Gordon Institute of Business Science
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ADOPTING CORPORATE SUSTAINABILITY STRATEGIES TO SUPPORT THE TRIPLE BOTTOM-LINE:

The case of post-harvest grain losses in the South African grain industry.

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ABSTRACT

The concept of sustainability, with the intention of ensuring humanity's long term well-being, drives many industries in today's competitive world. The importance of sustainability, as the core competency of many corporate strategies, requires organisations and strategic decision-makers to consider the 3Ps (people, profit and planet) rather than focus, to the exclusion of all else, on profitability for the success of their firms. Whilst food security remains a global sustainability challenge, post-harvest grain losses account for the majority of grain losses occurring in developing countries. This study intended to explore the interplay between the reduction of post-harvest grain losses and the sustainability strategies of agri-grain firms to, *firstly*, identify enablers and inhibitors to implementing corporate sustainability strategies of these firms and, *secondly*, establish a comparison between the reduction of post-harvest grain losses and other enablers influencing the triple bottom-line in the grain industry.

Qualitative, exploratory research methods were adopted to gain new insights into corporate sustainability strategies within agri-grain firms and to identify the focus areas, measurement approaches, enablers and inhibitors that drive sustainability within these firms. A total of 26 semi-structured, in-depth interviews were conducted with executive and senior managers of agri-grain firms in the grain handling, grain storage, grain processing and grain trading sectors as well as relevant non-profit organisations in the grain industry. Collected data were transcribed by the researcher and two qualitative analyses approaches, *Summative Content Analysis* and *Thematic Analysis*, were applied in two phases to ensure a thorough analysis and thus enhance the trustworthiness of the study.

This study contributes to literature by ascertaining whether agri-grain businesses share a common understanding of corporate sustainability strategies whilst, in addition, identifying the impact of enablers and inhibitors on the sustainability of the firms, and thus the grain industry as a whole. The study also highlights the importance of *sustainability* thinking when attempting to reduce post-harvest grain losses and support the Sustainable Development Goal of *Zero Hunger*, as a global challenge. In an effort to aid industry business leaders, managers and stakeholders in their strategic decision-making, as well as the sustainability management and development of their firms, a model is presented to support overall sustainability in the grain industry. The hope is that agri-grain firms' pursuit of sustainability, will consequently contribute to worldwide food security.

KEYWORDS

Sustainability, corporate sustainability strategy, triple bottom-line, agribusiness, grain industry, post-harvest grain losses.

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other university. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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CHAPTER 1: INTRODUCTION TO THE RESEARCH PROBLEM

1.1 INTRODUCTION

Attentiveness to and appreciation of sustainability, in general, and corporate sustainability strategies, in particular, have increased tremendously within various industries in today's competitive global market. Organisations need to constantly develop strategies that ensure a long-run sustainable success and thus create shared value in response to the growing demands of their customers, shareholders, and all other various stakeholders. Brundtland at the UN-sponsored World Commission on Environment and Development (WCED, 1987, p. 23), defined corporate sustainability as "*the development that meets the needs of the present without compromising the ability for future generations to meet their own needs*". The environmental, societal and the economic landscapes affected by macro politics in the world has changed remarkably since then (Sneddon, Howarth & Norgaard, 2006).

These changes require strategic managers to move beyond merely ensuring the profitability of their firms. They are urged to stretch their commitments and responsibilities to include social and environmental contributions and issues (Hubbard, 2009). Since previously confirmed by Jeurissen (2000), as per the emergence of the triple bottom-line by Elkington in 1997, who established the consideration of the 3Ps (people, profit and the plant), and subsequently researched by Dyllick and Muff (2015) who indicated that sustainability strategies are required if organisations wish to remain competitive through tangible and intangible benefits, many studies have been conducted to explore the implementation of sustainability developments within various industries.

It has become essential for organisations to comply with local and global economic, social and environmental legislation to thus better position themselves in local and international markets. Additionally, and as explained by Lloret (2016), the competitiveness of firms is substantially dependant on their positioning within the industry and their relationships with their customers, competitors, suppliers and all other stakeholders. Successful companies, hence, are the ones who manage to constantly generate value and develop the strategies that drive sustainable practices into the future.

