

THE ROLE OF SUSTAINABILITY REPORTING IN THE AGRI-FOOD SUPPLY CHAIN

by

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Abstract

Agricultural sustainability is a growing concern for the general public because of agriculture's considerable use of land, water, and other natural resources. In response to this growing concern, companies have started to publish sustainability reports to highlight sustainable practices. The purpose of this study was to examine the role of sustainability reporting from companies in the agri-food supply chain. The research objectives of this study were (1) determine the prevalence of sustainability reporting among food system companies, (2) identify, to what extent, the three components of the triple bottom line model are represented in sustainability reports, (3) determine if/how sustainability reporting differs among sectors of the agriculture supply chain, (4) assess how companies describe stakeholder engagement in sustainability reports, and (5) explore which aspects of reputation are included in sustainability reports. In total, 66 agribusinesses were included in this study of which 16 had published sustainability reports. Data for the quantitative content analysis were collected using a scorecard based on the Global Reporting Initiative (GRI) guidelines. Results indicated that sustainability reporting is limited among companies involved in the agriculture and food supply chain. Though better than sectors studied in previous research, agribusinesses also struggle to explain stakeholder engagement and need to focus sustainability report content to align more closely with the three components of the triple bottom line model – environment, economic, and social.

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Dedication

To my parents, Jeff & Jan Topp

Chapter 1 - Introduction

A 2013 report issued by the United Nations stated that the global population is projected to reach 9.6 billion by 2050; a dramatic increase from the current population of 7.2 billion (“World population projected to reach 9.6 billion by 2050,” 2013). As a result of this projected increase, the issue of sustainability in agriculture is a growing concern for the general public (Wurth, 2014). Specifically, 81% of consumers claim to care about sustainability in agriculture (BASF, 2014; Wurth, 2014). This increasing population also will put pressure on the agricultural sector to produce enough food and resources to meet the growing demand, so sustainability is a more important issue now than ever before (Accenture, 2012). In response, numerous companies have started to implement sustainable practices, as well as promote these practices to the general public in the form of non-financial, sustainability reports (Ihlen, Bartlett, & May, 2011; Kolk, 2004).

The word sustainable was initially used hundreds of years ago (Sutton, 2004); however, the concept of sustainability and sustainable development became more well-defined less than 30 years ago when introduced in the October 1987 report issued by the World Commission on Environment and Development (WCED) (Voinov, 2008). This commission’s report, known as the *Brundtland Report*, identified three core principles of sustainability (Rankin & Gray, 2011; WCED, 1987). These three pillars of sustainability – environment, social, and economic – are frequently addressed in sustainability reports issued by businesses (Kolk, 2003).

It has been suggested that businesses publish sustainability reports in an effort to practice corporate social responsibility (CSR) (Nidumolu, 2009). Howard R. Bowen is credited with laying the foundation for CSR, explaining that the term corporate social responsibility referred to

a businessman's obligations to pursue policies, make decisions, or follow lines of action desired by society in terms of its objectives and values (Bowen, 1953).

Bowen's book marked the beginning of increased attempts to define corporate social responsibility. The CSR literature published in the 1960s and 1970s focused on defining CSR more specifically (Carroll, 1999). During that time, numerous authors presented their definitions of the concept, some of the most prominent include Keith Davis, William C. Fredrick, Joseph W. McGuire, and Clarence C. Walton. Starting in the 1980s, the focus shifted from defining CSR to adapting it into various concepts, theories, and models (Carroll, 1999).

In 1980, Thomas M. Jones presented CSR as a voluntary process. Jones proposed the following definition:

Corporate social responsibility is the notion that corporations have an obligation to constituent groups in society other than stockholders and beyond that prescribed by law and union contract. Two facets of this definition are critical. First, the obligation must be voluntarily adopted; behavior influenced by the coercive forces of law or union contract is not voluntary. Second, the obligation is a broad one, extending beyond the traditional duty to shareholders to other societal groups such as customers, employees, suppliers, and neighboring communities. (Jones, 1980, p. 59-60)

The concept of corporate social responsibility has been around for more than 50 years; however, researchers suggest that globalization has resulted in more rigorous discussions about the relationship between business and society (Ihlen et al., 2011). In recent years, consumers have started asking companies to "engage in stakeholder dialogue and implement transparency/accountability through the publication of non-financial reports" (Ihlen et al., 2011, p. 4). While businesses have engaged in corporate social responsibility in a variety of ways over the years, an

increasing number of businesses are responding to this stakeholder request for transparency and are indicating adoption of CSR practices through the publication of non-financial sustainability reports (Ihlen et al., 2011). In addition, while many initial non-financial reports focused only on the environment, the number of pure environmental reports is declining and an increasing number of reports now include social and economic components with environmental aspects (Kolk, 2003).

Stakeholders have also started raising concerns about the impact companies have on the environment. Issuing sustainability reports is one way for companies to address these concerns and build trust with stakeholders (Mock, Strohm, & Swartz, 2007). There are a multitude of reasons for companies to focus on sustainability besides stakeholder pressure. These reasons include enhanced reputation, increased risk management capabilities, and reduced costs and increased revenue (Accenture, 2012). Perhaps the greatest driving force behind the recent focus on sustainability by companies is the desire to protect the company brand and reputation (Detre & Gunderson, 2011; Ihlen et al., 2011).

Statement of the Problem

While many stakeholders have started requesting companies to highlight sustainability practices (Sridhar, 2012), there is no law that requires businesses to practice sustainable behavior or issue sustainability reports (Kolk, 2008). True to the definition of CSR suggested by Thomas M. Jones (1980), engagement in CSR and the publication of sustainability reports remains voluntary (Mock et al., 2007). Despite the voluntary nature of CSR, specifically sustainability reporting, an increasing number of companies are issuing non-financial reports (Junior, Best, & Cotter, 2013; Kolk, 2003). In fact, the practice of issuing reports has become a worldwide phenomenon that now occurs in both “developed, and emerging economies around the world”

(Junior et al., 2013, p. 1). Among Fortune Global 250 companies there has been a 60% increase in issued reports in the last decade (Ihlen et al., 2011; Kolk, 2003).

The focus on sustainability is rapidly increasing for companies along the agri-food supply chain (Aigner, Hopkins, & Johansson, 2003; Rankin et al., 2011); this is largely the result of increasing concern from consumers regarding the sustainability of the agricultural industry (Wurth, 2014). The agri-food supply chain is complex and includes input suppliers, farmers, food manufacturers, and retailers (Carolan, 2012; KPMG International Cooperative, 2013a).

Both the crop and livestock sectors in the agriculture industry are complex and have undergone major structural changes in recent decades (USDA Economic Research Service, 2013; USDA Economic Research Service, 2009). For the commodity sector the changes have been focused on the increasing size of U.S. farms (USDA Economic Research Service, 2013). Today, the average size of farms is 1,100 acres or more, compared to 600 acres in the 1980s (USDA Economic Research Service, 2013). Changes in the livestock sector are associated with four aspects: “increased farm size, changes in production technologies, increased enterprise specialization, and tighter vertical coordination between the stages of production” (USDA Economic Research Service, 2009, p. 1).

The total value of U.S. agricultural products in 2012 was \$394.6 billion; the crops sector accounts for nearly 54% of the total value of U.S. agricultural products (United States Department of Agriculture, 2012). In 2012 the value of the crop sector was \$212.4 billion, compared to \$182.2 billion for the livestock sector (United States Department of Agriculture, 2012). Continued economic growth on a global scale has built a foundation for strong crop demand that is expected to be sustained in upcoming years (United States Department of Agriculture, 2014). On the livestock side, annual average consumption of meat and poultry

products has declined to 203 pounds per capita in 2014, compared to 221 pounds per capita in 2007; this is largely the result of decreased meat production and increased exports (United States Department of Agriculture, 2014). With increased meat production expected, red meat and poultry consumption is projected to increase to 215 pounds per capita by 2023 (United States Department of Agriculture, 2014).

The agriculture industry is a significant user of land, water, and other resources, which makes the issue of sustainability an important topic for the industry (Aigner et al., 2003; Rankin et al., 2011). Despite increased concern from consumers about agricultural sustainability (Wurth, 2014), there has been relatively little research on how agribusinesses engage in demonstrating CSR through the publication of sustainability reports. Many researchers argue that, due to its large environmental and social impacts, the issue of sustainability reporting is growing in importance for businesses in the agricultural sector (Rankin et al., 2011). Like other businesses, agribusinesses are having to shift focus from being strictly profit-driven and focusing on gains in productivity to embracing the holistic approach of sustainability, which also includes social and environmental factors (Heller & Keoleian, 2003). Due to involvement in the food production supply chain, agribusinesses face a unique set of challenges, which includes providing a secure food supply, limiting environmental impacts, and exercising fair labor standards (Aigner et al., 2003; Rankin et al., 2011).

Sustainability may be growing in importance for businesses; however, the lack of awareness of how the market will react to the adoption of CSR practices has made agribusiness decision makers hesitant to adopt these practices (Detre & Gunderson, 2011). The lack of research on whether the market values CSR practices is one reason for limited CSR adoption by agribusinesses (Detre & Gunderson, 2011). Other researchers have suggested that CSR is a niche

strategy; “makes good business sense for some corporations in some sectors under certain circumstances” (Ihlen et al., 2011, p. 8). However, this research does not identify these sectors or circumstances. Additional research should work to identify the circumstances in which CSR makes good business sense.

In addition to no legal requirement for practicing or reporting sustainability, there are no universal reporting guidelines for businesses to follow (Golob & Bartlett, 2007). Some reporting standards, such as the Global Reporting Initiative, Carbon Disclosure Project, and Dow Jones Sustainability Index, have been introduced in recent years to aid businesses in publishing sustainability initiatives (Accenture, 2012; Detre & Gunderson, 2011). These standards provide guidelines for businesses to determine what content to include in sustainability reports (Fifka & Drabble, 2012). Company’s not currently practicing sustainability should consider what sustainability indicators are included in reporting guidelines to assist reporting efforts and data collection.

Furthermore, the vague definition of sustainability (Rankin et al., 2011) and continually evolving concept of CSR (Ihlen et al., 2011) can make sustainability reporting difficult and confusing for companies wishing to engage in these practices. The recent introduction of sustainability as a part of business strategies and various reporting standards makes it difficult for companies to document sustainability activities (Rankin et al., 2011).

The decision on behalf of businesses to publish sustainability reports is backed by two primary drivers – a way to engage stakeholders and a way to develop a corporate strategy (Corporate Citizenship, 2012). Issuing a report is increasingly viewed as a way to evolve an organization’s sustainability activities (Corporate Citizenship, 2012). Companies have a wide array of stakeholders that can be target audiences for a sustainability report. Internal audiences;

analysts and financial stakeholders; and customers are the stakeholder groups most commonly the targets of non-financial reports (Corporate Citizenship, 2012).

It can be difficult to quantify the value of CSR to a company. While some research suggests strong CSR practices lead to increased sales, other research indicates it is difficult to identify any relationship at all (Feldman & Vasquez-Parraga, 2013). Regardless of the value CSR has to a company, a growing number of consumers are eager to learn about the CSR practices of companies (Mohr, Webb, & Harris, 2001).

Purpose of the Study and Research Questions

Due to rising input costs, population growth, increased demand from developing economies, regulatory compliance, and stakeholder pressure, issues of sustainability have moved to the forefront for all food system companies (Accenture, 2012). Many companies have responded by publishing sustainability reports; however, the diverse nature of the businesses involved in the agri-food supply chain creates unique challenges and opportunities associated with sustainability (Rankin et al., 2011).

The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. The focus was on understanding how sustainability reports align with the triple bottom line sustainability model, as well as how stakeholders are addressed and the role reputation management has in sustainability reporting.

The following research objectives guided the study:

- **RO1:** Determine the prevalence of sustainability reporting among agri-food supply chain companies;
- **RO2:** Identify, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports;

- **RO3:** Determine if/how sustainability reporting differs among sectors of the agricultural supply chain;
- **RO4:** Assess how companies describe stakeholder engagement in sustainability reports; and
- **RO5:** Explore which aspects of reputation were included in sustainability reports.

Professional Significance of the Study

While many view non-financial reports as an effective strategy that implies companies are balancing social, economic, and environmental factors (Kolk, 2003), there appears to be limited research on the types of information included in sustainability reports, specifically as it relates to companies involved in the agri-food supply chain. Additionally, agribusiness' response to issues of sustainability are typically reactive rather than proactive (Accenture, 2012). This research makes a contribution to the knowledge of sustainability reporting by agri-food supply chain companies. While the concept of corporate social responsibility has been researched for more than 50 years (Ihlen et al., 2011), there is limited research on the use of sustainability reports by agri-food supply chain companies as a function of a company's CSR strategy (Detre & Gunderson, 2011). With consumers increasingly concerned about the sustainability of the agricultural sector (BASF, 2014; Wurth, 2014), this research aims to describe sustainability reporting efforts from companies involved in the agriculture and food supply chain, as well as provide recommendations for businesses not currently highlighting sustainability initiatives in the form of a sustainability report.

Definition of Key Terms

- *Business* — A business is “an industrial, commercial, or professional operation” (“Business,” n.d.). Synonymous terms for this study include agribusiness, company, and organization.
- *Corporate Social Responsibility (CSR)* — The concept that corporations have an obligation to groups in society in addition to stockholders. The obligation should be adopted voluntarily and extend beyond the traditional duty to shareholders and other stakeholder groups (Jones, 1980).
- *Agri-food Supply Chain* — The agri-food supply chain involves all aspects of food production ranging from production to distribution (Ahumada & Villalobos, 2009). For this study, this included any company involved in food production, processing, distribution, or marketing, but excludes companies that are solely involved in the livestock sector. In this study, agriculture and food supply chain is a synonymous term.
- *Non-financial reports* — These are voluntary reports issued by companies that contain financial and non-financial information (Sridhar, 2012). Although these reports vary among companies, areas of social, economic, and environmental consideration are typically addressed (Sridhar, 2012). These reports can be referred to as corporate social responsibility reports, global citizenship reports, or sustainability reports and are typically published on an annual basis. For this study, the terms sustainability reports and non-financial reports are used synonymously.
- *Published* — For this study, a published sustainability report is one that is publically accessible via a company website or other external webpage.

- *Stakeholder* — “Stakeholders are those groups who have a stake in or claim on the firm. Specifically I include suppliers, customers, employees, stockholders, and the local community, as well as management in its role as agent for these groups” (Freeman, 2001, p. 39).
- *Sustainability model* — There are various models of sustainability. For the purpose of this study, the triple bottom line model of sustainability is used and involves social, economic, and environmental facets (Elkington, 1994).

Summary

With the agriculture industry’s considerable use of land, water, and other natural resources, as well as the close connection with consumers, agri-food supply chain companies must manage sustainability (Accenture, 2012; Aigner et al., 2003). Developing non-financial reports to highlight sustainability initiatives is one way for companies to protect an established reputation and brand, as well as help to maintain trust with stakeholders (Detre & Gunderson, 2011). With no law requiring companies to publish sustainability reports and a lack of universal reporting guidelines (Accenture, 2012), there is no consistency among agri-food supply chain companies in terms of those publishing a report and the types of information companies choose to include. The purpose of this study was to understand how sustainability reports align with the triple bottom line sustainability model, as well as how companies address stakeholders in reports, and the role reputation management has in sustainability reporting. This study was designed to answer the following objectives: Determine the prevalence of sustainability reporting among agri-food supply chain companies; Identify, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports; Determine if/how sustainability reporting differs among sectors of the agricultural supply chain; Assess how

companies describe stakeholder engagement in sustainability reports; and Explore which aspects of reputation were included in sustainability reports.

Chapter 2 - Literature Review

The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. The focus was on understanding how sustainability reports align with the triple bottom line model of sustainability, which includes economic, social, and environmental aspects, as well as how stakeholders are addressed, and the role reputation management has in sustainability reporting. In order to better understand corporate social responsibility and sustainability reporting, an extensive literature review was conducted and includes a description of the agri-food supply chain and the history of corporate social responsibility, as well as models and definitions of sustainability. To build a theoretical foundation for this study, literature related to stakeholder theory and reputation management was also explored.

Agriculture and Food Supply Chain

Before exploring literature related to corporate social responsibility (CSR), sustainability, stakeholder theory, and reputation management, it is critical to explore the complex nature of the agriculture and food supply chain. With a rapidly growing global population, the agriculture and food industry is only one of a few industries experiencing continued growth (KPMG International Cooperative, 2013a). On a global scale, the agricultural supply chain is valued at \$5 trillion and encompasses input suppliers, farmers, food manufacturers, and retailers (Carolan, 2012; KPMG International Cooperative, 2013a).

For the commodity-based agriculture sector, the input sector is dominated by 10 to 20 suppliers, which includes seed, fertilizer, chemical, and equipment companies (Carolan, 2012). The agricultural input sector has experienced frequent consolidation in the last several decades. For seed companies, 56% of the global seed market is controlled by four seed companies (Lowry

& Allen, 2014). Additionally, in the 1960s there were eight full-line machinery manufacturers, but recently that number has dropped to only three (Gustafson, 2012).

The farm sector is the largest sector in the agriculture and food supply chain. There are 2.1 million farms in the U.S. and 914.5 million acres of farmland (United States Department of Agriculture, 2012). In 2012, America's 3.2 million farmers sold \$394.6 billion of agricultural products (United States Department of Agriculture, 2012). This sector is very complex as it involves numerous crops and livestock, which each has its own distinct supply chain (KPMG International Cooperative, 2013a).

