Responsibility*, 8-22.

Hahn, Rüdiger, & Kühnen, Michael. (2013). Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research. *Journal of Cleaner Production, 59*(0), 5-21. doi: http://dx.doi.org/10.1016/j.jclepro.2013.07.005

Haniffa, R. M., & Cooke, T. E. (2005). The impact of culture and governance on corporate social reporting. *Journal of Accounting and Public Policy, 24*(5), 391-430.

Henning, Brian. (2011). Standing in Livestock's "Long Shadow": The Ethics of Eating Meat on a Small Planet. *Ethics & the Environment, 16*(2), 63-93. doi: 10.2979/ethicsenviro.16.2.63

Henriques, Adrian, & Richardson, Julie. (2004). *The triple bottom line : does it all add up? : assessing the sustainability of business and CSR / edited by Adrian Henriques and Julie Richardson*: London : Earthscan, 2004.

Hunt, Tim, & Battum, Saskia van. (2012). Global Dairy Top - 20: Jostling for position in a changing global market: Rabobank International Food & Agribusiness Research and Advisory.

ISO, International Organization for Standardization. (2010). ISO 26000:2010 Social Responsibility: Discovering ISO 26000 (pp. 8). Genève: ISO Central Secretariat.

Jesse, E.V. (2013). Who and where are the world's top dairy processors? Wisconcin: THE BABCOCK INSTITUTE for International Dairy Research and Development.

Kalyar, Masood Nawaz, Rafi, Nosheen, & Kalyar, Awais Nawaz. (2013). Factors Affecting Corporate Social Responsibility: An Empirical Study. *Systems Research & Behavioral Science, 30*(4), 495-505. doi: 10.1002/sres.2134

Keenan, Cheryl, & Kashmanian, Richard M. (2012). Benchmarking corporate environmental compliance performance: A practical approach. *Environmental Quality Management, 21*(3), 57-68. doi: 10.1002/tqem.20327

Labuschagne, C., Brent, A. C., & Van Erck, R. P. G. (2005). Assessing the sustainability performances of industries. *Journal of Cleaner Production, 13*(4), 373-385. doi: 10.1016/j.jclepro.2003.10.007

LEI. (2011). Evaluation of CAP measures applied to the dairy sector - Chapter 11: EQ7: Structure of dairy industry: European Commission.

Lépineux, F. (2005). Stakeholder theory, society and social cohesion. *Corporate Governance, 5*(2), 99-110. doi: 10.1108/14720700510562640

Leppelt, Thomas, Foerstl, Kai, Reuter, Carsten, & Hartmann, Evi. (2013). Sustainability management beyond organizational boundaries–sustainable supplier relationship management in the chemical industry. *Journal of Cleaner Production, 56*(0), 94-102. doi: http://dx.doi.org/10.1016/j.jclepro.2011.10.011

Liew, Wan Te, Adhitya, Arief, & Srinivasan, Rajagopalan. (2014). Sustainability trends in the process industries: A text mining-based analysis. *Computers in Industry, 65*(3), 393-400. doi: 10.1016/j.compind.2014.01.004

Lozano, Rodrigo, & Huisingh, Don. (2011). Inter-linking issues and dimensions in sustainability reporting. *Journal of Cleaner Production, 19*(2–3), 99-107. doi: http://dx.doi.org/10.1016/j.jclepro.2010.01.004

Madrakhimova, Firuza S. (2013). EVOLUTION OF THE CONCEPT AND DEFINITION OF CORPORATE SOCIAL RESPONSIBILITY. *Global Conference on Business & Finance Proceedings, 8*(2), 113-118.

Mahadeo, Jyoti Devi, Oogarah-Hanuman, Vanisha, & Soobaroyen, Teerooven. (2011). Changes in social and environmental reporting practices in an emerging economy (2004–2007): Exploring the relevance of stakeholder and legitimacy theories. *Accounting Forum, 35*(3), 158-175. doi: http://dx.doi.org/10.1016/j.accfor.2011.06.005

Maletič, Matjaž, Maletič, Damjan, Dahlgaard, Jens J., Dahlgaard-Park, Su Mi, & Gomišček, Boštjan. (2014). Sustainability exploration and sustainability exploitation: from a literature review towards a conceptual framework. *Journal of Cleaner Production, 79*(0), 182-194. doi: http://dx.doi.org/10.1016/j.jclepro.2014.05.045

Maloni, Michael, & Brown, Michael. (2006). Corporate Social Responsibility in the Supply Chain: An Application in the Food Industry. *Journal of Business Ethics, 68*(1), 35-52. doi: 10.1007/s10551-006-9038-0

Marsden, T. (2009). Sustainability. In R. Kitchin & N. Thrift (Eds.), *International Encyclopedia of Human Geography* (pp. 103-108). Oxford: Elsevier.