1.2 PROBLEM IDENTIFICATION

While sufficient literature is lacking to indicate how organisations should create value for their stakeholders by embracing sustainability, as indicated by Bansal (2002, p. 131), *"there is a large gap between how society articulates the need for sustainable development and how organisations practice it*", industries where stakeholders do show a growing attentiveness to sustainability require further investigation. To support the shift towards corporate sustainability and influence strategic decision-making in various industries, a closer collaboration between academics and businesses, as well as practitioners, is needed to establish appropriate tools that can be used to reconcile business and academic dilemmas, thus balancing the various interests of the involved stakeholders (Hörisch, Freeman & Schaltegger, 2014).

Dyllick and Muff (2015) state that there are several hurdles to the execution of sustainability strategies that should be understood explicitly by strategic decision-makers of organisations. There is a fundamental need to explore the *enablers* and *inhibitors* which drive these strategies in businesses and industries which differentiate themselves by contributing to sustainability development. Beckmann, Heilscher and Pies (2014), supported this notion and indicated that *how* corporates address sustainability challenges and assess their performance in attaining the three dimensions of sustainability in their strategic management, warrants further exploration.

Whilst most studies on sustainability have focused on corporate social responsibility as a differentiating element in strategic management, limited research has been done on how managers should make socially responsible decisions while sustaining, and improving, their firms' competitive strategy (Mc Williams, Parhankangas, Coupet, Welch & Barnum, 2014). Furthermore, as described by Montiel and Delgado-Ceballos (2014), it is not yet explicitly understood if these sustainability dimensions (including economic, social and environmental aspects) should be afforded equal attention, or be evaluated with the same weight, by strategic management practitioners.

After Garvare and Johnson (2010, p. 741), who indicated that the interplay between "*the sustainability management, stakeholder theory, and the quality management*" could still be developed, Starik and Kanashiro (2013) recognised that most management theories do *not* comprehensively focus on sustainability and do *not* systematically approach sustainability challenges. Accordingly, with sustainability management becoming increasingly popular among corporations, the "*big disconnect*" between management

practitioners and academic scholars, as indicated by Dyllick and Muff (2015, p.1), is becoming increasingly apparent.

The application of the notion of *sustainability* in food supply chain management, led Sgarbossa and Russo (2016), to explain that the development of new models and the provision of in-depth insights into integrated food supply chains, in relation to environmental and societal practices, are required to: recover from food wastes, reduce food losses and close supply chain loops. Furthermore, they added that since food losses and waste have extraordinary economic, social and environmental implications, particularly if one considers the worldwide poverty rate, strategic managers in the relevant industries need to be mindful of the scarcity of resources and thus develop strategies that ensure a sustainable supply chain management.

1.3 RESEARCH CONTEXT

With the rising significance of the importance of sustainable development in various industries, it is crucial to explore the nature of sustainability strategies and to examine the extent to which these strategies are influencing companies' performances at the economic, environmental and societal level (Chang, Zuo, Zhao, Zillante, Gan & Soebarto, 2017). Since different economic, social and environmental policies are impacting upon the sustainability development of firms, a need has arisen to ascertain the balance between these three dimensions. Firms have thus shifted their focus from exploring *what sustainability means* to *how to develop strategies* that address sustainability requirements in the long-run.

This need has been highlighted by Olukunle (2017), in reference to agricultural value chains, where multiple approaches facilitating various players should be captured adequately towards the sustainable development of firms. In particular, considering the significance of food losses worldwide and the many ensuring negative economic, social and environmental impacts on sustainable development of agribusiness firms, the development of strategies that cover the three pillars of *people, profit* and *planet* should be noted as a high priority (Frater & Franks, 2013). Moreover, while food security remains a global challenge, post-harvest food losses form the majority of losses which occur in, mainly, developing countries.

Thus, a fundamental need exists to contribute to the reduction of post-harvest losses, especially post-harvest losses of grains and/ or cereals, as these main agricultural commodities form the staple food of most developing countries. Although many studies have investigated the improvement of yield, utilisation of lands, or even population control to ensure food security, the issue of *post-harvest losses* has not received sufficient attention by scholars, even though it has better potential to result in higher returns compared to yield optimisation (Kumar & Kalita, 2016).