For centuries farmers grew crops and raised livestock on the same farm; however, starting in the 1970s the two began separating and most farms started specializing in one area or the other (USDA Economic Research Service, 2013). Today, crop farmers focus on producing only a few commodities (USDA Economic Research Service, 2013), while livestock producers typically focus on raising a single livestock specie (USDA Economic Research Service, 2009). Farms and livestock operations have grown larger over time. The shift to larger crop farms has allowed farmers to expand their crop production and specialize in a few commodities (USDA Economic Research Service, 2013), while the growth of livestock operations meant "hog, poultry, and fed cattle production also became more tightly integrated with processors" (USDA Economic Research Service, 2013, p. 15).

While farmers grow a crop from seed to maturity, livestock operations are more intricately linked and tend to focus on a single stage of the production process (USDA Economic Research Service, 2009). Unlike crop farms, livestock farms are "tightly linked to other stages of production and processing through formal contracts" (USDA Economic Research Service, 2009, p. iii). In many cases livestock producers are paid by a contractor to raise livestock (USDA

Economic Research Service, 2009), but this is not typically the case on crop farms. The contractual nature of today's livestock industry has resulted in the stages of livestock production becoming tightly linked together (USDA Economic Research Service, 2009). Unlike crop-based agriculture, increased concentration and vertical integration were the result of growing livestock farms (USDA Economic Research Service, 2009). The tight, vertical integration of the livestock sector makes it difficult to separate farms and processors, so the researcher decided to focus on the commodity-based crop sector of the agriculture and food supply chain.

While both the crop and livestock industries are valuable parts of the agri-food supply chain, there seems to be more emphasis placed on the crop segment in regards to research and development. For example, in 2012 the private sector invested \$9.3 billion in research and development for crops compared to \$1.6 billion for livestock (KPMG International Cooperative, 2013a).

The food manufacturing industry has experienced growth recently as well and is one of the largest manufacturing sectors in the U.S., accounting for more than 10% of total manufacturing shipments (U.S. Department of Commerce, 2008). There are approximately 25,000 food manufacturers in the U.S. (Carolan, 2012) that are responsible for transforming agricultural products for intermediate and final consumption (U.S. Department of Commerce, 2008). "More than one third of the world's top 50 food and beverage processing firms are headquartered in the United States," (*U.S. Department of Commerce Industry Report: Food Manufacturing NAICS 311*, 2008, p. 8). Rising commodity prices, food safety, energy costs, corporate responsibility, and environmental sustainability are some of the biggest challenges facing this industry (U.S. Department of Commerce, 2008).

Just like input suppliers, the retail sector also has experienced consolidation in the past two decades (Carolan, 2012). In the U.S. there are approximately 112,600 food and beverage retailers (Carolan, 2012) . In 2011, “Americas’ 212,000 traditional foodstores sold \$571 billion of retail food and nonfood products” (USDA Economic Research Service, 2014, p. 1). Additionally, in 2013 Wal-Mart Stores, Inc., Kroger, Safeway, and Publix Super Markets were the top four grocery retailers in the United States (USDA Economic Research Service, 2014). With food manufacturers and retailers representing more than 50% of the total market share for the agriculture and food supply chain (KPMG International Cooperative, 2013a), these two industries have a significant impact on the sustainability of the entire agri-food supply chain and can work to manage reputation through corporate social responsibility activities and sustainability reporting.

Corporate Social Responsibility and Sustainability

Corporate social responsibility (CSR) and sustainability are viewed by many researchers to be complementary, overlapping concepts (Carroll & Shabana, 2010; Nidumolu, 2009; Wilson, 2003). Some businesses “treat the need to become sustainable as a corporate social responsibility” (Nidumolu, 2009, p. 2). Corporate social responsibility can be viewed as an umbrella concept that includes sustainability. Over the years, businesses have engaged in CSR in a variety of ways; however, recently businesses are indicating adoption of CSR practices by issuing sustainability reports (Ihlen et al., 2011). While CSR and sustainability are complementary to each other, they remain two distinct concepts that are not dependent upon each other.

Corporate Social Responsibility

Corporate social responsibility can be traced as far back as the 1930s and 1940s. (Carroll, 1999). The United States is recognized as the dominant contributor to CSR literature; however, countries around the world have made significant contributions to helping define this evolving concept (Carroll, 1999). Several authors are noted to have written literature about this topic during that time period, including Chester Barnard, J. M. Clark, and Theodore Krepes (Carroll, 1999). While CSR has a long history, the concept began growing in importance in the 1950s. Frank Abrams, a former executive with Standard Oil Company, suggested in 1951 that as management became more professional, companies could no longer focus solely on profits but needed to also start thinking about employees, customers, and the general public (Carroll & Shabana, 2010). Two years later Howard R. Bowen, who has been credited with launching the start of the modern period of CSR literature, published *Social Responsibilities of the Businessman* (Carroll, 1999; Ihlen et al., 2011). In his book, Bowen referred to CSR as merely social responsibility. Bowen's (1953) initial definition "refers to the obligations of businessmen to pursue those policies, to make those decisions, or to follow those lines of actions which are desirable in terms of the objectives and values of our society" (p. 6). While Bowen is often credited with laying the foundation for CSR, he is only one of many individuals who has contributed to the expansive literature on the topic.

There was significant growth of CSR literature during the 1960s and 1970s, much of which was focused on defining corporate social responsibility (Carroll & Shabana, 2010; Carroll, 1999). Joseph W. McGuire (1963) suggested social responsibility "supposes that the corporation has not only economic and legal obligations but also certain responsibilities to society which extend beyond these obligations" (p. 144). Unlike previous definitions, McGuire's definition expanded beyond strictly economic and legal ideas. Another CSR definition surfaced in 1966

that also expanded beyond solely economic interests. In *Business and its Environment*, social responsibility,

Refers to a person's obligation to consider the effects of his decisions and actions on the whole social system. Businessmen apply social responsibility when they consider the needs and interests of others who may be affected by business actions. In doing so, they look beyond their firm's narrow economic and technical interests. (Davis & Blomstrom, 1966, p. 12)

Throughout the 1960s and 1970s, a plethora of authors continued to contribute to the expanding CSR literature, including Morrell Heald, Harold Johnson, Clarence C. Walton, and George Steiner. Beginning in the 1980s, the focus began to shift from defining CSR to adapting it into numerous concepts, theories, and models (Carroll, 1999), which include business ethics, stakeholder theory, and corporate citizenship (Carroll & Shabana, 2010). By the 1990s, there was expansive literature on CSR and in the 1990s and 2000s the quest for CSR accelerated on a global level (Carroll & Shabana, 2010; Carroll, 1999).

Although the concept of corporate social responsibility was introduced more than 50 years ago, the subject continues to grow in prominence (Carroll & Shabana, 2010; Ihlen et al., 2011; Moon, 2007; Sen & Bhattacharya, 2001). A Google search in April 2014 revealed 117 million CSR results compared to 81.4 million in April 2006 (Moon, 2007). This significant increase in information over a relatively short timeframe supports the notion that CSR is growing in importance. In its infancy, CSR was considered primarily a domestic business issue; however, CSR initiatives are occurring in nearly all developed nations, as well as expanding to emerging nations (Carroll & Shabana, 2010; Junior et al., 2013).

One reason for the increased discussions about the relationship between business and society is requests from consumers (Ihlen et al., 2011; Moon, 2007). Specifically, consumers are asking companies to “engage in stakeholder dialogue and implement transparency” (Ihlen et al., 2011, p. 4). Consumers continue to challenge businesses to look beyond profit-maximization and also consider societal goals (Carroll, 1991, 1999; Wilson, 2003). The Committee for Economic Development (CED) also realized the relationship between business and society was changing (Committee for Economic Development, 1971). The CED recognized, in 1971, that,

Business is being asked to assume broader responsibilities to society than ever before and to serve a wider range of human values. Business enterprises, in effect, are being asked to contribute more to the quality of American life than just supplying quantities of goods and services. Inasmuch as business exists to serve society, its future will depend on the quality of management’s response to the changing expectations of the public. (Committee for Economic Development, 1971, p. 16)

A growing number of consumers are interested in learning about companies’ CSR practices (Mohr et al., 2001). Companies have recognized the increased attention towards CSR and are increasing commitment to CSR practices in an attempt to influence consumer perceptions of the company and to influence purchasing decisions (Becker-Olsen, Cudmore, & Hill, 2006; Du, Bhattacharya, & Sen, 2007). However, despite the increased interest, some research suggests that even though consumers view CSR as important, many do not rely on CSR to make purchasing decisions (Mohr et al., 2001). Specifically, “consumers’ beliefs about CSR (i.e., that companies should be socially responsible, that social responsibility ultimately leads to higher profitability for companies) are often inconsistent with their behaviors (i.e., not purchasing based on CSR)” (Mohr et al., 2001, p. 69). Despite a growing interest in CSR,

consumers lack knowledge of CSR because of its complex nature (Mohr et al., 2001). Research suggests that as consumers become more knowledgeable about CSR, their responsiveness to CSR practices may increase (Mohr et al., 2001).

Although some research suggests there is no relationship between CSR and purchasing intention, other research indicates a positive relationship between the two (Feldman & Vasquez-Parraga, 2013). Consumer CSR beliefs are believed to be formed based on consumer awareness of a company's CSR activities and consumer beliefs regarding a company's motivation for engaging in CSR practices (Du et al., 2007). The benefit to companies engaging in CSR activities extends beyond increased sales. In fact, it "is less a short-term sales generating mechanism as it is one that deepens customer relationships over time, creating brand advocates or champions" (Du et al., 2007, p. 237).

While consumers are one reason that businesses continue to engage in CSR, Moon (2007) identified four contemporary drivers for CSR that include market, social, government and globalization. Market drivers include consumers, employees, business suppliers, investors, and customers; and social drivers include NGO pressure, media attention, general social expectations, and business associations (Moon, 2007). With governments in many countries across the globe taking an interest in CSR and businesses spanning across country borders, government and globalization are also said to be drivers for CSR (Moon, 2007). Activists and activist organizations are also known for pressuring businesses to engage in CSR (Porter & Kramer, 2006). While CSR continues to grow in importance (Carroll & Shabana, 2010; Ihlen et al., 2011; Moon, 2007; Sen & Bhattacharya, 2001), sustainability reporting is becoming a more prevalent CSR activity used by companies to engage with stakeholders (Ihlen et al., 2011).

Sustainability

The word “sustainable” has been used for hundreds of years; however, the meaning of the word has evolved over time. In its infancy the word was used to describe a type of forestry practiced by the Swiss and Germans that was used to ensure forests remained productive systems for the long term (Kuhlman & Farrington, 2010; Sutton, 2004). The concepts of sustainability and sustainable development were introduced fewer than 30 years ago when the General Assembly of the United Nations asked the World Commission on Environment and Development (WCED) to formulate a global agenda for change (World Commission on Environment and Development [WCED], 1987). In its October 1987 *Brundtland Report*, the commission defined sustainable development as seeking “to meet the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 8). In that same report, which is often acknowledged for giving sustainability its widespread recognition (Kuhlman & Farrington, 2010), the WCED acknowledged three core principles of sustainability: environmental integrity, social justice, and economic prosperity (Rankin & Gray, 2011; WCED, 1987).

The WCED acknowledged that a growing population would put a strain on the earth’s environmental resources, so respect for the ecosystem was emphasized in the report. Environmental integrity suggests that sustainable development should not compromise the productivity of the natural environment (WCED, 1987). Social justice, as described by WCED, is focused on the role society plays in meeting human needs; this principle suggests that human needs are met by increasing production capabilities and providing equal opportunities for all citizens (WCED, 1987). The social aspect of sustainable development, as envisioned by WCED (1987), also requires that people have the opportunity to accomplish their goals for a better life.

According to the Commission, the principles of environmental integrity and economic

prosperity are delicately linked together. In essence, economic development cannot occur if the natural resources are not cared for (WCED, 1987). The *Brundtland Report* also recognized that the development of technology and growth of institutions also play a role in sustainable development,

Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations. (WCED, 1987, p. 46)

Over the years, many definitions and models of sustainability have been introduced. While each definition is unique, to some degree they all typically include the same three core principles; environmental integrity, social justice, and economic prosperity. In its Agenda for Development, the United Nations stated “economic development, social development, and environmental protection are interdependent and mutually reinforcing components of sustainable development” (United Nations, 1997, p. 11).

One popular model of sustainability is the triple bottom line (TBL) concept introduced by John Elkington (Elkington, 1994). The TBL model gained popularity in the 1990s (Elkington, 2004), and includes three areas: “economic prosperity, environmental quality, and social justice” (*SAGE Brief Guides to Corporate Social Responsibility*, 2012, p. 207). This concept suggests care for the environment and concern for people should be added to profit, the traditional bottom line of companies (Elkington, 2004; Kuhlman & Farrington, 2010).

In the TBL model, economic prosperity is not solely the financial success of a company, but also considers investments, dividends, and the company’s economic impact on stakeholders (*SAGE Brief Guide to Corporate Social Responsibility*, 2012). The environmental quality aspect

is focused on the impact of the company on the natural resources of the planet (*SAGE Brief Guide to Corporate Social Responsibility*, 2012). Finally, the third leg of the TBL model, social justice, is concerned with the human and social aspects of a company, including the knowledge and skills of employees (*SAGE Brief Guide to Corporate Social Responsibility*, 2012). Whatever the definition or model of sustainability, there is one resounding goal of maintaining something at a specific level and avoiding decline (Voinov, 2008).

Starting in the 1990s, stakeholders began asking businesses to report activities engaged in that avoid human rights violations and minimize pollution, among other things (Kolk, 2003). As a result, many businesses began publishing non-financial, sustainability reports (Kolk, 2003). The number of businesses issuing such reports has dramatically increased over the years (Fifka & Drabble, 2012; International, 2011; Junior et al., 2013; Kolk, 2003). As recently as 2011, nearly 80% of Global Fortune 250 companies issued non-financial reports; compared to 37% in 1998 and 50% in 2003 (Ihlen et al., 2011). Many of the initial non-financial reports focused strictly on the environment, but an increasing number of reports are now complete sustainability reports that focus on social, economic, and environmental aspects (Kolk, 2003; Sridhar, 2012).

While there has been a significant increase in the number of businesses issuing sustainability reports (KPMG International Cooperative, 2013b), there is no law requiring businesses to highlight sustainability efforts (Kolk, 2008). In addition to there being no legal requirement, there is a lack of universal reporting guidelines to aid businesses desiring to issue such reports (Golob & Bartlett, 2007; KPMG International Cooperative, 2013b). Some reporting standards, such as the Global Reporting Initiative (GRI), Carbon Disclosure Project, and Dow Jones Sustainability Index (DJSI), have been introduced in recent years to guide businesses

publishing sustainability initiatives (Accenture, 2012; Detre & Gunderson, 2011; Golob & Bartlett, 2007).

The Global Reporting Initiative (GRI) reporting framework is widely used by companies around the world. Specifically, 78% of companies that issue reports worldwide refer to the GRI guidelines directly in the company's sustainability report (KPMG International Cooperative, 2013b). The GRI, founded in Boston in 1997, aids organizations and businesses in developing sustainability reports and contributing to sustainable development ("What is GRI?," 2013). The reporting framework GRI developed includes both metrics and measures for companies to "measure and report their sustainability-related impacts and performance" ("What is GRI?," 2013, para. 4); the framework has been revised three times since the first version was launched in 2000 ("What is GRI," 2013). The GRI expanded the foundations of the Triple Bottom Line (Elkington, 2004) and its guidelines include economic, environmental, and social sections ("What is GRI?," 2013).

Combined with no legal requirement and limited reporting guidelines is the broadly defined term sustainability reporting. The broad definition includes "ethics, environmental, and/or social issues (sometimes this is also labeled 'corporate social responsibility' or 'triple bottom line' (people, planet, profit) reporting)" (Kolk, 2008, p. 2). The lack of legal requirement, limited reporting guidelines, and broad definition can make it difficult and confusing for companies desiring to highlight sustainability initiatives in the form of a sustainability report.

Despite the challenges companies may face and the cost companies may endure to implement sustainability reporting, a growing number of companies are publishing such reports (Fifka & Drabble, 2012; Junior et al., 2013; Kolk, 2003). The growing demand for transparency about corporate behavior (Kolk, 2008) from consumers, the media, and others (Fifka & Drabble,

2012) is one reason for the increase in sustainability reporting. The introduction of reporting standards, such as the GRI and DJSI, also has attributed to the increase, as these reporting standards aid businesses in determining what information to include in a report (Fifka & Drabble, 2012). Another driving force behind the increase in reporting is the opportunity for businesses to increase risk management, reduce costs, and increase revenue (Accenture, 2012). Sustainability reports also aid in protecting the brand and reputation of a business (Detre & Gunderson, 2011; Ihlen et al., 2011). Other reasons for engaging in sustainability include competitive advantage, industry trends, CEO/board commitment, demands from investors, top line growth, shareholder demand, and access to capital (Signitzer & Prexl, 2007).