Mauerhofer, Volker. (2008). 3-D Sustainability: An Approach for Priority Setting in Situation of Conflicting Interests Towards a Sustainable Development. *Ecological Economics, 64*(3), 496-506. doi: http://www.sciencedirect.com/science/journal/09218009

Max, B. E. Clarkson. (1995). A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance*,* 92.

meat.org. (2014). The Website the Meat Industry Doesn't Want You to See. Retrieved 09/06/13, 2013, from http://www.meat.org/

Medel-González, Frank, García-Ávila, Lourdes, Acosta-Beltrán, Adael, & Hernández, Cecilia. (2013). Measuring and Evaluating Business Sustainability: Development and Application of Corporate Index of Sustainability Performance. *Sustainability Appraisal: Quantitative Methods & Mathematical Techniques for Environmental Performance Evaluation*, 33.

Mekonnen, M. M., & Hoekstra, A. Y. (2012). A Global Assessment of the Water Footprint of Farm Animal Products. *Ecosystems, 15*(3), 401-415. doi: 10.1007/s10021-011-9517-8

Milani, F. X., Nutter, D., & Thoma, G. (2011). Invited review: environmental impacts of dairy processing and products: A review. *Journal of Dairy Science, 94*(9), 4243-4254. doi: 10.3168/jds.2010-3955

Miller, G. Tyler, & Spoolman, Scott. (2012). *Living in the environment / G. Tyler Miller, Jr., Scott E. Spoolman*: [London?] : Brooks/Cole Cengage Learning, cop. 2012 17. ed., International ed.

Milne, M. J., & Patten, D. M. (2002). Securing organizational legitimacy: an experimental decision case examining the impact of environmental disclosures. *ACCOUNTING AUDITING AND ACCOUNTABILITY JOURNAL, 15*, 372-405.

Mishra, Pavan, & Sharma, Payal. (2012). Green Marketing: Challenges and Opportunities for Business. *Journal of Marketing & Communication, 8*(1), 35-41.

Mitchell, Ronald K., Agle, Bradley R., & Wood, Donna J. (1997). TOWARD A THEORY OF STAKEHOLDER IDENTIFICATION AND SALIENCE: DEFINING THE PRINCIPLE OF WHO AND WHAT REALLY COUNTS. *Academy of Management Review, 22*(4), 853-886. doi: 10.5465/AMR.1997.9711022105

Modapothala, J. R. (2010). *Appraising the Corporate Sustainability Reports - Text Mining and Multi-Discriminatory Analysis*.

Monfardini, P., Barretta, A. D., & Ruggiero, P. (2013). Seeking legitimacy: Social reporting in the healthcare sector. *Accounting Forum, 37*(1), 54-66. doi: 10.1016/j.accfor.2012.11.001

Montiel, Ivan, & Delgado-Ceballos, Javier. (2014). Defining and Measuring Corporate Sustainability: Are We There Yet? *Organization & Environment, 27*(2), 113-139. doi: 10.1177/1086026614526413

Nguyen, Thu Lan T., Hermansen, John E., & Mogensen, Lisbeth. (2012). Environmental costs of meat production: the case of typical EU pork production. *Journal of Cleaner Production, 28*, 168-176. doi: 10.1016/j.jclepro.2011.08.018

Nilsson, K., Flysjö, A., Davis, J., Sim, S., Unger, N., & Bell, S. (2010). Comparative life cycle assessment of margarine and butter consumed in the UK, Germany and France. *International Journal of Life Cycle Assessment, 15*(9), 916-926. doi: 10.1007/s11367-010-0220-3

OECD, Organisation for Economic Co-operation and Development. (2014). OECD Guidelines for Multinational Enterprises: RESPONSIBLE BUSINESS CONDUCT MATTERS (pp. 23).

Okoye, Adaeze. (2009). Theorising Corporate Social Responsibility as an Essentially Contested Concept: Is a Definition Necessary? *Journal of Business Ethics, 89*(4), 613-627. doi: 10.1007/s10551-008-0021-9

Omkareshwar, Manappa. (2013). Green Marketing Initiatives by Corporate World: A Study. *Advances in Management, 6*(3), 20-26.