Therefore, this study focused on post-harvest grain losses within the South African agri-grain sectors which provide the staple food for the country. The executive and senior managers tasked with strategic decision-making in these sectors, as described by Boehlie, Roucan-Kane and Bröring (2011), need to monitor the business climate, anticipate the impact of improbable situations on the industry structure, reassess their firm's strategic positioning and prepare for future challenges. Thus, the adoption of corporate sustainability strategies that can drive the multiple dimensions of sustainability in a balanced way is an underlying principle.

The other reason for choosing the aforementioned context, which has also been supported by Mc Williams et al. (2014), is to explore the determination of trade-offs between efficiency, costs and the reduction of losses by senior managers in agri-grain firms, thus signifying the incorporation of corporate socio-environmental responsibilities which reach beyond profit maximisation. Consequently, Dyllick and Muff (2015), insisted on the introduction of *sustainability* into the governance structure of food systems. It is important to integrate sustainability objectives into the planning and reporting cycles of the involved organisations to ensure that goals are achieved through accountability and innovative approaches to thus minimise food losses. This study aims to contribute to the development of this concept.

1.4 RESEARCH PURPOSE

With regards to *sustainability,* most scholars have addressed issues surrounding corporate social responsibility (Margolis & Walsh, 2003; Orlitzky, Schmidt & Rynes, 2003; Mc Williams & Siegel, 2011; Mc Williams et al. 2014). This study adopted a more comprehensive approach to corporate sustainability in that it attempted to explore and unpack those elements which strategic decision-makers should consider when ensuring the sustainability of their firms within the chosen context. Concurrently, this study aims to

address the literature gap by clarifying the main *enablers* and *inhibitors* in the execution of the sustainability strategies to thus ensure the competitiveness of organisations to manage their triple bottom-line (Mc Williams et al., 2014).

The purpose of this study is to thus: *firstly,* establish a common understanding of the corporate sustainability strategies, *secondly*, understand the focus dimensions of these strategies and how their impact is measured as well as the enablers and inhibitors that drive these strategies and, *lastly*, explore the interplay between the post-harvest grain losses and the sustainability of the grain industry in South Africa. The adoption of qualitative methodology, as the chosen research design for this study, will help ascertain the impact of corporate sustainability strategies on the sustainability of the grain industry. The development of a model will further contribute to the reduction of post-harvest grain losses through pursuing sustainability.

This study is significant because it will provide an in-depth understanding as to corporate sustainability strategies and the dimensions of interest to strategic decision-makers of agribusiness sectors who are concerned about the sustainability of their firms, as well as satisfying their various stakeholders. In addition, the intention is to address the gap in strategic literature with regards to practical insights into balancing the triple bottom-line approaches (Mc Williams et al., 2014).

Bansal (2002) previously supported this intention by indicating that to bridge the sustainable development gap between academia and practitioners, the principles of sustainable development need to be translated into normative business practices. She further elaborated that sustainability should be perceived as the standard of organisations and that better measurement tools should be developed to evaluate this standardisation. This study aimed to contribute to this purpose through an exploration of collective benefits gained by complying with the sustainability development principles in comparison to individual costs among agri-grain firms.

1.5 RESEARCH PROBLEM

Following the identification and explanation of the problem within the context of this study, as well as the purpose of the study, certain problems have been identified. These problems will be investigated, in some detail, in the literature review. Finally, the research questions and the exploration phase of the study will be presented.

Main problem

To establish whether there is a common understanding of corporate sustainability strategies, the focus dimensions, and how the impact of these strategies should be measured among agri-grain firms in South Africa.

Sub-problem 1

To identify the enablers and inhibitors to the execution of corporate sustainability strategies, as adopted by agri-grain firms in South Africa.

Sub-problem 2

To identify the interplay between the reduction of post-harvest grain losses and the sustainability of the grain industry through establishing a comparison between the reduction of post-harvest grain losses and other enablers influencing the triple bottom-line of the grain industry.

1.6 CONCLUSION

With increasing attention being paid to food security and the development of new business models to cultivate closed loops in food supply chains to decrease food losses (Sgarbossa & Russo, 2016), the results of this research will contribute towards corporate sustainability in agri-grain strategies. Ultimately, the aim is that these results would add practical value to the understanding of corporate sustainability strategies and thus help ensure food security by reducing post-harvest grain losses. In addition, further insights will be provided into other possible enablers of sustainability, thus supporting the people, profit and planet of the studied industry.