The agricultural sector is not exempt from an increased focus on sustainability. In fact, the opposite is true. Due to its significant use of land, water, and other resources, sustainability is becoming increasingly important in agriculture (Aigner et al., 2003; Rankin et al., 2011). The paradigm is shifting away from focusing on financial gain to embracing sustainability, which poses various challenges for agribusinesses (Heller & Keoleian, 2003). Some challenges facing the agricultural sector include “ensuring a secure food supply, addressing the environmental impacts of agriculture, practicing fair labor standards, and providing safe and healthy products” (Rankin & Gray, 2011, p. 2). To help meet the challenges facing the agricultural sector, sustainability indicators have been created specifically to measure agricultural sustainability; these range from soil quality to environmental indicators (Heller & Keoleian, 2003). Agribusinesses also face considerable pressure to pursue sustainability from consumers and from within the supply chain (Rankin et al., 2011).

In order to become more sustainable, companies need to meet the expectations of specific stakeholders (*SAGE Brief Guide to Corporate Social Responsibility*, 2012). With various

stakeholders pressuring companies to be more sustainable (Rankin et al., 2011), CSR activities, such as sustainability reporting, can help manage relationships with diverse stakeholder groups (Roberts, 1992). Understanding characteristics of a company's stakeholders can affect specific sustainability initiatives (Rankin et al., 2011). Increased communication with stakeholders aids companies in enhancing involvement in sustainability activities (Mirvis & Googins, 2006).

Stakeholder Theory

For centuries the primary goal of a business has been to pursue the interests of stockholders, providing maximum financial return (Carroll, 1991; Freeman, 2001). Stockholders are identified as “holders of the firm's equity” (Freeman & Reed, 1983, p. 88). The idea behind managerial capitalism was that a business should be managed in the best interest of stockholders and for their benefit (Freeman, 2001). However, following social movements such as civil rights, consumerism, and environmentalism, the role of business in society was questioned (Freeman & Reed, 1983). Scholars and the general public alike began questioning whose interests businesses serve (Freeman, 2001; Wheeler, 2003). Over time, businesses began to operate in the best interest of both stockholders and stakeholders.

Stakeholders “have a stake or claim on the firm” (Freeman, 2001, p. 39) and include suppliers, customers, employees, and others. The creation of governmental agencies, such as the Environmental Protection Agency and Consumer Product Safety Commission, in the 1970s was evidence of a shift in national public policy that was beginning to recognize consumers and others as significant stakeholders (Carroll, 1991). This forced businesses to balance the commitment to stockholders, as well as the growing groups of stakeholders.

Freeman and Reid (1983) identified two definitions of stakeholder. Narrowly defined, a stakeholder includes individuals or groups who are vital to the survival and success of the

business. Broadly defined, a stakeholder includes an individual or group who can affect or is affected by the business. While there are multiple groups that combine to create a business' stakeholders, the stakeholder theory does not give preference to any specific stakeholder group (Freeman, 2001). It is the role of management to keep its relationships with stakeholders in balance; if the relationships are imbalanced then the business' survival can be jeopardized (Freeman, 2001).

The first time the term stakeholder appeared in management literature was in a 1963 internal memorandum at the Stanford Research Institute (SRI) (Freeman, 1984). At that time stakeholder was defined as groups whose support was necessary for the organization to continue to exist. Researchers at SRI suggested that executives needed to understand the needs and concerns of stakeholders in order to formulate corporate objectives that would receive the support necessary for the firm to survive. Over time the original work on stakeholder theory separated into four additional areas: corporate planning, systems theory, corporate social responsibility, and organization theory (Freeman, 1984). Each of these disciplines further developed the stakeholder concept.

While the first use of the term can be traced to 1963, the widespread launch of stakeholder theory did not occur until nearly 20 years later. The publication of *Strategic Management: A Stakeholder Approach* by Freeman (1984) is often viewed as a landmark moment in the development of the stakeholder concept (Donaldson & Preston, 1995). In the first 10 years following the book's publishing, nearly one dozen books and hundreds of articles emphasizing the concept had already appeared (Donaldson & Preston, 1995).

Stakeholder theory originally began as management practices used by managers before being developed into a scholarly theory. Freeman (1984) recognized that businesses were

experiencing turbulence and management could no longer solely focus on taking products to market or concentrate on efficiency; instead Freeman called for new concepts “which reorient our way of looking at the world to encompass present and future changes” (p. 7). As a result, Freeman (1984) suggested a framework different than the managerial view of the firm that was the predominant framework at that time (Figure 2.1).

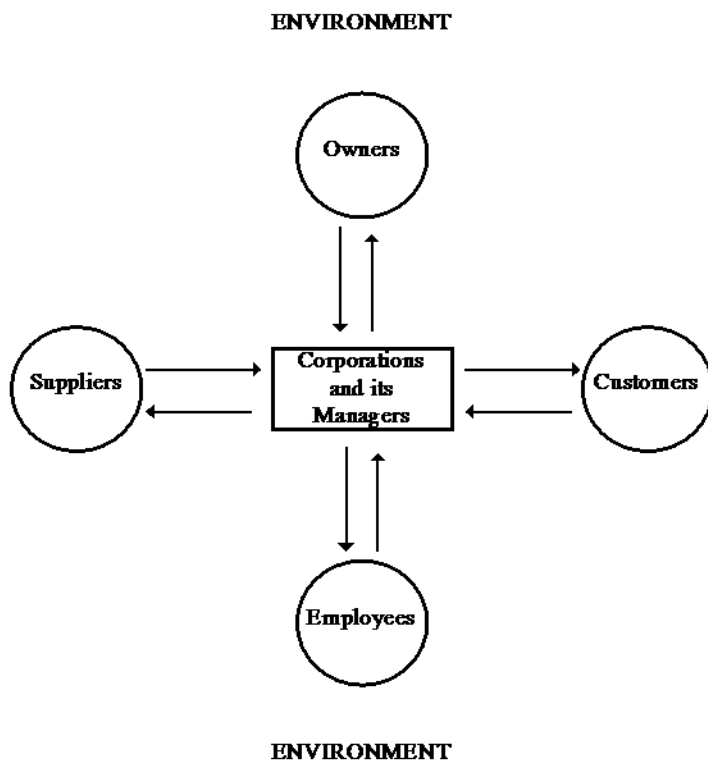


Figure 2.1 Managerial view of the firm (Freeman, 1984).

Freeman (1984) believed the turbulence managers were experiencing was the result of internal and external change. Internal change was the changes in relationships illustrated in the managerial view. These internal changes, Freeman suggested, would require management to frequently reassess the business objectives and policies in light of demands by groups including stockholders, customers, employees, and suppliers (Freeman, 1984). External change are changes in the environment that affect business’ ability to address internal change. Some external

changes Freeman identified at that time included regulatory changes, changes in demographics, inflation, and interest rates (Freeman, 1984).

Freeman believed the traditional managerial view of the firm lacked a cohesive way of understanding present and future changes. As a result, he suggested the stakeholder concept, which considered all groups that could affect, or be affected by, the achievement of the business' purpose (1984). Figure 2.2 illustrates Freeman's stakeholder view of the firm.

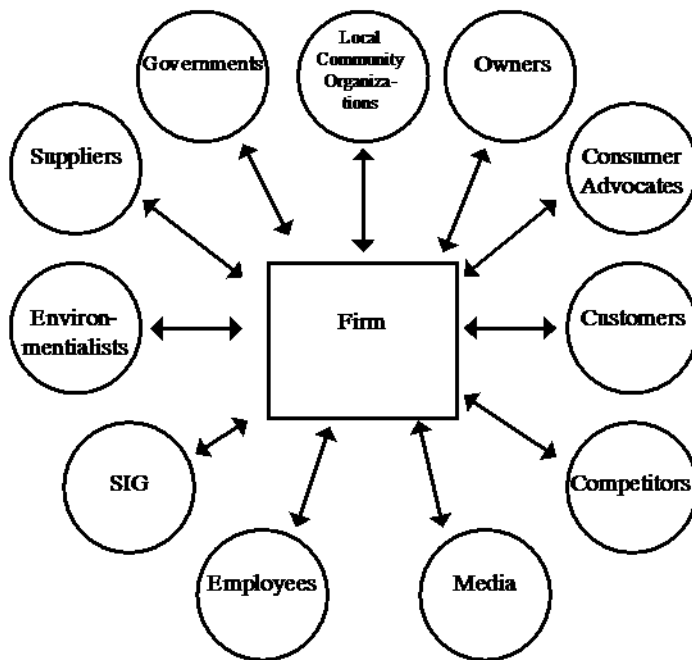


Figure 2.2 Freeman's stakeholder view of the firm (Freeman, 1984).

There are two questions at the core of stakeholder theory (Freeman, Wicks, & Parmar, 2004; Freeman, 1994). The first asks about the firm's purpose, encouraging managers to identify what brings stakeholders together. The second asks about the responsibilities management has to stakeholders, pushing managers to describe the types of relationships they want to create with stakeholders (Freeman et al., 2004; Freeman, 1994).

As mentioned earlier, Freeman (1984) credited the discipline of corporate social responsibility with helping to further expand stakeholder theory research. Additional research has suggested that corporate social responsibility activities can be useful to develop and maintain acceptable relationships with stakeholders (Roberts, 1992). Using social responsibility disclosure to develop a reputation of being socially responsible has been viewed as a way to manage stakeholder relationships (Roberts, 1992; Ullmann, 1985) and stakeholder perceptions of the firm's reputation.

Reputation Management

Businesses are constantly competing against each other to improve profitability, as well as to gain the respect and trust of stakeholders (Fombrun & Shanley, 1990; Fombrun, 1996). This competition amongst rivals has resulted in heightened visibility for businesses, which makes businesses much more likely to withstand scrutiny from the general public (Fombrun, 1996), creating the need for a strong reputation paramount to a business' success.

Reputation is how stakeholders, such as employees, investors, customers, and communities, view a business (Coombs, 2015). A business' reputation is built as stakeholders interact with the business, both directly and indirectly; positive interactions typically result in favorable reputations while negative interactions tend to result in unfavorable reputations (Coombs, 2015). A favorable reputation will produce tangible benefits for a business such as “premium prices for products, lower costs of capital and labor, improved loyalty from employees, greater latitude in decision making, and a cushion of goodwill when crises hit” (Fombrun, 1996, p. 57).

The reputation of a business is built over time, based on stakeholder interpretations of business actions; a business' reputation is at risk in ordinary, everyday stakeholder interactions

(Fombrun, Gardberg, & Barnett, 2000). Stakeholders build reputations based on information available about a business' activities, the media, and other sources (Fombrun & Shanley, 1990); however, once formed, a reputation is resistant to change (Fombrun et al., 2000). In times of crisis a business' reputation can be an asset or a detriment. A negative reputation prior to a crisis can make it more challenging for businesses to manage the crisis. On the other hand, having a positive reputation prior to a crisis can act as a resource that aids businesses during crisis (Coombs, 2015). Maintaining a positive reputation is an asset for businesses that produces tangible benefits (Fombrun, 1996).

Some businesses may be hesitant to invest the time and resources in building or strengthening reputations due to the challenge in quantifying gains as a result of a consistent, favorable reputation (Fombrun et al., 2000). However, increased concern from consumers on the social and environmental impacts of business and increasing competition from the global economy are the primary reasons for the recent focus on active reputation management (Sandberg, 2012; Sridhar, 2012). Reputation management is used by businesses to influence stakeholder views of the business (Coombs, 2015). Corporate social responsibility is a strategic tool used at an increasing rate to manage reputational risks (Fombrun et al., 2000). In recent years, CSR has been viewed as a primary driver and an integral part of reputation (Coombs, 2015); reputation and responsibility have also been commonly referred to as "two sides of the same coin" (Hillenbrand & Money, 2007, p. 274).

Since reputation is based on stakeholder evaluations (Coombs, 2015), it can be difficult to determine the exact reputation of a company (Bebbington, Larrinaga, & Moneva, 2008). Reputation ranking studies are one way that attempt to describe the reputation of a company (Bebbington et al., 2008). One challenge associated with these studies is that each ranking study

focuses on different characteristics of reputation (Bebbington et al., 2008). However, research by Bebbington et al. (2008) reveals the five elements of reputation commonly focused on in reputation ranking studies: “financial performance; quality of management; social and environmental responsibility performance; employee quality; and the quality of goods/services provided,” (p. 340). It is suggested that individuals use these elements when evaluating reputation (Bebbington et al., 2008).

There are various CSR activities practiced by businesses to develop or enhance reputation; examples include cause marketing and corporate philanthropy (Carroll & Shabana, 2010). One of the most popular CSR activities businesses use to manage reputation is by publishing non-financial reports (Bebbington et al., 2008). Businesses publish non-financial reports to both enhance reputation and manage reputation risks (Bebbington et al., 2008).

The practice of issuing non-financial reports has grown in popularity since the launch of the Global Reporting Initiative in 1997 (Carroll & Shabana, 2010). Businesses have started to use sustainability reports to manage reputations, legitimize business actions, and create dialogue between a business and its consumers (Michelon, 2011; Sridhar, 2012). The increased focus on reputation management has made businesses more aware of the need to manage environmental, social, and ethical risks, as well as the need to demonstrate these practices externally; as a result, an increasing number of businesses issue sustainability reports (Friedman & Miles, 2001).

Summary

Corporate social responsibility, sustainability, stakeholder theory, and reputation management are all interwoven concepts. In recent years stakeholders have become more concerned with the sustainability of business activities and businesses have continued to realize the importance of maintaining a positive reputation with stakeholder groups. In an effort to

manage reputations with stakeholders, an increasing number of businesses are choosing to engage in CSR by publishing non-financial reports. While some businesses remain reluctant to practice CSR and are unsure of the benefits to the business, research reveals that engaging in CSR may benefit businesses in the form of increased profit and enhanced reputation.

The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. The focus of this study was on understanding how non-financial reports align with the triple bottom line sustainability model, how stakeholders are addressed in reports published by companies, and what role reputation management has in sustainability reporting. The review of literature showed that corporate social responsibility, sustainability, stakeholder theory, and reputation management are related concepts. While the focus of this study was on sustainability reports, research has shown that these non-financial reports also frequently include mentions of stakeholders and the business' reputation, which is why stakeholder theory and reputation management served as the guiding frameworks for this study. In order to address the research objectives of this study, a quantitative content analysis was used to analyze sustainability reports from companies along the agricultural supply chain.

Chapter 3 - Methodology

Study Design

The review of literature shows the interconnectedness of corporate social responsibility, sustainability, stakeholder theory, and reputation management. While these concepts are well understood when applied to general businesses, their application to the agricultural sector has not been explored as deeply. The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. The focus was on understanding how non-financial reports align with the triple bottom line sustainability model, how stakeholders are addressed, and the role reputation management has in sustainability reporting. The information was gathered through content analysis of existing sustainability reports from companies along the agricultural supply chain.

Content Analysis

This study was a quantitative content analysis to gain a better understanding of the information in sustainability reports published by companies involved in the agri-food supply chain. Content analysis is “a research technique for the objective, systematic, and quantitative description of the manifest content of communication” (Berelson, 1952, p. 18). Since content analysis is frequently used when studying human communications (Babbie, 2013), it is viewed as the appropriate method for this study. Content analysis is frequently used to study communications, including speeches, books, and web pages, and enables researchers to answer the following questions: “who says what, to whom, why, how, and with what effect?” (Babbie, 2013, p. 333).

Content analysis is an example of unobtrusive research, which allows researchers to examine content after it has been created and infer about how it was produced without affecting

its production (Babbie, 2013; Krippendorf, 2004; Riffe, Lacy, & Fico, 2005). A quantitative content analysis is

The systematic and replicable examination of symbols of communication, which have been assigned numeric values according to valid measurement rules and the analysis of relationships involving those values using statistical methods, to describe the communication, draw inferences about its meaning, or infer from the communication to its context, both of production and consumption. (Riffe et al., 2005, p. 25)

Content analysis is a valuable research methodology because it can be used to examine written, verbal, and visual communication (Riffe et al., 2005). In addition, content analysis has been a frequently used method to analyze sustainability reports (Fifka & Drabble, 2012; Michelon, 2011; Moreno & Capriotti, 2009; Morhardt, Baird, & Freeman, 2002). For this study, a content analysis of sustainability reports from companies along the agricultural supply chain was conducted.

This study followed Wimmer and Dominick's (1983) ten steps for conducting a content analysis. These steps include

1. Formulate the research question(s);
2. Identify the population;
3. Select a sample from the population;
4. Define the unit of analysis;
5. Establish the categories to be analyzed;
6. Construct a system of quantification;
7. Determine reliability;

8. Code remaining content;
9. Analyze data;
10. Identify implications and applications.

The following research objectives were developed from the review of literature and guided this study:

- **RO1:** Determine the prevalence of sustainability reporting among agri-food supply chain companies;
- **RO2:** Identify, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports
- **RO3:** Determine if/how sustainability reporting differs among sectors of the agricultural supply chain;
- **RO4:** Assess how companies describe stakeholder engagement in sustainability reports; and
- **RO5:** Explore which aspects of reputation were included in sustainability reports.

Population and Sampling

The goal of this study was to gain an accurate representation of commodity-based agri-food supply chain companies and to include companies at every point of the supply chain. The agricultural supply chain is comprised of more than 2.3 million companies that are divided among four main sectors: input suppliers; farms; processors and manufacturers; and retailers (Carolan, 2012). There are approximately 20 dominant input suppliers in the commodity-based agriculture supply chain including seed, fertilizer, chemical, and machinery companies (Carolan, 2012); 2.1 million farms (Vilsack & Clark, 2012); 25,000 food manufacturers; and 112,600

retailers in the U.S. (Carolan, 2012). These U.S. companies are responsible for helping grow, process, and distribute the food needed to feed more than 300 million U.S. consumers (Carolan, 2012).