Ortiz-Rodríguez, O. O., & García-Cáceres, R. G. (2013). Assessing sustainability within the construction industry by means of a composite indicator. *DYNA (Colombia), 80*(182), 15-24.

Panwar, Rajat, Hansen, Eric, & Kozak, Robert. (2014). Evaluating Social and Environmental Issues by Integrating the Legitimacy Gap With Expectational Gaps: An Empirical Assessment of the Forest Industry. *Business & Society, 53*(6), 853-875. doi: 10.1177/0007650312438884

Patrizia, Gazzola, & Carlotta, Meo Colombo. (2011). THE ROLE OF THE SUSTAINABILITY REPORT IN CAPITALISTIC FIRM. *Annals of the University of Oradea, Economic Science Series, 20*(2), 243-250.

Prescott, Dave, Singh, Alok, & Davy, Aidan. (2002). Food for thought: Corporate social responsibility for food and beverage manufacturers: International Business Leaders Forum.

PRWeb. (2013, 22 March 2013). Meat Processing in the UK Industry Market Research Report Now Updated by IBISWorld. Retrieved June 4, 2013, from http://www.prweb.com/releases/2013/3/prweb10555969.htm

Reckmann, K., Traulsen, I., & Krieter, J. (2012). Environmental Impact Assessment – methodology with special emphasis on European pork production. *Journal of Environmental Management, 107*(0), 102-109. doi: http://dx.doi.org/10.1016/j.jenvman.2012.04.015

Reynolds, Christian John, Buckley, Jonathan David, Weinstein, Philip, & Boland, John. (2014). Are the Dietary Guidelines for Meat, Fat, Fruit and Vegetable Consumption Appropriate for Environmental Sustainability? A Review of the Literature. *Nutrients, 6*(6), 2251-2265. doi: 10.3390/nu6062251

Rivera-Camino, Jaime. (2007). Re-evaluating green marketing strategy: a stakeholder perspective. *European Journal of Marketing, 41*(11/12), 1328-1358. doi: 10.1108/03090560710821206

Schaltegger, Stefan, Bennett, Martin, & Burritt, Roger. (2006). *Sustainability accounting and reporting / edited by Stefan Schaltegger, Martin Bennett and Roger Burritt*: Dordrecht ; [London] : Springer, 2006.

Schneider, J. L., Wilson, A., & Rosenbeck, J. M. (2010). Pharmaceutical companies and sustainability: An analysis of corporate reporting. *Benchmarking, 17*(3), 421-434. doi: 10.1108/14635771011049371

Searcy, Cory. (2012). Corporate Sustainability Performance Measurement Systems: A Review and Research Agenda. *107*, 239-253. doi: 10.1007/s10551-011-1038-z

Seuring, Stefan, & Gold, Stefan. (2013). Sustainability management beyond corporate boundaries: from stakeholders to performance. *Journal of Cleaner Production, 56*(0), 1-6. doi: http://dx.doi.org/10.1016/j.jclepro.2012.11.033

Sharma, S., & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic Management Journal, 26*(2), 159-180. doi: 10.1002/smj.439

Sibbald, Shannon L., Singer, Peter A., Upshur, Ross, & Martin, Douglas K. (2009). Priority setting: what constitutes success? A conceptual framework for successful priority setting. *BMC Health Services Research, 9*, 1-12. doi: 10.1186/1472-6963-9-43

Smith, Timothy M. (2013). Climate change: Corporate sustainability in the supply chain. *Bulletin of the Atomic Scientists, 69*(3), 43-52. doi: 10.1177/0096340213487310

Ştefea, P., & Pelin, A. (2009). THE IMPACT OF ENVIRONMENTAL PERFORMANCE ON THE MARKET VALUE OF COMPANIES. *IMPACTUL PERFORMANŢELOR DE MEDIU ASUPRA VALOARII DE PIAŢĂ A COMPANIILOR., 11*(2), 1-18.

Steurer, Reinhard, Langer, Markus E., Konrad, Astrid, & Martinuzzi, André. (2005). Corporations, Stakeholders and Sustainable Development I: A Theoretical Exploration of Business-Society Relations, 263.

Stokstad, Erik. (2010). Could Less Meat Mean More Food? *Science, 327*(5967), 810-811.