Chapter 2 presents the literature review of this study with its focus being on the relevant sustainability topics that drive corporate sustainability strategies in agribusiness sectors, including the grain industry. This research aims to benefit managers and leaders of agri-grain organisations as well as the academia by providing practical insights which have been developed through a combination of current theories and new insights gained from the study.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

This section will present a literature review related to the major themes of this study, namely: sustainability, triple bottom-line, corporate sustainability, stakeholder theory, supply chain management and the agribusiness, including the grain industry. These themes were researched to enable a discussion of the outlined problem statement which, in turn, would provide insights into the distinct theories relevant to corporate sustainability and sustainability strategies in agribusiness. This process aligns with the aim of the research which is to explore the link between corporate sustainability strategies in agri-grain companies and specifically how the grain supply chain is managed with regards to post-harvest grain losses.

2.2 CORPORATE SUSTAINABILITY STRATEGY

As indicated by Montiel and Delgado-Ceballos (2014), these days, when searching companies' websites or reporting, there is a clear and significant increase as to the number of references to "Sustainability", "Corporate Sustainability" and "Sustainable Strategies". With this increased focus on corporate sustainability (CS) by business, academics and management scholars worldwide, and since CS is still a relatively new concept, there is a crucial need to manage and measure the impact of corporate sustainability strategies and address the level of pressure, which both society and businesses place, on environments.

2.2.1 Sustainability and the triple bottom-line

The publication of "Our Common Future" in 1987, which was considered a breakthrough in sustainability thinking and the promotion of economic development at global, national and local levels to guarantee "*the security, well-being, and very survival of the planet*" by Brundtland at the UN-sponsored World Commission on Environment and Development (WCED, 1987, p. 23), heralded the revolution in sustainability rationale and practices.

A primary definition of sustainability, which originated at the same time, from the World Commission on Environment and Development (1987) stated "*sustainable development meets the needs and aspirations of the present without compromising the ability of future*

generations to meet their own needs" (WCED, 1987, p. 23). Shrivastave (1995) explained that to achieve competitiveness and quality environmental management, sustainability with environmental prominence is required. Concurrently, Starik and Rand (1995) defined sustainability as the capability of one, or more, institutions to continue and develop in the long-run. In 1998, Elkington (1998, p. 37) described sustainability as a "2+2=5 (or even 50) game".

Szekely and Knirsch (2005) presented a more comprehensive explanation of sustainability referring to the proper balance between economic, social and ecological intentions in which growing the economy, looking after shareholder value, managing relationships with customers and providing quality products and services are sustained. Adding to that, Markevich (2009, p. 13-14) indicated that for sustainability to occur, companies should combine the six positions of "*regulatory compliance, incremental mitigation, value alignment, whole system design, business model innovation, and mission transformation*".

One year later, Pfeffer (2010, p. 35), stipulated that to achieve sustainability "*firms need to encompass a focus on human as well as physical resources*". Peloza, Loock, Cerruti & Muyot (2012) added that, according to Global Reporting Initiative, sustainability is not just targeting the munificence, or attention to environmental contaminations, but also addressing an extensive range of societal, environmental and regulatory metrics. Therefore, current economic development patterns in all industries should not happen at the cost of demolishing ecological systems nor through unethical social activities.

Consequently, and relevant to the sustainable development concept that will be explained further, the Triple bottom-line (TBL), indicated by Hammer and Pivo (2016), refers to the economic, environmental and social value of an investment. New versions of partnership/s, in various dimensions, are required significantly and collectively influence the triple bottom-line results since this cannot be achieved individually (Dyllick & Muff, 2015). Sustainability, and TBL, will be explained to help in analysing those companies which are adopting sustainability as an organisational strategy. However, the Stakeholder theory will also be elaborated on further in the next sections as an alternative to analysing corporate strategies which do not ascribe to sustainability as a strategic pillar (Touboulic, Chicksand & Walker, 2014).