Considering the vast amount of companies in the agricultural supply chain, a stratified random sampling method was appropriate for this study because it gave each company an equal chance for inclusion in the study (Wimmer & Dominick, 1983). Due to the variability among crop and livestock sectors of the agricultural industry and the tight, vertical integration of the livestock sector (USDA Economic Research Service, 2009), this study only included businesses and input companies specifically related to crop-based businesses. Therefore, animal health, feed companies, livestock operations, and animal product-based manufacturers were excluded from this study.

The farm sector is the largest of the four sectors with 2.1 million farms (Carolan, 2012; United States Department of Agriculture, 2012); however, initial attempts to identify reports from farms revealed that few farms publish sustainability reports. Since there is no database that lists the farms with reports, extensive Google searches were used to identify reports that could be used in this study. Following the extensive search, only four farm-level reports were identified: two livestock operations and two crop farms. The reports from livestock operations were excluded because this study was focused on crop-based agriculture. Thus, based on the parameters of this study, only the two crop farms were eligible for inclusion in the study. It was then decided not to include the farm sector in this study due to the underrepresentation of the segment.

To determine the population size for each sector, the researcher determined the overall market share for each sector based on total sales. Approximate total sales for the sectors are \$400

billion (input suppliers), \$4.5 trillion (manufacturers and traders), and \$5.4 trillion (retailers); for total sales of the agricultural supply chain of \$10.3 trillion (KPMG International Cooperative, 2013a). Based on these figures, the researcher was able to determine the share of each sector to be 4% for input suppliers, 44% for manufacturers, and 52% for retailers. The percentage of sustainability reports analyzed for each sector corresponded with its respective total share.

To determine the companies from which a random sample was selected, the researcher identified a list of the top companies for each sector. A list of the Top 100 U.S. food manufacturers (Appendix A), based on 2013 food sales, (“Food Processing’s Top 100,” 2014) and a list of the Top 75 U.S. food retailers (Appendix B), based on sales, (“2014 Top 75: The clickable list,” 2014) were obtained. Forty-three companies were removed from the list of manufacturers because they were manufacturers of livestock-based products; therefore, the total population of manufacturers was adjusted to 57 companies. The researcher was unable to find a comprehensive list of the top agricultural input suppliers; however, a report by the United States Department of Agriculture’s (USDA) Economic Research Service included lists of the leading seed companies, leading crop protection firms, and the top farm machinery companies (Fuglie et al., 2011). Although agricultural input companies include animal health and nutrition companies (KPMG International Cooperative, 2013a), companies in these areas are used only in livestock entities, not crop-based entities and were therefore excluded from this study. Also, while the manufacturer and retailer lists only included U.S. companies, the agricultural input suppliers list included international companies. Due to the global nature of agricultural input companies (Lowry & Allen, 2014), non-U.S. companies were not excluded. The list of agricultural input suppliers included 50 companies. In addition, while only 50 companies made up the total population for input suppliers, compared to 75 and 57 companies for retailers and manufacturers,

respectively, consolidation has resulted in fewer agricultural input companies. At present, 10 companies account for 73% of the world’s commercial seed sales (Lowry & Allen, 2014).

Machinery manufacturers have also experienced consolidation – only three full-line manufacturers exist today, compared to eight in the 1960s (Gustafson, 2012). Table 3.1 indicates how the supply chain contribution for each industry sector was used to stratify the study sample.

Table 3.1
Using supply chain contribution for stratified sampling

	Industry Sector		
	Input Suppliers	Food Manufacturers	Retailers*
Total companies identified	50	57	75
% contribution to supply chain	4.0	44.0	52.0
Total sample size	2	25	39
Companies with reports	2	8	6

* Limiting sector for sampling, used to establish upper-bounding limit for percentage sampling of other segments

Once the list of companies for each sector was identified, a random number generator was used to put the lists of companies in a random order, giving each company an equal chance of inclusion in the study sample (Wimmer & Dominick, 1983). Once the companies in each sector were randomly ordered, a sample of companies was selected using the percentages described previously. The sample size for each sector was found by multiplying the percent market share and the total number of companies listed for each sector. For example, the input supplier sector controls 4% of the market share for the agri-food supply chain and a list of 50 companies was available for sampling. The sampling method thus suggests that 2 companies representing input suppliers should be included in the study sample.

After the study sample was selected, the researcher conducted a series of Google searches to locate non-financial reports for each company in the study sample. Companies that did not publish a report were not excluded from the study because these companies were used to explain the prevalence of sustainability reporting among companies in the agricultural supply chain.

Table 3.2 indicates all companies included in the study sample.

Table 3.2

Companies in study sample

Company (N = 66)	Industry Segment
Monsanto Co.	Input Supplier
Deere & Company	Input Supplier
Lancaster Colony Corporation	Manufacturer
Weston Foods	Manufacturer
Flower Foods, Inc.	Manufacturer
Gilster-Mary Lee Corporation	Manufacturer
Pepsico, Inc.	Manufacturer
Seneca Foods, Inc.	Manufacturer
TreeHouse Foods, Inc.	Manufacturer
Pinnacle Foods Group LLC	Manufacturer
AdvancePierre Foods	Manufacturer
Diamond Foods, Inc.	Manufacturer
Beam, Inc.	Manufacturer
Rich Products Corp.	Manufacturer
Dole Foods Co., Inc.	Manufacturer
MOM Brands Co.	Manufacturer
Boston Beer Co.	Manufacturer
American Crystal Sugar Co.	Manufacturer
Kellogg Co.	Manufacturer
J.M. Smucker Co.	Manufacturer
Coca-Cola Co.	Manufacturer

Mars, Inc.	Manufacturer
Hearthside Food Solutions LLC	Manufacturer
Golden State Foods	Manufacturer
Post Foods	Manufacturer
Mondelez International	Manufacturer
Campbell Soup Co.	Manufacturer
A&P	Retailer
Safeway Company	Retailer
Giant Eagle	Retailer
Schnuck Markets	Retailer
Village Super Market, Inc.	Retailer
Overwaitea Food Group	Retailer
Grocers Supply Co.	Retailer
Weis Markets, Inc.	Retailer
Bashas	Retailer
Fareway Stores, Inc.	Retailer
Stater Bros. Markets	Retailer
Ingles Markets, Inc.	Retailer
Coborn's, Inc.	Retailer
Trader Joe's Co.	Retailer
7-Eleven	Retailer
Big Y Foods, Inc.	Retailer
Unified Grocers	Retailer
SuperValu, Inc.	Retailer
SpartanNash	Retailer
Smart & Final	Retailer
Saker ShopRites Inc.	Retailer
Dollar General Corp.	Retailer
Aldi	Retailer
Superior Grocers	Retailer
The Fresh Market	Retailer

Demoulas Market Basket	Retailer
Bodega Latina	Retailer
Delhaize America Company	Retailer
Costco Wholesale Corp.	Retailer
Publix Super Markets, Inc.	Retailer
Whole Foods Market, Inc.	Retailer
Hy-Vee	Retailer
WinCo Foods Inc.	Retailer
Key Food	Retailer
Metro	Retailer
K-VA-T Food City	Retailer
Raley's Supermarkets	Retailer
Price Chopper Supermarkets	Retailer
Kroger	Retailer

Data Collection

The codebook used to analyze individual reports was the same as that used to analyze reports in a 2002 study conducted by Morhardt, Baird, and Freeman (Appendix C). While reading articles for the literature review, the researcher found the scoring system used in the study and requested a copy of the codebook from Dr. J. Emil Morhardt. The study analyzed environmental and sustainability reports using two guidelines: the Global Reporting Initiative (GRI) 2000 guidelines and ISO 14031 standard (Morhardt et al., 2002). The researchers in that study converted the reporting guidelines into two individual, comprehensive scoring systems (Morhardt et al., 2002). Since the GRI reporting framework is used by companies around the globe (“What is GRI?,” 2013), the GRI scoring system developed by Morhardt et al. (2002) was used to analyze reports in this study.

The scoring system developed by Morhardt et al. (2002) is comprised of 139 topics that came directly from the 2000 GRI guidelines. The scoring system is as follows: “0, not mentioned; 1, anecdotal or briefly mentioned; 2, more detail, but characterizing only selected facilities or using only self-comparison metrics; 3, company-wide absolute or relative metrics that could be compared with other companies” (Morhardt et al., 2002, p. 221). The nature of the GRI topic list makes some topics on the scorecard worth up to four points, while others are only worth one point (Morhardt et al., 2002). Morhardt et al., (2002) determined that it was reasonable to assign some indicators more points than others due to the nature of the topics addressed in the GRI guidelines.

The scorecard is divided into four categories: general organization features, environmental performance, economic performance, and social performance; individual topics are summed to give a score for each category and the sum of the individual category scores result in a company’s total sustainability score (Morhardt et al., 2002). The total points possible on the scorecard is 429 (Morhardt et al., 2002). The maximum points for each sector is as follows: 134 total points for general indicators, environmental indicators are worth a total of 115 points, 69 points for economic indicators, and 111 points for social indicators (Morhardt et al., 2002).

The general organization category includes 43 indicators related to the CEO statement; profile of the organization; executive summary and key indicators; vision and strategy; and policies, organization, and management. Examples of specific general organization indicators include summary of report contents, successes and failures, precautionary principle, and internal programs and procedures. Specific examples of the 34 environmental performance indicators include fuel use, hazardous chemicals/materials use, emissions to air, and impacts on protected areas. There are nine indicators of economic performance; examples include research and

development investments, investments in human capital, debt/equity ratio, and outsourced costs of goods and services. There are 48 indicators of social performance including ranking of organization as an employer, education of workforce, indigenous representation, and customer satisfaction levels.

Since the first GRI guidelines were introduced in 2000 the guidelines have been adjusted four times; most recently in 2013 (Global Reporting Initiative, 2013). The GRI 2000 guidelines included 139 indicators across four component areas (Morhardt et al., 2002). The latest GRI guidelines included 149 indicators across the same four components (Global Reporting Initiative, 2013).

Although the GRI guidelines have been updated since the initial scoring system was developed, the original scoring system was used in this study to provide consistency of scoring among reports analyzed using the scorecard instrument. Additionally, use of the original scorecard enabled the researcher to make some comparisons among reports analyzed in this study and the reports analyzed by Morhardt et al., (2002). A panel of experts, an agricultural economics professor whose research interest includes agricultural sustainability and an agricultural communications professor that specializes in risk and crisis communication, reviewed the scoring system prior to the collection of any data for this study.

Stakeholder Theory

Since it can be difficult to assess stakeholder interactions quantitatively, the researcher identified scorecard indicators directly related to stakeholders to analyze the fourth objective of this study. The four scorecard indicators are major stakeholders, basis for identifying; stakeholder consultation, approaches and frequency; stakeholder consultations, types of

information generated; and stakeholder consultations, uses of information generated. Each indicator is worth three points for a maximum possible stakeholder score of 12.

Reputation Management

To assess the reputation of companies quantitatively and address the final objective of this study, the researcher identified specific scorecard indicators related to reputation. Seventeen indicators, each worth three points, were used to explore the reputation of companies along the agri-food supply chain. The selected scorecard indicators are related to the five reputation elements suggested by Bebbington et al., (2008) “financial performance; quality of management; social and environmental responsibility performance; employee quality; and the quality of goods/services provided” (p. 340).

Financial performance

Five key performance indicators (KPI) of financial performance included gross profit margin, net profit, net profit margin, aging accounts receivable, and current ratio (McCamy, 2014). Two of those KPIs, net earnings and gross profit margin, are indicators on the scorecard and were used to assess the financial performance element of reputation.

Quality of management

The approaches to improving management quality scorecard indicator was used to measure the reputation element of quality of management.

Social and environmental responsibility performance

For the social and environmental responsibility performance element, some recommended social performance indicators included labor practices and human rights areas; environmental indicators included greenhouse gas emissions, water consumption, and waste output (“Sustainability Performance Indicators, SPI,” 2006). Scorecard indicators related to these

recommended areas include water use: total; greenhouse gas emissions: total; waste disposed of: total; ratio of lowest wage to national legal minimum; forced labor grievances (number of incidents); use of human rights screens in investments; systematic monitoring of organizational human rights practices; and human rights violations: number alleged, organizational position, and response.

Employee quality

Wage and retention rate are two indicators of employee quality (Davoine, Erhel, & Guergoat-lariviere, 2008; Price, 2014). Davoine et al., (2008) suggested that wage is one measure of employee quality because wage is compensation for quality of work. Retention rate can also be used to measure employee quality because it indicates employee satisfaction with their job (Price, 2014). While there are additional components to measure employee quality, these components relate to two specific scorecard indicators – wages and employee retention rates.

Quality of goods/services provided

Saraph, Benson, & Schroeder (1989) identified eight indicators of quality management including the role of management leadership and quality policy; role of the quality department; training; product/service design; supplier quality management; process management; quality data and reporting; and employee relations. Using the description provided by Saraph, Benson, and Schroeder (1989), the researcher was able to identify four scorecard indicators to measure the quality of goods and services element of reputation: labor productivity; training budget; worker participation; and supplier performance relative to social components.

Intercoder reliability

Since reliability is an important feature of content analyses (Riffe et al., 2005), intercoder reliability was established. The second coder on this project was an undergraduate agricultural communications student that worked in the Department of Communications and Agricultural Education at Kansas State University. As recommended by Riffe et al. (2005) the researcher trained the coder using the codebook. During training the researcher explained the codebook, then the researcher and coder scored a report together. Following this, they each coded two reports independently and discussed results. Discrepancies that arose during training were discussed by the researcher and coder and additional details about the codebook were discussed to clarify confusion; content analyzed during coder training included sustainability reports that were not included in the study, as recommended by Riffe et al. (2005). After training, the researcher and coder each coded a random sample of 20% ($n = 3$) of the reports in the study (Wimmer & Dominick, 2003). After the reports had been analyzed, Krippendorff's alpha was used to determine intercoder reliability. Krippendorff's alpha was selected as the measure for reliability because it can be used with two coders, regardless of the levels of measurement, sample size, and missing data (Hayes & Krippendorff, 2007). An intercoder reliability score of 0.913 was obtained; absolute agreement for Krippendorff's alpha is 1.0, so the score of 0.913 is considered to be a strong level of agreement (Hayes & Krippendorff, 2007). The remaining reports ($n = 13$) were then divided between the two coders for coding.

Data Analysis

Once all reports were coded, data were analyzed using SPSS v. 20. This software enabled the researcher to make comparisons between sustainability reports of individual companies and among industry segments. To address the specific objectives of this study, frequencies; means

and frequencies for total and sub-factor scores; and means comparisons for total, sub-factor, and individual scores were calculated. A one-way analysis of variance was used to compare mean scores by comparing the variance between sustainability component scores with the variability within the industry sectors.

The unit of analysis for this study was the sustainability report published by a company along the agricultural supply chain. The independent variables were the 139 topics on the scorecard (Appendix C). The dependent variable was the total sustainability score for each company, as well as factor scores for general organization, environmental performance, economic performance, and social performance.

Limitations

There are some limitations to this study. The first limitation is the sampling methodology. The study is random, not purposive. Although purposive sampling would allow the researcher to include only companies that published a report in the sample (Wimmer & Dominick, 1983), the random sampling methodology allowed the researcher to report on the popularity of sustainability reporting among food system companies.

Another limitation is the exclusion of the farm sector, since this is the largest sector in terms of the number of players. However, due to the limited number of farm-level sustainability reports, this sector was unable to be included in the study.

The final limitation of this study is the use of the scorecard developed using the initial GRI reporting guidelines. While updating the instrument would have provided a more accurate reflection of how reports align with the latest GRI reporting guidelines, the changes to the guidelines were minimal. Thus, to ensure consistency among studies using the instrument, the researcher opted to use the initial scorecard. Additionally, by using the initial scorecard, the

researcher was able to make some general comparisons between companies analyzed in this study and companies analyzed by Morhardt et al., (2002).

Summary of Methodology

This study utilized a quantitative content analysis to address the objectives of this study. Simple random sampling was used to identify companies to be analyzed. The scorecard used to analyze sustainability reports was first used to analyze environmental and sustainability reports (Morhardt et al., 2002). SPSS v. 20 was used to analyze data. Means and frequency statistics were used to answer the research objectives of this study. Limitations of this study included the sampling methodology, exclusion of the farm sector, and limited population size of the agricultural input sector.

Chapter 4 - Results

The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. This chapter is organized around the five research objectives presented in Chapter 1: to determine the prevalence of sustainability reporting among agri-food supply chain companies; identify, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports; next, determine if/how sustainability reporting differs among sectors of the agricultural supply chain; assess how companies describe stakeholder engagement in sustainability reports; and finally, explore which aspects of reputation were included in sustainability reports.

RO1: Determine the prevalence of sustainability reporting among agri-food supply chain companies.

The sample for this study included 66 companies. Of those companies 3.0% (n = 2) represented agricultural input suppliers; 37.9% (n = 25) were food manufacturing companies; and 59.1% (n = 39) represented retailers. The number of companies in each sector are represented in Table 4.1.