Suchman, Mark C. (1995). MANAGING LEGITIMACY: STRATEGIC AND INSTITUTIONAL APPROACHES. *Academy of Management Review, 20*(3), 571-610. doi: 10.5465/AMR.1995.9508080331

Sweeney, Lorraine, & Coughlan, Joseph. (2008). Do different industries report Corporate Social Responsibility differently? An investigation through the lens of stakeholder theory. *Journal of Marketing Communications, 14*(2), 113-124. doi: 10.1080/13527260701856657

Thomassen, M. A., & De Boer, I. J. M. (2005). Evaluation of indicators to assess the environmental impact of dairy production systems. *Agriculture, Ecosystems and Environment, 111*(1-4), 185-199. doi: 10.1016/j.agee.2005.06.013

Tukker, Arnold, Goldbohm, R. Alexandra, de Koning, Arjan, Verheijden, Marieke, Kleijn, René, Wolf, Oliver, . . . Rueda-Cantuche, Jose M. (2011). Environmental impacts of changes to healthier diets in Europe. *Ecological Economics, 70*(10), 1776-1788. doi: 10.1016/j.ecolecon.2011.05.001

UNEP, United Nations Environment Programme. (2012). 21 Issues for the 21st Century: Result of the UNEP Foresight Process on Emerging Environmental Issues (pp. 56pp). Nairobi, Kenya: United Nations Environment Programme (UNEP).

UNGC, United Nations Global Compact. (2012). *After the signature: A Guide to Engagement in the United Nations Global Compact*. UN Global Compact Office.

UNSDSN, United Nations Sustainable Development Solutions Network. (2014). An Action Agenda for Sustainable Development - Thematic Group 12.

Van Alstine, James, & Barkemeyer, Ralf. (2014). Business and development: Changing discourses in the extractive industries. *Resources Policy, 40*(0), 4-16. doi: http://dx.doi.org/10.1016/j.resourpol.2014.01.006

van der Laan, Sandra. (2009). The Role of Theory in Explaining Motivation for Corporate Social Disclosures: Voluntary Disclosures vs 'Solicited' Disclosures. *Australasian Accounting Business & Finance Journal, 3*(4), 15-29.

van Hoek, Angela H. A. M., de Jonge, Rob, van Overbeek, Wendy M., Bouw, El, Pielaat, Annemarie, Smid, Joost H., . . . Heres, Lourens. (2012). A quantitative approach towards a better understanding of the dynamics of Salmonella spp. in a pork slaughter-line. *International Journal of Food Microbiology, 153*(1/2), 45-52. doi: 10.1016/j.ijfoodmicro.2011.10.013

Walker, Kent, & Wan, Fang. (2012). The Harm of Symbolic Actions and Green-Washing: Corporate Actions and Communications on Environmental Performance and Their Financial Implications. *Journal of Business Ethics, 109*(2), 227-242. doi: 10.1007/s10551-011-1122-4

Walsh, Fergus. (2013, 15 February 2013). Horsemeat - food fraud, not food safety, *BBC Health*. Retrieved from http://www.bbc.com/news/health-21482127

WCED, World Commission on Environment and Development. (1987). *Our common future*: Oxford : Oxford Univ. Press, 1987.

WEF, World Economic Forum. (2012). More with Less: Scaling Sustainable Consumption and Resource Efficiency: World Economic Forum.

Weidema, B. P., Wesnæs, M., Hermansen, J., Kristensen, T., & Halberg, N. . (2008). Environmental Improvement Potentials of Meat and Dairy Products. In P. E. a. L. Delgado (Ed.), *JRC-IPTS*. Luxembourg: European Communities.

Wheeler, David, & Sillanpää, Maria. (1998). Including the stakeholders: The business case. *Long Range Planning, 31*(2), 201-210. doi: http://dx.doi.org/10.1016/S0024-6301(98)00004-1

WWF, World Wildlife Fund. (2014a). Sustainable Agriculture: Beef. Retrieved 14/8/2014, 2014, from http://www.worldwildlife.org/industries/beef

WWF, World Wildlife Fund. (2014b). Sustainable Agriculture: Dairy. Retrieved 14/8/2014, 2014, from http://www.worldwildlife.org/industries/dairy

Yin, Robert K. (2003). *Case study research : design and methods / Robert K. Yin*: Thousand Oaks : Sage Publications, cop. 2003