2.2.2 Corporate Sustainability

Nowadays, organisations are increasingly evaluated, both internally and externally, according to the level of their corporate sustainability management. This level should, in fact, represent the multiple dimensions of social, environmental and economic performances (Ozanne et al., 2016). Thus, and by taking into account that corporates have sufficient resources to efficiently contribute to sustainability issues when compared to various social actors, corporate executives and strategic managers need to address social and environmental concerns relevant to their businesses. They need to make responsible decisions in a careful manner which reflect the interests and benefits of their corporations as well as their stakeholders (Dyllick & Muff, 2015).

Since 1995 there have been various research studies on corporate sustainability (CS) and other relevant topics such as: corporate social responsibility, environmental performance and environmental strategies. These research studies have articulated several definitions, theories and measurements which have been adopted by strategic managers, practitioners and academia in the corporate sustainability era. The variances in literature targeting scholars vs. CS practitioners, or CS professionals, demonstrate that the CS field is still evolving (Montiel & Delgado-Ceballos, 2014). Therefore, in the light of evidence mentioned by CS scholars who confirm this ambiguity and lack of clarity in definitions, the need exists to establish a common understanding of *corporate sustainability* (Reinecke, Manning, & von Hagen, 2012; Valente, 2012; Montiel & Delgado-Ceballos, 2014).

2.2.2.1 Corporate Sustainability Definitions

As indicated by Montiel and Delgado-Ceballos (2014), there have been various approaches in the literature to define and measure corporate sustainability (CS) and related topics such as corporate social responsibility, triple bottom-line and corporate sustainable development. So far, no single standard definition has been formulated (Hart & Dowell, 2011; Hart & Milstein, 2003). However, this can be a clear indication of the business drivers and influences behind the revolution of the CS domain and practices and thus a reason for more collaborations among various national and international groups.

The early definitions for CS in management literature hail from 1995 with scholars introducing "*ecological sustainability*" (Shirvastave, 1995; Starik & Rands, 1995). This idea was further perpetuated by Gladwin, Kennelly and Krause (1995) who described

sustainable development as a process of achieving human development through inclusiveness, connectedness, equity, prudence and security.

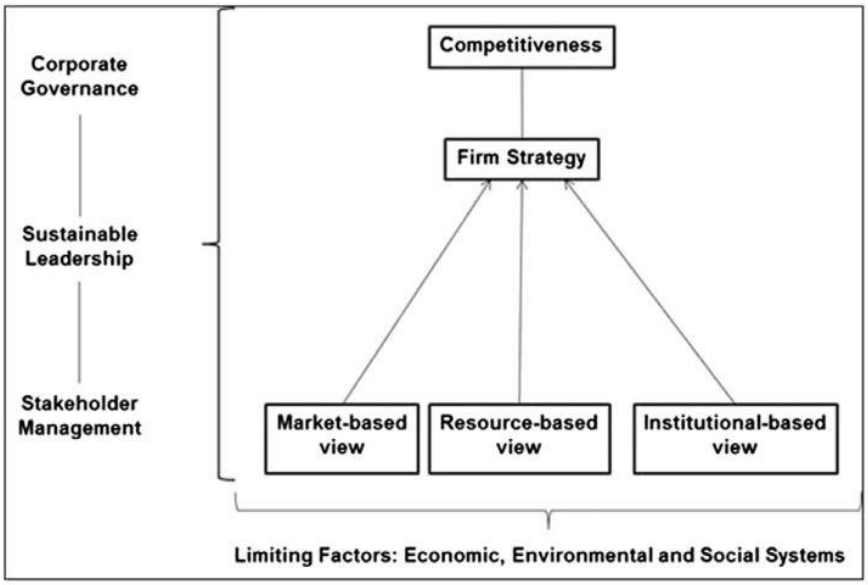
Accordingly, Banerjee (2003), emphasised that the management of sustainable development should be through *"ethnocentric, capitalistic notions of managerial efficiency or sustainable capitalism*". Two years later Bansal (2005, p. 198) defined corporate sustainable development explicitly as *"a tri-dimensional construct based on economic prosperity through value creation, social equity through corporate social responsibility, and environmental integrity through corporate environmental management*".