Table 4.1
Frequency of companies by sector

Sector	Frequency (<i>f</i>)	Percent (%)
Input Supplier	2	3.0
Manufacturer	25	37.9
Retailer	39	59.1

While 66 companies were analyzed in this study's objective 1, not all of those companies published sustainability reports. For this study, a published report was characterized as being

publically accessible to stakeholders either through the company website or other external webpage. A quarter (n = 16) of companies analyzed in this study published sustainability reports. Specifically, 100% (n = 2) of input suppliers, 32.0% (n = 8) of food manufacturers, and 15.4% (n = 6) of retailers published sustainability reports (Table 4.2).

Table 4.2
Frequency of sustainability reporting by sector

Sector	Frequency (<i>f</i>)	Percent (%)
Input Supplier (n = 2)	2	100
Manufacturer (n = 25)	8	32.0
Retailer (n = 39)	6	15.4

The specific companies that publish sustainability reports in each industry sector are outlined in Table 4.3.

Table 4.3

Companies in sample with sustainability reports

Company (N = 16)	Industry Segment
Monsanto Co.	Input Supplier
Deere & Company	Input Supplier
Flowers Foods, Inc.	Manufacturer
PepsiCo Inc.	Manufacturer
Seneca Foods Inc.	Manufacturer
Kellogg Co.	Manufacturer
J.M. Smucker Co.	Manufacturer
Coca-Cola Co.	Manufacturer
Mars Inc.	Manufacturer
Campbell Soup Co.	Manufacturer
Weis Markets, Inc.	Retailer
SpartanNash	Retailer
Delhaize America Co.	Retailer
Publix Super Markets, Inc.	Retailer
Whole Foods Market, Inc.	Retailer
Kroger	Retailer

Given that there is no legal requirement for businesses to publish non-financial reports, it is possible that the remaining 50 companies in the study sample did not issue a report. However, despite not having a published sustainability report, 14 (21.2%) of the remaining 50 companies had sustainability or corporate responsibility sections on the company's website. Seven (50%) of those companies represent food manufacturers, while the remaining seven (50%) represent retailers. Companies in the study sample with no sustainability reports are represented in Table 4.4.

Table 4.4

Companies without a published sustainability report

Company (n = 50)	Industry Segment	Website Section* (n = 14)
Lancaster Colony Corporation	Manufacturer	
Weston Foods	Manufacturer	X
Gilster-Mary Lee Corporation	Manufacturer	
TreeHouse Foods, Inc.	Manufacturer	X
Pinnacle Foods Group LLC	Manufacturer	
AdvancePierre Foods	Manufacturer	
Diamond Foods, Inc.	Manufacturer	
Beam, Inc.	Manufacturer	X
Rich Products Corp.	Manufacturer	X
Dole Foods Co., Inc.	Manufacturer	X
MOM Brands Co.	Manufacturer	X
Boston Beer Co.	Manufacturer	
American Crystal Sugar Co.	Manufacturer	
Hearthside Food Solutions LLC	Manufacturer	
Golden State Foods	Manufacturer	
Post Foods	Manufacturer	
Mondelez International	Manufacturer	X
A&P	Retailer	
Safeway Company	Retailer	X
Giant Eagle	Retailer	
Schnuck Markets	Retailer	
Village Super Market, Inc.	Retailer	
Overwaitea Food Group	Retailer	X
Grocers Supply Co.	Retailer	
Bashas	Retailer	X
Fareway Stores, Inc.	Retailer	
Stater Bros. Markets	Retailer	
Ingles Markets, Inc.	Retailer	X

Coborn's, Inc.	Retailer	X
Trader Joe's Co.	Retailer	
7-Eleven	Retailer	
Big Y Foods, Inc.	Retailer	
Unified Grocers	Retailer	
SuperValu, Inc.	Retailer	X
Smart & Final	Retailer	
Saker ShopRites Inc.	Retailer	
Dollar General Corp.	Retailer	
Aldi	Retailer	
Superior Grocers	Retailer	
The Fresh Market	Retailer	
Demoulas Market Basket	Retailer	
Bodega Latina	Retailer	
Costco Wholesale Corp.	Retailer	
Hy-Vee	Retailer	X
WinCo Foods Inc.	Retailer	
Key Food	Retailer	
Metro	Retailer	
K-VA-T Food City	Retailer	
Raley's Supermarkets	Retailer	
Price Chopper Supermarkets	Retailer	

* X indicates company had sustainability section on website

RO2: Identify, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports

While the scorecard instrument collected data in five areas, only three (environment, economic, and social) are a part of the triple bottom line model and were used to assess objective

2. All companies with published reports (n = 16) reported environmental information in sustainability reports. Although the scores differ among companies, the mean environmental

score was 23.1, with scores ranging from 12 to 54 out of a possible 115 (20.1% attainment), with higher scores being better. Fifteen (93.8%) companies included economic information in reports, which ranged from 4 to 20 with a mean economic score of 8.4 out of a possible 69 (12.1% attainment). Social information was reported by 14 (87.5%) companies with scores ranging from 2 to 46 out of a possible 111 (12.4% attainment). The mean social score was 13.8. Table 4.5 shows the environment, economic, and social scores for each company.

Table 4.5

Component scores for agricultural supply chain companies

Company	Sector	Environment ^a	Economic ^b	Social ^c
Deere & Company	Input Supplier	24, 20.9%	18, 26.1%	19, 17.1%
Monsanto Co.	Input Supplier	43, 37.4%	19, 27.5%	32, 28.8%
Seneca Foods Inc.	Manufacturer	12, 10.4%	7, 10.1%	5, 4.5%
Flower Foods Inc.	Manufacturer	21, 18.3%	0, 0%	0, 0%
PepsiCo Inc.	Manufacturer	17, 14.8%	8, 11.6%	7, 6.3%
Campbell Soup Co.	Manufacturer	54, 46.9%	20, 28.9%	46, 41.4%
Mars Inc.	Manufacturer	28, 24.3%	6, 8.7%	27, 24.3%
J.M. Smucker Co.	Manufacturer	13, 11.3%	11, 15.9%	7, 6.3%
Coca-Cola Co.	Manufacturer	26, 22.6%	6, 8.7%	31, 27.9%
Kellogg Co.	Manufacturer	16, 13.9%	6, 8.7%	14, 12.6%
Weis Markets Inc.	Retailer	27, 23.5%	7, 10.1%	2, 1.8%
Publix Super Markets Inc.	Retailer	18, 15.7%	6, 8.7%	3, 2.7%
Whole Foods Market Inc.	Retailer	12, 10.4%	4, 5.8%	0, 0%
Delhaize America Co.	Retailer	23, 20.0%	4, 5.8%	16, 14.4%
SpartanNash	Retailer	18, 15.7%	7, 10.1%	5, 4.5%
Kroger	Retailer	18, 15.7%	5, 7.2%	6, 5.4%

^a Maximum possible score for environment was 115

^b Maximum possible score for economic was 69

^c Maximum possible score for social was 111

The economic component was the component with the lowest score for 50% (n = 8) of companies. The social component was the second weakest segment, which was the component with the lowest score for 43.8% (n = 7) of companies. For one company, Flower Foods Inc., both the economic and social components were the lowest sector, each receiving a score of zero. The environmental sector was the component with the highest score for 87.5% (n = 15) of companies.

RO3: Determine if/how sustainability reporting differs among sectors of the agricultural supply chain.

The scorecard instrument collected data related to five areas – general organization, environmental performance, economic performance, social performance, and total score. While the second study objective specifically addressed environmental, economic, and social performance indicators, data from all five areas were used to assess objective 3. Sixteen companies (100%) reported general organization information in sustainability reports. General organization scores ranged from 7 to 93, with a mean score of 41.6 out of 134 (31% attainment). The total sustainability score ranged from 19 to 176 with a mean of 86.8, out of a possible 429 (20.2% attainment). Table 4.6 shows the maximum, minimum, and mean scores for all five sustainability areas.

Table 4.6

Minimum, maximum, mean scores, and percent attainment for sustainability indicators

Indicator	Companies*	Score			% Attainment**
		Minimum	Maximum	Mean	
General ^a	16	7	93	41.6	31.0
Environment ^b	16	12	54	23.1	20.1
Economic ^c	15	4	20	8.4	12.1
Social ^d	14	2	46	13.8	12.4
Total ^e	16	29	176	86.8	20.2

* n = 16

** % Attainment = mean score/maximum possible score

^a Maximum possible score possible was 134^b Maximum possible score possible was 115^c Maximum possible score possible was 69^d Maximum possible score possible was 111^e Maximum possible score possible was 429

A one-way between subjects ANOVA was conducted to compare the effect of industry sector on general, environment, economic, social, and total sustainability scores. A total of 139 indicators are included in the scorecard, 39 are related to general organization, 34 deal with environmental performance, nine indicators assess the company's economic performance, and social performance is assessed using 48 indicators. The total sustainability score is found by adding scores from each of the four areas, with a maximum possible score of 429. All tests were conducted at the $p < .05$ level.

There was a significant effect of industry sector on general scores [$F(2,13) = 5.95, p = 0.02$], economic scores [$F(2,13) = 6.93, p = 0.01$], and total scores [$F(2,13) = 4.84, p = 0.03$]. There was no significant effect of industry sector on environmental scores [$F(2,13) = 1.22, p = 0.32$] and social scores [$F(2,13) = 2.55, p = 0.12$]. Table 4.7 shows the results of the one-way ANOVA.

Table 4.7

One-way analysis of variance of sustainability scores by industry sector

Source	df	SS	MS	F	<i>p</i>
Between subjects					
General	2	5674.4	2837.2	5.95	.02
Environment	2	302.0	151.0	1.22	.32
Economic	2	255.8	127.9	6.93	.01
Social	2	792.3	396.2	2.55	.12
Total	2	18086.3	9043.2	4.84	.03

Post hoc comparisons using Fisher's LSD test were used to identify where differences identified by the ANOVA were located. The test indicated that the mean score for the general component was significantly different between input suppliers and manufacturers (MD = 45.6), as well as between input suppliers and retailers (MD = 61.5), with input suppliers having significantly higher scores than the other two sectors. However, the mean score for the general component was not significantly different between manufacturers and retailers (MD = 15.9).

The post hoc comparison also indicated the economic scores for the input suppliers were significantly different than the manufacturers (MD = 10.5) and retailers (MD = 13.0), with input suppliers again having scores that were significantly higher than food manufacturers and retailers. However, the mean economic score for manufacturers did not significantly differ from the retailers (MD = 2.5).

Post hoc comparisons indicated the mean total score for the input suppliers was significantly higher than both manufacturers (MD = 74.6) and retailers (MD = 109.2). However, the mean total score was not significantly different between manufacturers and retailers (MD = 34.5). The results of the post hoc comparison are displayed in Table 4.8.

Table 4.8

Results of Fisher’s LSD post hoc comparison

		Scorecard Component					
		General		Economic		Total	
Industry Segment Comparison		p =	MD	p =	MD	p =	MD
Input Supplier	Manufacturer	.020	45.625	.009	10.500	.047	74.625
	Retailer	.004	61.500	.003	13.000	.008	109.167
Manufacturer	Retailer	.201	15.875	.301	2.500	.161	34.219

* Significant difference at $p < .05$

RO4: Assess how companies describe stakeholder engagement in sustainability reports.

Four scorecard indicators specifically addressed stakeholders and each indicator was worth three points. The scoring system for each of the four indicators was based on a scale of 0 to 3. The point value is as follows: “0, not mentioned; 1, anecdotal or briefly mentioned; 2, more detail, but characterizing only selected facilities or using only self-comparison metrics; 3, company-wide absolute or relative metrics that could be compared with other companies” (Morhardt et al., 2002, p. 221).

Ten companies (62.5%) included some mention of stakeholders or stakeholder interactions in reports. The mean for the first indicator, basis for identifying major stakeholders, was 1.4 on a scale of zero to three. For the second indicator, approaches and frequency of stakeholder consultations, the mean was 0.71. Types of information generated during stakeholder consultations had a mean of 1.1. The final stakeholder indicator, uses of information generated during stakeholder consultations, had a mean of 0.93. The six companies that did not include any mention of stakeholders or interactions with stakeholders were not included in this analysis. Those companies are Seneca Foods Inc., Flower Foods Inc., Kellogg Co., Publix Super Markets

Inc., Whole Foods Market Inc., and SpartanNash. Table 4.9 shows the stakeholder indicator scores for the companies that included stakeholder information in sustainability reports.

Table 4.9

Stakeholder intention indicator scores for companies along the agricultural supply chain

Company	Sector	Scorecard Indicator*				Total score**
		Stakeholders	Consultation approaches	Information types	Information uses	
Delhaize America	Retailer	2	3	3	3	11, 91.6%
Campbell Soup	Manufacturer	1	2	3	3	9, 75.0%
Deere & Company	Input	3	1	1	1	6, 50.0%
Mars Inc.	Manufacturer	1	1	2	3	6, 50.0%
Monsanto Co.	Input	1	1	3	1	6, 50.0%
Coca-Cola Co.	Manufacturer	0	1	2	2	5, 41.7%
PepsiCo. Inc.	Manufacturer	1	1	1	1	4, 33.3%
J.M. Smucker Co.	Manufacturer	3	0	0	0	3, 25.0%
Kroger	Retailer	1	0	0	0	1, 8.3%
Weis Markets Inc.	Retailer	1	0	0	0	1, 8.3%

* 0 = not mentioned; 1 = anecdotal, or just briefly mentioned; 2 = more detail, but characterizing only selected facilities, or using only self-comparison metrics; 3 = company-wide absolute or relative metrics that can be compared with others

** Maximum possible stakeholder score was 12

Further examination of the 10 reports revealed the major stakeholders identified by the companies were customers, employees, suppliers, shareholders, communities, governmental authorities, non-governmental authorities, industry networks, consumers, suppliers, investors, dealers, and business partners. The most frequently identified stakeholders included customers, who were mentioned in five reports; employees and consumers, who were mentioned in three reports; and communities and investors, who were mentioned in two reports.

Various approaches to stakeholder consultations were included in reports, including surveys, dialogues, management meetings, knowledge sharing sessions, supplier summits, direct

engagement, and social media. Information gathered from stakeholder consultations was used by companies to improve, innovate, and adapt; identify issues and inform policies; alter processes; and build on existing feelings of organization trust.

RO5: Explore which aspects of reputation are included in sustainability reports.

Since it is difficult to measure the reputation of a company, the researcher worked to assess the reputation of companies by using specific indicators on the scorecard that related to the five reputation elements suggested by Bebbington et al. (2008) “financial performance; quality of management; social and environmental responsibility performance; employee quality; and the quality of goods/services provided” (p. 340). The two scorecard indicators of net earnings and gross profit margin were used to assess the financial performance element of reputation. The eight scorecard indicators used to assess the social and environmental responsibility performance element included water use: total; greenhouse gas emissions: total; waste disposed of: total; ratio of lowest wage to national legal minimum; forced labor grievances (number of incidents); use of human rights screens in investments; systematic monitoring of organizational human rights practices; and human rights violations: number alleged, organizational position, and response. Four scorecard indicators were used to measure the quality of goods and services element of reputation: labor productivity; training budget; worker participation; and supplier performance relative to social components. The approaches to improving management quality scorecard indicator was used to measure the reputation element of quality of management. Wages and employee retention rate were the two indicators used to measure employee quality.

Seventeen indicators, each worth three points, were used to explore the reputation of companies along the agricultural supply chain. Reputation scores for the 16 companies ranged from 2 (3.9%) to 20 (39.2%), with a maximum possible score of 51. Three of the reputation indicators received zero points from all 16 companies. These indicators are gross margins; labor productivity levels; and training budget. Table 4.10 displays the total reputation score for each company, based on percentage.

Table 4.10
Company reputation scores

Company	Sector	Reputation Components					Total*
		1 ^a	2 ^b	3 ^c	4 ^d	5 ^e	
Campbell Soup Co.	Manufacturer	16.6%	33.3%	61.9%	16.6%	33.3%	39.2%
Monsanto Co.	Input Supplier	50.0%	33.3%	57.1%	33.3%	0%	35.3%
Deere & Company	Input Supplier	50.0%	100%	38.1%	16.6%	16.6%	33.3%
Coca-Cola Co.	Manufacturer	0%	0%	61.9%	0%	8.3%	27.5%
Mars Inc.	Manufacturer	16.6%	33.3%	38.1%	0%	33.3%	27.5%
Delhaize America	Retailer	0%	0%	38.1%	16.6%	16.6%	21.6%
Kellogg Co.	Manufacturer	0%	0%	38.1%	0%	0%	15.7%
Flower Foods Inc.	Manufacturer	0%	0%	33.3%	0%	0%	13.7%
PepsiCo Inc.	Manufacturer	16.6%	0%	23.8%	16.6%	0%	13.7%
SpartanNash	Retailer	0%	0%	28.6%	16.6%	0%	13.7%
J.M. Smucker Co.	Manufacturer	16.6%	0%	23.8%	0%	0%	11.8%
Kroger	Retailer	0%	0%	23.8%	0%	0%	9.8%
Publix Super Markets	Retailer	0%	0%	19.0%	0%	0%	7.8%
Weis Markets Inc.	Retailer	0%	0%	19.0%	0%	0%	7.8%
Whole Foods Market	Retailer	0%	0%	14.3%	0%	0%	5.9%
Seneca Foods Inc.	Manufacturer	0%	0%	9.5%	0%	0%	3.9%

* Maximum possible reputation score was 51

^a Financial performance, maximum possible score was 6

^b Quality of management, maximum possible score was 3

^c Social and environmental responsibility performance, maximum possible score was 21

^d Employee quality, maximum possible score was 6

^e Quality of goods and services, maximum possible score was 12

In the area of financial performance the maximum possible score was six points. Scores

ranged from 0 (0%) to 3 (100%) points. The mean score was 0.63 (10.5%). For the quality of management element of reputation the maximum possible score was 3 points. The mean score was 0.38 (12.6%) with scores ranging from 0 (0%) to 3 (100%). Twelve companies had 0 points in this area. In the area of social and environmental responsibility performance the maximum possible score was 24 points. Scores in this area ranged from 2 (8.3%) to 13 (54.2%) with a mean score of 6.9 (28.8%). In the area of quality of goods and services the maximum possible score was 12. Scores ranged from 0 (0%) to 4 (33.3%) with a mean score of 0.8 (6.8%). Eleven companies had 0 points in this area. A maximum of 6 points was available in the area of employee quality. Scores ranged from 0 (0%) to 2 (33.3%) with a mean score of 0.4 (6.7%). Ten companies received 0 points in this area.

Looking at reputation scores from an industry segment perspective, the input supplier segment had a mean total reputation score of 17.5 points, compared to 5.7 for retailers, and 4.0 for manufacturers (Table 4.11). The input sector had the highest reputation scores in all areas except for quality of goods and services, where it had a mean score of 1 compared to food manufacturers who had a mean score of 1.3. Retailers had the lowest mean score for all areas of reputation except employer quality, where retailers had a mean score of 0.33 compared to a mean of 0.25 for food manufacturers.

Table 4.11
Mean reputation scores for each industry segment

Sector	Reputation Component					Mean Total
	Quality of Management	Financial Performance	Social & Environment	Quality of Goods & Services	Employee Quality	
Input	2	3	10	1	1.5	17.5
Manufacturers	0.25	0.5	7.6	1.13	0.25	4
Retailers	0	0	5	0.33	0.33	5.76

Follow-up Analysis

After analyzing the data related to the five study objectives, the researcher recognized a gap in the research that did not account for determining if there was a relationship between report length and total sustainability score. Since the data needed to assess this objective had already been collected, the researcher was able to assess this relationship. The relationship between total sustainability score and report length (based on word count) was investigated using the Pearson product-moment correlational coefficient. This correlational coefficient was selected as the appropriate correlational analysis for this study because it is designed for interval variables (Pallant, 2013). Results indicated a strong, positive relationship between the two variables, $r = 0.65$, $n = 16$, $p < .01$, two-tailed. This suggests that higher sustainability scores are associated with longer reports; as word count increased, the total sustainability score for a company also increases. Table 4.12 shows the relationship between sustainability score and word count for each company.

Table 4.12

Relationship between sustainability score and word count

Company	Sector	Sustainability Score	Word Count	%*
Deere & Company	Input Supplier	154	4752	30.9
Monsanto Co.	Input Supplier	176	45655	259.4
Seneca Foods, Inc.	Manufacturer	38	6815	179.3
Flower Foods, Inc.	Manufacturer	40	2925	73.1
PepsiCo, Inc.	Manufacturer	86	19342	224.9
Campbell Soup Co.	Manufacturer	197	44894	227.9
Mars, Inc.	Manufacturer	124	19342	155.9
J.M. Smucker Co.	Manufacturer	75	44894	598.6
Coca-Cola Co.	Manufacturer	107	19326	180.6
Kellogg Co.	Manufacturer	56	3799	67.8
Wies Markets, Inc.	Retailer	56	3832	68.4
Publix Super Markets, Inc.	Retailer	34	3238	95.2
Whole Foods Market, Inc.	Retailer	29	16651	574.2
Delhaize America Co.	Retailer	106	30635	289.0
SpartanNash	Retailer	38	4542	119.5
Kroger	Retailer	72	18081	251.1

* Word count/sustainability score

Summary

A quantitative content analysis was used to address the objectives of this study.

Descriptive and frequency statistics, one-way between subjects ANOVA, and an analysis of correlation were used to analyze data for this study. The results of these analyses described the prevalence of sustainability reporting along the agricultural supply chain; identified, to what extent, the three components of the triple bottom line sustainability model are represented in sustainability reports; determined how sustainability reporting differs among sectors of the

agricultural supply chain; assessed how companies describe stakeholder engagement in sustainability reports; and explored which aspects of reputation are included in sustainability reports.

Chapter 5 - Conclusions

Summary of Research

The purpose of this study was to examine the role of sustainability reporting from companies involved in the agri-food supply chain. The focus was on understanding how sustainability reports align with the triple bottom line model of sustainability. This study was also focused on understanding how companies address stakeholders in reports and determining what role reputation management has in sustainability reporting. A quantitative content analysis was used to address the research objectives of determining the prevalence of sustainability reporting among agri-food supply chain companies; identifying, to what extent, the three components of the triple bottom line sustainability model were represented in sustainability reports; determining if/how sustainability reporting differs among sectors of the agricultural supply chain; assessing how companies describe stakeholder engagement in sustainability reports; and exploring which aspects of reputation are included in sustainability reports.

Conclusions by Objective

Determine the prevalence of sustainability reporting among food system companies

The results of this study indicated that overall only 25% of companies along the agricultural supply chain published non-financial reports. Although voluntary sustainability reporting has been increasing in recent years (Fifka & Drabble, 2012; Junior et al., 2013; Kolk, 2003), the results of this study suggest the agricultural industry appears to be slow in its reporting efforts. This is consistent with other literature that also suggests that agribusiness' response to sustainability has been reactive, not proactive (Accenture, 2012). Companies along the agriculture and food supply chain could be laggards in sustainability reporting because companies are not mandated to issue reports (Kolk, 2008). Limited research on how markets

react to the adoption of CSR practices (Detre & Gunderson, 2011) could be another contributing factor that might explain the lack of sustainability reporting from agribusinesses.

Although companies in this study received only 20% of the total possible points available using the scorecard, companies along the agri-food supply chain have higher mean report scores than the companies that were analyzed in the initial study by the scorecard's authors.

Specifically, mean scores for companies in the agriculture industry are higher than companies in the initial study that represented four industries – motor vehicles and parts; petroleum refining; utilities, gas, and electric; and electronics (Morhardt et al., 2002). Data were not available from Morhardt et al., to do a statistical comparison, but a simple mean difference provides evidence for this assessment. This suggests that although companies in the agriculture and food supply chain appear slow in adoption of sustainability reporting practices, as an industry, agriculture is exceling at earning more points when compared to four other industries using the same instrument. This comparison is useful when considering how the agri-food supply chain compares to other industries in terms of sustainability reporting.

Additionally, the prevalence of sustainability reporting also varies depending on industry segment. Based on the descriptive analysis, the input sector has the highest prevalence of reporting (100%), followed by food manufacturers (32.0%), and then retailers (15.4%).

However, with the small sample for input suppliers based on focused sampling, it is hard to generalize that, as a whole, input suppliers are the most active sector in regards to sustainability reporting. Sustainability reporting may be more prevalent by companies at the start of the supply chain because, as Rankin et al., (2011) suggests, “upstream members of the supply chain such as input suppliers and producers bear the costs of innovation and environmental damage while

downstream supply chain members such as processors and retailers often receive the economic benefits and value added from sustainability” (p. 2).

With increased pressure from stakeholders asking companies to publish sustainability reports and the growing environmental and social impacts of the agricultural industry (Rankin et al., 2011), it is surprising that more agribusinesses do not issue sustainability reports. Despite not publishing a report, 14 companies in the study sample did have website sections regarding sustainability or other related topics. This suggests that companies have recognized the importance of communicating about sustainability. While there is no guarantee that companies will experience positive financial gains as a result of publishing a non-financial report, companies are likely to experience increased reputation (Detre & Gunderson, 2011; Ihlen et al., 2011; Kolk, 2004), strengthened customer relationships (Du, Bhattacharya, & Sen, 2010), and competitive differentiation (Accenture, 2012; Kolk, 2004). There are also internal advantages for companies that elect to publish reports such as an “enhanced ability to track progress against specific targets; greater awareness of broad environmental issues throughout the organization; improved all-around credibility from greater transparency; and ability to clearly convey the corporate message internally and externally” (Kolk, 2004, p. 54).

Identify, to what extent, the three components of the triple bottom line sustainability model are represented in sustainability reports.

Not all companies along the agri-food supply chain analyzed in this study include information related to all three elements of the triple bottom line model of sustainability, which are economic, environmental, and social. Environmental information was reported to some extent in all 16 sustainability reports analyzed in this study. Additionally, the environmental component score was never the lowest component for any of the companies. These findings

could be due to the fact that many initial sustainability reports focused solely on environmental factors (Kolk, 2003; Sridhar, 2012), so companies have the most experience reporting environmental information. Eight companies had the lowest score in the economic component. Since publically traded companies are legally required to publish an annual financial report, companies may not feel it is necessary to include economic information in sustainability reports (Morhardt et al., 2002), which may account for the low scores in this area.

Although there has been a shift towards reports that include economic, environmental, and social aspects (Kolk, 2004), it is apparent that businesses still put the most emphasis on environmental factors in published reports. However, since the various definitions and models of sustainability include economic, environmental, and social factors (Elkington, 1994; United Nations, 1997), companies need to shift from focusing strictly on environmental factors to more holistic reports that include all three factors to a greater degree.

Despite having sustainability reports, companies along the agriculture and food supply chain had low scores in all areas of the TBL model; mean scores for each company were less than 50% of the total possible points for each area. Additionally, agri-food supply chain companies only attained 20.2% of the total points possible using the scorecard. This finding aligns with the initial research using the GRI scorecard instrument, where the companies analyzed each received less than 20% of the total points available (Morhardt et al., 2002). The current study and the initial study suggests there is a “tremendous gap between what large companies think is appropriate to report and what is hoped for by the Global Reporting Initiative” (Morhardt et al., 2002, p. 225).

Determine if/how sustainability reporting differs among sectors of the agricultural supply chain.

The results of this study indicated some significant differences in sustainability reporting between input suppliers and food manufacturers, as well as between input suppliers and retailers. However, there was no significant difference in mean scores for sustainability reports between food manufacturers and retailers. Specifically, in the areas of general, economic, and total scores, input suppliers had significantly higher mean scores than both food manufacturers and retailers.

The study results suggest that input companies in this sample have stronger sustainability reports, specifically as it relates to general and economic areas. Despite having relatively low scores, input companies in the sample have the strongest sustainability scores overall as total scores for input companies are significantly higher than both food manufacturers and retailers. These results suggest that there is some difference in sustainability reporting among companies in the agricultural supply chain. By identifying which industry sector excels at sustainability reporting in terms of both prevalence of reporting among companies in the sector and the sustainability scores of companies in that sector, other companies can begin to identify the types of information to include in sustainability reports. Beyond looking at the reports from input suppliers, companies should consider the recommendations from sustainability reporting guidelines and report information that specifically addresses sustainability indicators.

The lack of significant difference between environmental and social scores among industry segments suggests that companies along the agriculture and food supply chain are fairly consistent in reporting information related to these areas. The consistently higher environmental scores is likely due to companies having the most experience and familiarity with reporting environmental information (Kolk, 2008). However, despite having the most experience reporting this information, it is surprising that, on average, companies only received 20.1% of the total

environmental points possible. Conversely, the relatively new addition of social components in sustainability reports (Kolk, 2004) suggests that companies lack experience reporting social information, which provides support for the consistently low scores for agribusinesses in the area of social performance, with agribusinesses only receiving 12.4% of the total possible points in the social category. These results suggest that even though companies provide a consistent level of reporting related to environmental and social performance, there is an opportunity for growth in reporting information related to specific indicators for both performance areas. Additionally, the relatively low scores in the social category also may suggest a lack of familiarity with social elements as part of sustainability.

Assess how companies describe stakeholder engagement in sustainability reports.

The results of this study indicated that 10 companies discussed stakeholders and/or stakeholder interactions to some extent in sustainability reports. The remaining six included no mention of stakeholders or stakeholder interactions. The overall lack of companies that include mention of stakeholder engagement suggests that companies have not placed an importance on transparency with stakeholders. However, companies should work to improve transparency regarding stakeholder interactions in an attempt to demonstrate efforts to engage with the variety of stakeholder groups.

These findings are consistent with 2013 findings that U.S. companies struggle to explain stakeholder engagement (KPMG International Cooperative, 2013b). Only one third (31%) of Global 250 companies include stakeholder engagement information in reports (KPMG International Cooperative, 2013b); which is consistent with the results of this research that not all companies include this information in sustainability reports. Since corporate social responsibility activities have been found helpful in developing and maintaining stakeholder relationships

(Roberts, 1992), companies not currently publishing sustainability reports should consider doing so as a way to engage with stakeholder groups.

Companies that do not include any mention of stakeholders in sustainability reports should consider Freeman's (1994) recommendation to describe the types of stakeholder relationships desired. Since stakeholders can have a direct impact on a company's success (Freeman, 1994), it is imperative that companies include mention of stakeholder engagement in reports. Companies also should consider who the target audience is for the sustainability reports to help tailor the content included. Corporate Citizenship (2012) found that sustainability reports are most often intended for internal audiences, analysts and financial stakeholders, as well as customers; whereas, consumers, opinion leaders, and communities are not typically the target audience for sustainability reports. These same stakeholders were also frequently identified in the sustainability reports by companies analyzed in this study.

Another recommendation is that companies consider including a separate report section for each key stakeholder group (Kolk, 2004) and report the information that is most relevant to each group. Including specialized sections targeted at specific stakeholders is important because the way company's engage with each group should be unique to the preferences of that specific group. Each stakeholder group values different information, so including sections that target each stakeholder groups enables companies to have a valuable connection with stakeholders.

Explore which aspects of reputation are included in sustainability reports.

Based on descriptive analysis, all companies in the sample included some information aimed at managing reputations. The results of this study indicate that input suppliers in the sample have the most reputation information included in reports. Additionally, unlike food manufacturers and retailers, input companies included information related to all five areas of

reputation. As an entire sector, food manufacturers also included information related to all five reputation elements. Unlike input suppliers and food manufacturers, retailers had no information for two areas of reputation – quality of management and financial performance. Furthermore, only one retail company had any information related to the quality of goods and services indicator.

The reputational element quality of management had the lowest scores for 14 (87.5%) companies. Social and environmental responsibility performance was the reputational element with the highest score for all 16 (100%) companies. The high scores in this area provides additional support that companies focus heavily on environmental factors in sustainability reports.

There are numerous reputational ranking studies, so it is possible that companies analyzed in this study focused on other elements of reputation, which could have resulted in the low reputation scores. However, since a positive reputation can result in tangible benefits for a company (Fombrun, 1996), companies should consider enhancing reporting efforts related to the five elements of reputation suggested by Bebbington et al., (2008). Although companies in the agriculture and food supply chain were somewhat lacking in terms of reporting related to the five reputational elements, the fact that they have a published sustainability report is a good indicator that they want to enhance reputation and/or manage reputational risks (Bebbington et al., 2008). Furthermore, companies may use other communication channels to maintain or enhance existing reputations, such as websites, blogs, and social media. While reputation management using these communication channels is a valuable way to manage an existing reputation, including reputation information in sustainability reports is an opportunity for companies to have an additional point of contact with stakeholders and is another opportunity to improve reputation.

Since companies are continually in the public eye, companies should take advantage of this additional point of contact as an opportunity to improve stakeholder's perceptions.

Follow-up Analysis

A strong, positive relationship between word count and total sustainability score was identified. This suggests that as a company's sustainability report gets longer the total sustainability score of the report increases. Companies should remember that sustainability score is related to reporting information that is in line with the GRI guidelines and thus not include a lot of verbose text in hopes of increasing the total sustainability report of the company.

Although the data in this study suggests that longer sustainability reports have higher total scores, this does not have to be the case. Companies can increase sustainability report scores without increasing report length by being more strategic about the information included in sustainability reports. Companies that take time to become familiar with the GRI reporting guidelines can tailor report information to align more closely with the guidelines, which can help improve the total sustainability report score, resulting in more comprehensive and inclusive reporting. In addition to increasing sustainability report scores, companies that are strategic in reporting efforts can benefit from increased stakeholder engagement and improved reputation through transparency, among other things.

Discussion

This study provided exploratory details regarding sustainability reports from companies involved in the agri-food supply chain. Given the large size and complex nature of the agricultural supply chain, this study paints a small picture of sustainability reporting in the agricultural industry. Descriptive analysis of the data collected suggests that sustainability reporting is lacking by agricultural companies, specifically from companies involved in the

manufacturing and retail sectors. Although the literature suggests that an increasing number of companies are publishing sustainability reports, the results of this study suggest that sustainability reporting is not a priority, in terms of both quantity of reports and quality of published reports, for all companies along the agricultural supply chain.

Additionally, while a growing number of reports include economic, environmental, and social information, the results of this study show that companies put the strongest emphasis on environmental information; this is likely because initial non-financial reports were strictly environmental reports (Kolk, 2003; Sridhar, 2012). However, with 14 of the 16 (87.5%) companies including information in all three areas (economic, environmental, and social), this research provides support for the literature that shows an increasing number of reports that are no longer strictly focused on the environment.

Through this research it was also determined that industry sector had an influence on mean sustainability score. Analysis of variance and post hoc tests showed that input suppliers had higher overall sustainability scores. Other companies should consider looking at reports from input companies to gain insight in the types of information to include in sustainability reports, specifically in the general and economic areas. However, the input sector also should consider ways to improve reporting efforts, since the scores for this sector were also low.