In 2006, Neubaum and Zahra, (2006, p. 121) defined CS as "*the ability of a firm to nurture and support growth over time by effectively meeting the expectations of diverse stakeholders*". While many scholars and practitioners define CS in conjunction with Sustainability Development which is, in fact, rooted in the publication of "Our Common Future" (1987) as a revolutionary sustainability rationale which initiated Sustainable Development (SD), Sneddon, Howarth and Norgaard (2006, p. 255) refer to Brundtland's definition and defined the SD as "*invoking the needs of future generations counterbalanced to the current unmet needs of much of the world's population*". They further elaborated that sustainable development views prosperity apprehensively. Fairness and morality, and hence the pursuit of humanity's well-being, equitable distribution of resources and socio-ecological integrity are considered paramount whilst the analysis of sustainability dilemmas remain a significant challenge.

Lloret (2016, p. 419), in alignment with Bansal's work (2005), explained corporate sustainability as *"the possibility to create value through executed strategies that consider economic, environmental, and social restrictions*". Further, he developed a corporate sustainability model to capture value while a firm is restricted by limiting economic, environmental and social factors. He argues that if an organisational, or corporate, strategy was to address these constraints, three main elements are required namely: competitive strategy, vision and institutional capacity.

This notion has been argued by other scholars as well who state that if an organisation incorporates these three elements effectively in its business strategy, it could successfully achieve its targets (Peng, Sun, Pinkham & Chen, 2009). In addition, Lloret (2016) adds sustainable leadership and corporate governance to address stakeholders' expectations and argues that if the strategy consolidates all these components collectively, it would create a firm that would react quicker to environmental constraints as well as manage risk

more efficiently, thus generating long-term value. Figure 1 illustrates the model developed by Lloret (2016).



- Figure 1: A conceptual model of corporate sustainability
  (Source: Lloret, 2016, p. 420)

In Lloret's view (2016), the integration between market-based, resource-based and institutional-based views with stakeholder management, sustainable leadership and corporate governance drive competitiveness. Pogutz and Winn (2016) argued that for corporate sustainability strategies to fulfil communities' needs, sustainable and meaningful socio-ecological processes and practices should be considered.

2.2.2.2 Corporate Sustainability Dimensions

Recently, scholars have published more articles focusing on sustainability dimensions and the balance between the 3Ps (people, profit and the planet) (Aragon-Correa, 2013; Starik, 2013). While some scholars have defined CS only in terms of its environmental dimension (Marshall & Brown, 2003; Bansal & Gao, 2006; Etzion, 2007), others have focused on corporate social responsibility, or the social dimension (Margolis & Walsh, 2003; Orlitzky, Schmidt & Rynes, 2003). Some scholars have elaborated on both societal *and* environmental aspects (Hall & Vredenburg, 2003).

However, Bansal (2005) initiated the new theoretical construct by consolidating corporate social responsibility, environmental management and value creation. Furthermore, and to

balance the three CS pillars, Szekely and Knirsch (2005) enlisted ten other dimensions that should be embraced by CS. These dimensions are *"economic growth, shareholder value, prestige, corporate reputation, customer relationships, product quality, ethical business practices, sustainable jobs creation, value creation for the stakeholders, and attention to the need of the underserved".* The majority of scholars agreed on the definition which addresses the social, economic and environmental dimensions or the 3Ps (people, profit and the planet (Montiel & Delgado-Ceballos, 2014, p. 8).

Lloret (2016, p. 419) explained this notion, as per definition of sustainability, in which the long-term component becomes significantly important as sustainability refers to *"continuity".* However, the need for a more comprehensive definition of sustainability exists as corporate sustainability includes the dimensions of: environmental endurance, social continuity and economic strength. With growing attention being lavished on the balance amongst the three dimensions of corporate sustainability performance, which is influenced by a wide range of stakeholders and policies, the focus has shifted from *what approach to acquire* to *how to develop the appropriate strategies that can drive the multiple performances* (Chang et al., 2017). Consequently, and as suggested by Epstein and Roy (2001), senior managers in corporations should formulate a strategy that considers multiple dimensions and analyses levels, rather than using only one framework.