Although companies are including information regarding stakeholders and stakeholder interactions there is still room for improvement. The results of the descriptive analysis are not surprising since the literature suggests that U.S. companies struggle to explain stakeholder engagement (KPMG International Cooperative, 2013b). Since stakeholders are often the intended audience for sustainability reports, companies may not find it necessary to specifically highlight stakeholder groups or to discuss stakeholder interactions in the reports. However,

companies should focus on stakeholders because strong stakeholder relationships, particularly with customers, can result in stakeholders becoming brand advocates for the company (Du et al., 2007).

With limited ways to quantitatively measure reputation directly by reading sustainability reports, there are few conclusions that can be drawn related to reputation. Companies include the most information in reports that is related to the social and environmental responsibility performance element of reputation, which is consistent with the findings of this study that indicate companies include most information related to the environment in sustainability reports. However, it can be concluded that companies frequently publish reports as a way to develop, maintain, or improve stakeholder relationships (Bebbington et al., 2008; Fombrun et al., 2000). Since most reputational ranking studies focus on five reputational elements (Bebbington et al., 2008), companies along the agriculture supply chain should be sure to include information that addresses all five elements in non-financial reports. Publishing sustainability reports is one way for companies to enhance visibility and bolster reputations among stakeholder groups (Sridhar, 2012).

When looking at all components of sustainability reporting assessed in this research, the two input companies in the study sample excelled the most across all measures. Overall, input suppliers in this study appear to excel in sustainability reports compared to both food manufacturers and retailers. The scores for the input company sustainability reports exceed those of manufacturers and retailers, specifically in the areas of general, economic, and total scores. The input sector was the only sector where 100% ($n = 2$) of companies included information related to stakeholders and stakeholder interactions. In terms of reputational elements, input

suppliers included information for all five reputational elements and had the highest reputation scores.

Although it appears companies along the agri-food supply chain have not holistically embraced sustainability reporting, this does not mean the industry has not made strides to improve sustainability activities. However, it does reveal that an emphasis has not been placed on highlighting sustainability activities with a non-financial report. With a growing number of consumers concerned about agricultural sustainability (BASF, 2014), companies should consider the potential benefits of sustainability reporting.

Recommendations

Theoretical

Triple Bottom Line Sustainability Model

While the Triple Bottom Line (TBL) model of sustainability provides a solid foundation for looking at sustainability, additional research should consider how to quantify the sustainability of a company using this model. Presently, the model simply says it includes three areas; however, it does not include recommendations for how to quantify the sustainability of an entity or system using the TBL model. Including measures for sustainability quantification would make the model more user-friendly.

Although the TBL model includes three areas, the model needs additional clarification regarding the relationships between the three pillars. The present description of the model leads one to believe that all three areas are of equal importance; however, current sustainability reporting guidelines use a varying number of indicators to assess each area, suggesting that each area is not equal. If the model gives preference to the areas, that should be clarified.

In addition to establishing ways to measure sustainability using TBL, a ranking system should also be developed to allow companies to track improvement from year-to-year. This would make it possible to compare a company to other companies and would work toward a more consistent reporting format. A ranking system could give competitive advantage to higher ranking companies and would thus be of greater benefit to various stakeholder groups.

Stakeholder Theory

Stakeholder theory has made great improvements over time to recognize the growing number of stakeholders a company should consider. However, in addition to identifying all possible stakeholder groups and explaining the evolving relationship between companies and stakeholders, stakeholder theory needs to expand to provide information to help companies rank or prioritize stakeholders and explore the best ways to interact with them. Stakeholder theory has identified a plethora of stakeholders but does not explain best management practices for interacting with the diverse groups. Although specific characteristics of stakeholders will vary for each company, a broad set of best management practices for engagement with each stakeholder group would provide a baseline for companies to expand and thus enhance stakeholder relationships. Since stakeholders determine the reputation of a company, it is essential that companies know how to best engage with each group.

Reputation Management

It is recommended that future research look into ways to quantitatively measure reputation. While this study attempted to measure reputation using a certain set of scorecard indicators, this is not a method that can be used in studies that do not use the scorecard. With companies recognizing the value of reputation, a quantitative measure of reputation would be a

valuable asset not only for sustainability reporting, but other aspects of organizational communications and management.

Practical

It is recommended that companies along the agricultural supply chain publish sustainability reports to highlight sustainability efforts. With the issue of sustainability in agriculture becoming a growing concern for the general public (Wurth, 2014), sustainability reporting is becoming increasingly important for agribusinesses. Companies should continue to include environmental information, but also need to expand reporting to include more in-depth information related to economic and social areas.

It also is recommended that companies issuing sustainability reports use an established set of reporting standards such as the Global Reporting Initiative, Carbon Disclosure Project, or Dow Jones Sustainability Index. These standards assist companies in identifying the types of information to include in sustainability reports, which aids companies in effectively measuring and reporting information regarding sustainability efforts. Additionally, since sustainability is concerned with economic, environmental, and social areas (Rankin et al., 2011), companies should include information related to each of those areas.

All sectors of the supply chain should be involved in sustainability reporting. Although downstream members of the supply chain can pressure upstream supply chain members to demonstrate sustainability, all entities should work to demonstrate sustainability. Demonstrating sustainability is particularly important for downstream supply chain members since stakeholders have the most direct contact with these companies. Regardless of a company's place in the supply chain, it is imperative that companies are strategic in sustainability communication

efforts. Additionally, companies should keep stakeholders in mind when developing content to be included in reports.

This study offers some insight for communication professionals who are responsible for developing sustainability reports on behalf of companies. Reporting information on the more than 100 sustainability indicators identified by the GRI guidelines takes an investment of time, money, and human resources. Companies not currently issuing a report should not feel pressure to report on all 100 factors in inaugural reports. Instead, communicators should look through sustainability indicators to identify areas that the company is already collecting information for and report that information. Communicators should then strategically identify areas to collect information to report in subsequent reports. Slowly collecting information to include in sustainability reports can help make the process of publishing a sustainability report less overwhelming. This process is also a management tool to identify where organizations can increase sustainability activities.

Companies that do not have resources available to devote to the development of a sustainability report should, at a minimum, consider adding a sustainability section to existing websites. Doing so will demonstrate dedication to sustainability to stakeholders. Similarly, communicators should consider ways to strategically communicate about the company's sustainability efforts on social media sites and through other communication channels. Stakeholders build reputations based on available information of business activities (Fombrun & Shanley, 1990), so companies should be proactive in publishing information related to sustainability activities.

Since social responsibility disclosure is a way to manage stakeholder relationships (Roberts, 1992; Ullmann, 1985), companies not currently publishing reports should consider

doing so as a way to develop, maintain, or improve stakeholder relationships. Companies that currently publish sustainability reports should specifically address the various stakeholder groups in the report. Doing so demonstrates that companies have engaged with stakeholder groups, even though individual stakeholders may not have been asked to participate in activities.

Sustainability reports are long and include a lot of information that is not equally valuable to all stakeholder groups, so communicators should work to identify and organize the information most pertinent to each stakeholder group. Once that information has been identified, communicators should work to develop tailored, abbreviated reports for each group. This will ensure that each stakeholder group is receiving information it deems relevant and it will help to strengthen relationships between the company and its stakeholders. Communicators also should make reports easily accessible to stakeholders online by identifying strong key words.

Communicators should also work to assess the reputation of the company they work for, specifically as it pertains to the company's sustainability initiatives. Working to determine if stakeholders view a company positively or negatively will aid communicators in identifying strategic steps to enhance or maintain the existing reputation. To assess reputation, communicators should work with a variety of stakeholder groups and identify areas where the company can make improvements.

Overall, sustainability reporting on behalf of a company or organization should not stop and start with the publication of a physical report, but rather be integrated into a company's overall communication campaign. Communicators should strategically communicate information related to a company's sustainability activities on a regular basis. Sustainability information should be communicated through all channels identified in the communications plan, such as web pages, social media sites, blogs, and traditional media. Continually highlighting

sustainability efforts will further enhance stakeholder relationships and improve the company's reputation as it pertains to its sustainability activities.

Although the farm sector was excluded from this study due to an inability to locate farm-level sustainability reports, it is important to consider the role this sector plays in sustainability reporting since they are the largest sector in the agriculture and food supply chain (Vilsack & Clark, 2012). Instead of encouraging farms to publish sustainability reports, it is recommended that an alternative instrument is developed to measure the sustainability of the farm sector. Since the farm sector is largely responsible for growing the food needed to feed the growing population, they need to be included in the efforts to demonstrate the sustainability of the complex agriculture industry. In order to receive positive farm-level support for participating in the sustainability instrument, research should also work to demonstrate the economic advantage of reporting sustainability information.

The results of this study confirm the Morhardt et al., (2002) finding that there is a gap between the information the Global Reporting Initiative (GRI) has determined is necessary to include in a sustainability report and the information companies decide to include in reports. It is recommended that the GRI consider abbreviating reporting guidelines or enhance communication with companies to further explain the importance of reporting information for all indicators. In addition, it is recommended that companies consider expanding reporting efforts to include information that is relevant to the GRI reporting guidelines.

Finally, the existing scorecard developed using GRI 2000 reporting guidelines should be updated to align with the most recent GRI reporting guidelines. Communicators should consider ways to make the scorecard a stronger indicator of sustainability performance. Doing so would

enable communicators to better compare the sustainability performance of all companies analyzed using the scorecard.

Research

The current study describes sustainability reporting for a small sample of companies along the agricultural supply chain. Given that this research was exploratory and included only a small sample of agri-food supply chain companies, it is difficult to generalize these results to the entire agricultural supply chain. Thus, additional research should focus on analyzing all agribusinesses. Doing so will provide a larger, more accurate picture of sustainability reporting in agriculture.

Future research also should consider how sustainability reports impact a company's reputation. Since reputation is viewed as a valuable asset to companies, it is important to understand what value stakeholders place on sustainability reporting. An example of such research would be an experiment with two different sustainability reports to test the impact a sustainability report has on a company's reputation. This research could also reveal specific areas in the report that affect participants' perceptions of reputation. If a positive relationship between sustainability reporting and reputation is demonstrated, then companies may be more apt to participate in sustainability reporting.

Research also should be conducted to determine the economic benefit for companies that choose to publish sustainability reports. If the research reveals companies could benefit financially from reporting, it could result in a growing number of companies publishing reports. The research should consider companies outside of agriculture as well.

Limitations

The random sampling method limited the number of reports that were analyzed in this study. However, this sampling method allowed the researcher to determine the prevalence of reporting among a sample of food system companies. While a purposive sampling method that only included companies that published reports would have provided additional data related to the types of information included in reports, it would not have provided an accurate representation of reporting along the entire agricultural supply chain.

Excluding the farm sector from the study also is a limitation. However, the lack of farm-level sustainability reports found suggests that the production sector has not yet recognized a need to publish reports. This could be due to the nature of farm markets. Unlike input suppliers, manufacturers, and retailers which are price setters, farmers have little to no control over commodity markets and are, in turn, price takers (Carolan, 2012). Thus, they would not benefit financially from publishing a sustainability report. In addition, farms do not have traditional stakeholders that would be the target audience of a sustainability report.

Another limitation is the lack of a universally accepted set of sustainability reporting standards. The lack of standards resulted in different types of information being included in reports, which impacted the sustainability scores. It is apparent that, as Morhardt et al., (2002) suggested, there is a gap between the types of information companies feel is important to include in sustainability reports and the types of information the Global Reporting Initiatives deems necessary to include.

This study used a previously developed and tested sustainability scorecard to analyze reports. The scorecard was developed based on the GRI 2000 guidelines, which have since been revised. Using the scorecard based off of the old guidelines could have resulted in different scores for companies that used the latest GRI guidelines to write reports. Additionally, the new

GRI guidelines may have added or deleted some specific sustainability indicators to better reflect information that is deemed necessary for reporting sustainability information. However, the researcher felt that using a previously tested instrument enhanced the validity of the study results and thus determined that using the scorecard developed using the GRI 2000 was appropriate.

Conclusions

Sustainability reporting is limited among companies involved in the agriculture and food supply chain, but it is more prevalent with input suppliers than with food manufacturers and retailers. Companies involved in this study of the agri-food supply chain include information related to all three aspects of the triple bottom line model of sustainability – economic, environment, and social; however, companies put the most emphasis on reporting environmental information. The two input suppliers in the sample had significantly higher general, economic, and total sustainability scores than the other two industry sectors. Stakeholders were addressed to varying degrees in sustainability reports; however, it is evident that companies have recognized a value in discussing stakeholders and stakeholder engagement in sustainability reports.

Sustainability reports from agriculture and food supply chain companies lack information that specifically addresses key reputational elements; however, the act of publishing a report is a strong indicator that companies want to improve or maintain the companies' reputations.

The objectives of this study were to determine the prevalence of sustainability reporting among agri-food supply chain companies; identify, to what extent, the three components of the triple bottom line sustainability model are represented in sustainability reports; determine if/how sustainability reporting differs among sectors of the agricultural supply chain; assess how companies describe stakeholder engagement in sustainability reports; and explore which aspects of reputation are included in sustainability reports. Stakeholder theory and reputation

management are the theoretical frameworks that guided this quantitative content analysis. This study provided an initial description of sustainability reporting among companies in the food system supply chain and found some statistically significant relationships between industry sector and general, economic, and total sustainability scores. Furthermore, this study described recognition of stakeholders in reports, as well as the presence of elements of reputation. This research should be continued by looking at a larger sample of agriculture and food system supply chain companies and using a scorecard developed using the latest GRI reporting guidelines.

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Appendix A - Top 100 U.S. Manufacturers



			All figures are in millions of U.S. dollars				
Ranking	Previous Ranking	Company Name	2013 Food Sales	2012 Food Sales	2013 Total Company Sales	2013 Net Income (-Loss)	2012 Net Income (-Loss)
1	1	Pepsico Inc.	\$37,806	\$37,618	\$66,415	\$6,740	\$6,178
2	2	Tyson Foods Inc. (9/28/13)	32,999	31,614	34,374	778	576
3	3	Nestle (U.S. & Canada)	27,300	27,200	103,536 ^{CC}	11,000 ^{CC}	10,500 ^{CC}
4	4	JBS USA	22,140	20,979 ^F	41,000 ^{CC}	429	351 ^{CC,R}
5	11	Coca-Cola Co.	21,600	21,656 ^R	46,854	8,626	9,086
6	5	Anheuser-Busch InBev	16,023	16,028	43,195	16,518	9,325 ^R
7	6	Kraft Foods Inc.	14,346	14,358 ^R	18,218	2,715	1,642
8	8	Smithfield Foods Inc.	12,531	11,753 ^A	14,000	NA-Private	361
9	7	General Mills Inc. (5/25/14)	12,524	12,574	17,910	1,861	1,893
10	12	ConAgra Foods Inc. (5/25/14)	11,511	9,360 ^R	17,703	315	786
11	10	Mars Inc.	11,000 ^F	11,000	33,000 ^F	NA-Private	NA-Private
12	14	Kellogg Co.	9,716	9,539	14,792	1,808	961
13	9	Dean Foods Co.	9,016	11,462	9,016	819	161
14	15	Hormel Foods Corp.	8,752	8,231	8,752	530	504
15	13	Cargill Inc. (5/31/13)	8,500 ^F	8,500 ^F	136,700	2,310	1,175
16	16	MillerCoors LLC	7,801	7,761	7,801	1,271	1,191
17	21	Saputo Inc. (3/31/14)	7,789	6,063	9,233	653	482
18	17	Pilgrim's Pride	7,500	7,249	8,411	550	174
19	20	Hershey Co.	7,146	6,644	7,146	820	661
20	19	Mondelez International	6,991	6,903	35,299	2,332	1,771
21	18	Unilever North America	6,876 ^{CC,R}	7,111 ^{CC,R}	68,551 ^{CC}	7,245 ^{CC}	5,986 ^{CC}
22	22	Bimbo Bakeries USA	6,101 ^{CC}	6,062 ^{CC}	13,464 ^{CC}	365 ^{CC}	187 ^{CC,R}
23	23	Dr. Pepper Snapple Group	5,997	5,995	5,997	624	629
24	24	J.M. Smucker Co. (4/30/14)	5,611	5,898	5,611	565	460
25	29	Campbell Soup Co. (7/28/13)	4,910	4,110	8,052	449	764
26	38	Constellation Brands (2/28/14)	4,868	2,796	4,868	1,943	388
27	27	H.J. Heinz Co.	4,530	4,570	11,500	NA-Private	1,013
28	25	Maple Leaf Foods	4,406	4,552 ^R	4,406	496	89 ^R
29	26	Land O'Lakes Inc.	4,250 ^{F,M}	4,200 ^F	14,236	306	241
30	31	Perdue Farms (3/31/14)	4,140	3,860 ^F	6,729	NA-Private	NA-Private
31	32	Brown-Forman Corp.	3,946	3,784	3,946	659	519
32	30	Hillshire Brands (6/29/13)	3,920	3,909 ^R	3,920	184	(-20)
33	37	Flowers Foods Inc.	3,751	3,046	3,751	231	136
34	86	Dairy Farmers of America	3,700 ^M	3,500 ^{M,R}	12,800	61	83
35	33	Agropur Cooperative (11/2/13)	3,630	3,640	3,630	54	39
36	66	Lactalis American Group Inc.	3,500 ^F	3,230	3,500 ^F	NA	NA
37	35	E&J Gallo Winery	3,400 ^F	3,400 ^F	3,600 ^F	NA-Private	NA-Private
38	59	Parmalat Canada	3,161	2,848 ^R	3,161	178	NA
39	36	Chiquita Brands Intl.	3,057	3,078	3,057	(-16)	(-405)
40	28	Dole Food Co. Inc.	2,800	4,247	23,800 ^F	NA-Private	42
	61	Prairie Farms Dairy Inc. (9/30/13)	2,800	2,700	2,800	NA	NA
42	42	Sanderson Farms	2,683	2,386	2,683	131	54
43	39	Rich Products Corp.	2,661	2,500 ^F	3,300	NA-Private	NA-Private
44	48	Molson Coors Co. (Canada only)	2,575	2,675 ^R	4,206	565	442
45	72	Beam Inc.	2,558	2,466	2,558	NA	911
46	52	WhiteWave Foods	2,542	2,289	2,542	97	113
47	44	Great Lakes Cheese Co.	2,500	2,250 ^F	2,500 ^F	NA-Private	NA-Private
	39	McCain Foods (6/30/13)	2,500 ^F	2,500 ^F	6,000	NA-Private	NA-Private
49	41	Pinnacle Foods	2,464	2,478	2,462	89	53
	68	Dannon Co. Inc.	2,305	1,800 ^R	2,305	NA	NA
	46	TreeHouse Foods Inc.	2,294	2,182	2,294	87	88
52	80	Colgate-Palmolive Co.	2,211	2,160	17,420	2,241	2,472
53	45	Foster Farms LLC	2,200	2,200	2,200	NA-Private	NA-Private
	49	H.P. Hood Inc.	2,200	2,000	2,200	NA-Private	NA-Private
55	NR	Big Heart Pet Brands (4/27/14)	2,190	1,989 ^F	2,190	(-130)	92



		All figures are in millions of U.S. dollars					
Ranking	Previous Ranking	Company Name	2013 Food Sales	2012 Food Sales	2013 Total Company Sales	2013 Net Income (-Loss)	2012 Net Income (-Loss)
56	47	Borden Dairy Co.	\$2,100 ^F	\$2,100 ^F	\$2,100 ^F	NA-Private	NA-Private
	49	OSI Group	2,100	2,000	6,125	NA-Private	NA-Private
58	54	Schreiber Foods Inc.	2,085 ^F	1,900 ^F	4,500 ^F	NA-Private	NA-Private
59	69	American Foods Group LLC (9/30/13)	2,000	1,500 ^F	2,000	NA-Private	NA-Private
	49	California Dairies Inc.	2,000 ^F	2,000 ^F	2,000 ^F	NA-Private	NA-Private
61	53	Seaboard Corp.	1,959	1,926	6,670	205	282
62	56	Glanbia USA	1,950 ^F	1,800 ^F	8,125 ^F	195 ^F	265 ^F
63	55	Michael Foods	1,948	1,856	1,948	50	30
64	58	Weston Foods	C1,812	C1,765	C33,582	C616	C475
65	61	Associated Milk Producers	1,800	1,700 ^F	1,800	8	NA
66	65	Snyder's-Lance Inc.	1,761	1,619	1,761	79	59
67	61	AdvancePierre Foods LLC	1,750	1,700	1,750	NA-Private	NA-Private
68	43	Keystone Foods	1,718	1,548 ^R	2,500	NA	NA
69	64	McCormick & Co. Inc. (11/30/13)	1,702	1,662	4,123	389	408
70	71	American Crystal Sugar Co.	1,603	1,479	1,603	789	548
71	69	Hilmar Cheese Co.	1,600 ^F	1,500 ^F	1,600 ^F	NA	NA
	73	J. R. Simplot Co. (8/31/13)	1,600 ^F	1,450 ^F	6,000	NA-Private	NA-Private
73	56	Schwan Food Co.	1,575 ^F	1,800 ^F	3,150 ^F	NA-Private	NA-Private
74	60	Cott Corp.	1,535	1,707	2,094	22	52
75	67	Canada Bread Co.	C1,454	C1,479 ^R	C1,454	C158	C71 ^R
76	NR	Cal-Maine Foods (5/31/14)	1,400	1,290	1,441	109	50
77	76	Grassland Dairy	1,350 ^F	1,200 ^F	1,350 ^F	NA	NA
	74	Leprino Foods Co.	1,350 ^F	1,300 ^F	2,700 ^F	NA-Private	NA-Private
79	75	Seneca Foods Inc. (3/31/14)	1,313	1,251	1,340	14	41
80	76	McKee Foods Corp.	1,300 ^F	1,200 ^F	1,300	NA-Private	NA-Private
81	78	Wells Enterprises Inc.	1,200	1,175 ^F	1,200	NA-Private	NA-Private
82	79	Darigold (3/31/14)	1,150	1,110	2,600	NA	NA
83	92	Hearthside Food Solutions LLC	1,050	840	1,050	NA-Private	NA-Private
	81	Reser's Fine Foods	1,050	1,050	1,050	NA-Private	NA-Private
85	85	Post Foods	1,034	959	1,034	10	50
86	84	Lancaster Colony Corp. (6/30/13)	1,014	989	1,165	109	96
87	88	Chobani Inc.	1,000	900 ^F	1,100 ^F	NA-Private	NA-Private
	97	Golden State Foods	1,000	710 ^F	6,000	NA-Private	NA-Private
83		Hain Celestial Group (6/30/13)	1,000	992	1,735	115	79
82		Hostess Brands	1,000 ^F	1,000 ^F	1,000 ^F	NA-Private	NA-Private
NR		Johnsonville	1,000	900 ^F	1,000 ^F	NA-Private	NA-Private
92	90	Agri-Mark	952	880	952	11	15
93	87	Gilster-Mary Lee Corp.	940	920	940	NA-Private	NA-Private
94	91	CROPP Cooperative/Organic Valley	930	857	930	5	NA
95	95	Foremost Farms USA	900 ^F	800 ^F	1,600 ^F	NA	NA
96	94	J&J Snack Foods (9/24/13)	868	831	868	64	54
97	98	Sargento Foods Inc. (6/30/13)	836 ^F	680 ^F	1,200 ^F	NA-Private	NA-Private
98	89	Diamond Foods Inc.	803	899	864	(-163)	(-86)
99	96	MOM Brands	795 ^F	795	795 ^F	NA-Private	NA-Private
100	NR	Boston Beer Co.	794	629	794	70	59

NOTES:

All figures are in millions of U.S. dollars, except those preceded by a large C; those are Canadian dollars. We count only U.S.- and Canadian-manufactured products for the qualified "Food Sales" column; for most international corporations, Net Income represents the global company.

Dates in parentheses (e.g., 6/26/13) are when the fiscal year ended for some companies; all other years are calendar years.

CODES:

CC: Foreign currency was converted to U.S. dollars as of 12/31/13.
 E: Estimate
 M: For Land O'Lakes, Dairy Farmers and other dairy co-operatives, Food figure does not include raw milk transported.
 NA: Not available
 NR: Not ranked previously
 R: Figure is restated from what we carried last year

Appendix B - Top 75 U.S. Retailers

1. Wal-Mart Stores Company News

2. Kroger Company News

3. Costco Wholesale Corp. 2014

4. Target Corp. 2014

5. Safeway Company News

6. Loblaw Cos. 2014

7. Publix Company News

8. Ahold USA Company News

9. 7-Eleven 2014

10. Albertsons 2014

11. C&S Wholesale Grocers 2014

12. H-E-B 2014

13. Sobeys 2014

14. Delhaize America Company News

15. Dollar General Corp. 2014

16. Supervalu Company News

17. Meijer Inc. 2014

18. Wakefern Food Corp. 2014

19. Whole Foods Market 2014

20. BJ's Wholesale Club 2014

21. Trader Joe's Co. 2014

22. Metro Inc. 2014

23. Family Dollar Stores 2014

24. Bi-Lo Holdings 2014

25. Giant Eagle 2014

26. Aldi 2014

27. Associated Wholesale Grocers 2014

28. Hy-Vee Food Stores 2014

29. SpartanNash 2014

30. Wegmans Food Markets 2014

31. United Natural Foods Inc. 2014

32. A&P 2014

33. WinCo Foods 2014

34. Demoulas Market Basket 2014

35. Save Mart Supermarkets 2014

36. Roundy's Supermarkets 2014

37. Stater Bros. Markets 2014

38. Ingles Markets 2014

39. Overwaitea Food Group 2014

40. Unified Grocers 2014

41. Price Chopper Supermarkets 2014

42. Raley's 2014

43. Houchens Industries 2014

44. Tops Markets 2014

45. Grocers Supply Co. 2014

46. Weis Markets 2014

47. Schnuck Markets 2014

48. Associated Wholesalers Inc. 2014

49. Smart & Final 2014
50. Sprouts Farmers Market 2014
51. Alex Lee Inc. 2014
52. K-VA-T Food Stores 2014
53. Associated Food Stores 2014
54. Central Grocers 2014
55. Brookshire Grocery Co. 2014
56. Bozzuto's 2014
57. 99 Cents Only Stores 2014
58. Bashas' 2014
59. Saker ShopRite 2014
60. Superior Grocers 2014
61. Affiliated Foods 2014
62. Affiliated Foods Midwest 2014
63. Big Y Foods 2014
64. Key Food Stores Cooperative 2014
65. The Fresh Market 2014
66. Village Super Market 2014
67. Woodman's Markets 2014
68. Grocery Outlet 2014
69. Piggly Wiggly Midwest 2014
70. Brookshire Brothers 2014
71. Coborn's 2014
72. Bodega Latina 2014
73. Fareway Stores 2014
74. Inserra Supermarkets 2014
75. Marsh Supermarkets 2014

Appendix C - Sustainability Scorecard

Roberts Environmental Center Questionnaire based on GRI 2000 Report Content

0 = not mentioned, 1= anecdotal, or just briefly mentioned, 2= more detail, but characterizing only selected facilities, or using only self-comparison metrics, 3= company-wide absolute or relative metrics that can be compared with others.

	1*. CEO Statement (20 pts)
	1 Summary of report contents (score based on detail of summary, max 4 pts)
	2 Commitment to environmental (2), economic (1), and social (1), goals
	3 Successes (2), and Failures (2) , acknowledgement of
	4 Comparative performance benchmarks (1), past (1), targets (1), industry norms (1)
	5 Challenges (2) and Implications for future business strategy (2)
	2*. Profile of Reporting Organization (45 pts)
	1 Name (1)
	2 Products, services, brands: highlights (2) <i>or</i> complete listing (4)
	3 Countries where operating: list (2), operations characterized by country (2)
	4 Ownership, Stock Exchange Listing (1)
	5 Markets , nature of (2) and Customers (2)
	6 Contacts: gen info (1) <i>or</i> gen environmental (2) <i>or</i> by facility (3) + e-mail addresses (1)
	7 Normalizing factors such as # of employees or net sales (1 pt each for up to four)
	8 Sales/Revenues by country/region (2), products/services (2)
	9 Costs by country/region (2 pts max)
	10 Report coverage by countries (1), products (1), divisions (1), timeline (1) complete
	11 Normalizing factors: report coverage (1), countries (1), products (1), divisions (1)
	12 Reporting period (fiscal, calendar year, etc) (1)
	13 Date of most recent report (1)
	14 Significant changes in size, structure, ownership, products/services. (4 max)
	15 How to obtain reports on economic (1), environmental (1), and social (1) company aspects
	3. Executive Summary and Key Indicators (15 pts)
	1 Environmental Performance Indicators , generally applicable
	2 Environmental Performance Indicators , organization-specific
	3 Economic Performance Indicators
	4 Social Performance Indicators
	5 Integrated Performance Indicators
	4. Vision and Strategy (12 pts)
	1 Environmental challenges
	2 Economic challenges
	3 Social challenges
	4 Sustainability challenges
	5. Policies, Organization, and Management Systems (42 pts)
	1 Policies, mission statements, etc.
	2 Precautionary principle: whether and how addressed
	3 Charters, codes of conduct, voluntary initiatives subscribed to
	4 Organizational structure and responsibilities (2), Key individuals (2)
	5 Status and date by country of above standards
	6 Industry and trade association memberships
	7 Internal programs and procedures

8	Approaches to improving management quality, status of certification of such systems
9	Supply chain outsourcing programs and procedures
10	Location of operation programs and procedures
11	Major stakeholders, basis for identifying
12	Stakeholder consultation, <i>approaches</i> and frequency
13	Stakeholder consultations, <i>types</i> of information generated
14	Stakeholder consultations, <i>uses</i> of information generated
	6. 1-6.36 Environmental Performance: <i>Quantitative Metrics (115 pts)</i>
1	Energy use: Total
2	Electricity by primary fuel source
3	Initiatives for energy efficiency (2) and renewable sources (2)
4	Fuel use: total (2), by type (2)
5	Energy use, non-fuel or electricity (e.g., district heat)
6	Materials use: Total
7	Recycled materials use (2), pre- versus post-consumer use (2)
8	Packaging materials use
9	Hazardous chemicals/materials use
10	Materials replacement programs
11	Biotic products from nature (2), harvesting practices (2)
12	Water use: total
13	Water sources significantly affected (not including effluents)
14	Greenhouse gas emissions: Total
15	Ozone depleting substance emissions: Total
16	Waste disposed of: Total
17	Waste returned to market: Total (recycled, reused, etc.)
18	Waste management: Onsite (2), offsite (2) (includes waste returned to market)
19	Waste to land: total (2,) by material type (2)
20	Waste to other media (type of disposal...incineration, etc.)
21	Emissions to air by type
22	Effluents to water by type and nature (point source vs non-point source
23	Profiles of receiving waters (groundwater, lake, river, etc.)
24	Transport: estimates by transport type (2) and targets (2)
25	Suppliers: environmental performance of
26	Supplier non-compliance incidents
27	Supplier issues (from stakeholders)
28	Products and Services: major environmental issues and impacts
29	Programs and procedures to prevent impacts (stewardship, takeback, life-cycle mgt.)
30	Advertising and labelling practices (economic, environmental and social aspects)
31	Percent product reclaimed after use
32	Land: amount and condition owned (3), amount with impermeable surfaces (1)
33	Habitat changes due to operations (2), Amount of habitat protected or restored (2)
34	Native ecosystems and species (protection/restoration objectives, programs, targets)
35	Impacts on protected areas (parks, reserves, national heritage sites)
36	Penalties for non-compliance (nature and magnitude)
	6. 37-6.59 Economic Performance: <i>Quantitative Metrics (69 pts)</i>
37	Net profit/earnings/income
38	Earnings before interest and tax
39	Gross margin (net sales minus costs)

40	Return on average capital employed
41	Dividends
42	Geographic distribution of 6.37-6.41
43	Ratio of market capitalization to book value
44	Investments in human capital (employee training, community education)
45	Research and development investments
46	Other capital investments
47	Debt/equity ratio
48	Wages (expenses by country)
49	Benefits (expenses by country)
50	Labor productivity levels and changes by job category
51	Taxes paid
52	Community development jobs by type and country
53	Charitable donations
54	Supplier economic performance
55	Supplier economic non-compliance incidents
56	Outsourced operations (nature and locations)
57	Outsourced costs of goods and services
58	Performance with suppliers (meeting payment schedules, etc.)
59	Economic impacts of goods and services
	6. 60-6.96 Social Performance: Quantitative Metrics (111 pts)
60	Employee retention rates
61	Ratio of jobs offered to jobs accepted
62	Employee orientation to organizational vision , evidence of
63	Employee role in shaping management decision making , evidence of
64	Ranking of organization as an employer , both internal and external sources
65	Job satisfaction
66	Reportable H&S cases
67	Injury, lost day, and absentee rates
68	Investment per worker in illness and injury prevention
69	Ratio of lowest wage to national legal minimum
70	Ratio of lowest wage to local cost of living
71	Health and pension benefits
72	Percentage women in management
73	Discrimination litigation against company (frequency and type)
74	Mentoring programs for minorities
75	Training budget : ratio to annual operating costs
76	Worker participation : programs to foster it in decision making
77	Education of workforce (average years)
78	Child labor non-compliance incidents
79	Awards for child labor practices (third party)
80	Forced labor grievances (number of incidents)
81	Forced labor grievances (number of incidents from suppliers)
82	Grievance procedures : percentage of facilities and countries with these in place
83	Anti-union practices : number and types of legal activities
84	Union organization activities : organizational responses to
85	Use of human rights screens in investment
86	Systematic monitoring of organizational human rights practices

	87	Human rights violations: number alleged, organizational position and response
	88	Indigenous representation: in areas where appropriate
	89	Human rights protests: number and cause of
	90	Security and human rights in country risk assessment and facility planning: examples
	91	Remuneration/rehabilitation of victims of security force action
	92	Supplier performance relative to social components
	93	Supplier social non-compliance: number and types of incidents
	94	Supplier labor conditions: frequency of monitoring
	95	Social issues associated with use of products and services
	96	Customer satisfaction levels
0	0	General Organizational (Max score = 134)
0	0	<i>Percent</i>
0	0	Environmental Performance Indicators (Max score = 115)
0	0	<i>Percent</i>
0	0	Economic Performance Indicators (Max score = 69)
0	0	<i>Percent</i>
0	0	Social Performance Indicators (Max score = 111)
0	0	<i>Percent</i>
0	0	Normalized Total ((Total score/429)*100)