2.2.3 Business Sustainability and Sustainability Measurement

Shirvastava (1995) indicated that for corporates to achieve sustainability, environmental management, ecological competitiveness, technology and corporate social responsibility need to be integrated. Szekely and Knirsch (2005, p. 628), defined sustainability for businesses as "*sustaining and expanding economic growth, shareholder value, prestige, corporate reputation, customer relationships, and the quality of products and services as well as adopting and pursuing ethical business practices, creating sustainable jobs, building value for all the stakeholders and attending the needs of the underserved."*

Subsequently, the Network for Business Sustainability (2012) defined business sustainability, or managing the triple bottom-line, as *"a process by which firms manage their financial, social, and environmental risks, obligations and opportunities. The three impacts that are referred to as people, planet, and profits*". Thus, the value proposition of businesses has been extended to include their performance delivery of the triple bottom-line or people, profit and the planet (Dyllick & Muff, 2015, p. 9).

To support the incorporation of corporate social responsibility into a differentiation strategy, strategic decision-makers need to have insights and tools that assist them in managing the triple bottom-line and balancing various stakeholders' expectations (Mc Williams et al., 2014). TBL, a confounding concept for some organisations, implies that an organisation should measure its performance in relation to the various stakeholders with whom it has direct, indirect, or transactional relationships including local communities, governments and societies. Therefore, firms' duties extend far beyond economic aspects. Socio-environmental measures of performance should be added to typical financial measurements (Hubbard, 2009).

While the definition of sustainability, in terms of business and corporate relationships became more explicit, Montiel and Delgado-Ceballos (2014) indicated that there is no standardised method to measure corporate sustainability. They further explained that although there are some agreed upon measurements for environmental sustainability (Walls, Berrone & Phan, 2011; Delmas, Etzion & Nairn-Birch, 2013), it is still unsure how these social and economic dimensions should be measured in parallel. There are some examples in literature with regards to CS measurements such as: DJSI (Dow Jones Sustainability Index), GRI (Global Reporting Initiative), KLD (Kinder, Lydenberg, and Domini) Indices, Bansal (2005), and SBSC (Sustainability Balanced Scorecard). However, according to the study by Montiel and Delgado-Ceballos (2014), the three dimensions of CS have been measured differently by DJSI, GRI and Bansal (2005) through defining and measuring various elements towards evaluating the performance of each dimension.

The Kinder, Lydenberg, and Domini (KLD) as an independent rating services, assesses the relationship between social, environmental and economic fulfilment by measuring seven dimensions namely: employee relations, diversity, human rights, community relations, corporate governance, product quality and safety and environmental measurements (Jayachandran, Kalaignanam & Eilert, 2013; Waddock & Graves, 1997). The DJSI ascertains the sustainability of leaders' performance by measuring five elements in the *economic dimension* namely: corporate governance, codes of conduct, risk and crisis management, customer relationship management and innovation management and for the *social dimension*: human capital development, talent attraction and retention, occupational health and safety, stakeholder management and social reporting. The elements measured in the *environmental dimension* include: environmental management system, environmental performance, climate strategy, product stewardship and biodiversity (Montiel & Delgado-Ceballos, 2014).

GRI, with the intention to systematise sustainability reporting, also measures various elements under the three dimensions of CS. The elements measured under the *economic dimension* include: market presence (market share), economic performance and indirect economic impacts. The elements measured for the *social dimension* are: labour practices and decent work, society, human rights and product responsibility. The elements measured in the *environmental dimension* are: materials, energy, water, biodiversity, emissions, effluents and waste, transport, product and services as well as overall compliance (Montiel & Delgado-Ceballos, 2014).

Moreover, Bansal (2005) considers six measurement elements to ascertain performance, six tools to measure social performance and ten elements to measure environmental performance. The economic elements, according to her, include: established government relations, reduced costs for inputs, reduced costs for waste management at the same level of outputs, used waste for revenue, differentiated product on environmental performance and created spin-off technologies. The social performance measurement, is according to the measurement of considered stakeholder interests, include: communicated government risk, improved safety and health issues, protected local communities' rights, improved facilities' visual aspect and funded local community projects. In addition, environmental elements which should be measured include: reducing products' harmful environmental impacts, reducing environmentally damaging inputs, used inputs from renewable sources, reducing environmental impacts of processes, reducing operations in environmentally sensitive locations, reducing the likelihood of environmental accidents, reducing waste, re-use of waste, disposing waste and handling toxic waste responsibly.

With the development of the triple bottom-line concept (3Ps), strategic managers can no longer ignore social and environmental considerations for the sake of profit maximisation. The use of tools, like the Sustainability Balanced Score-card (SBSC) introduced by Figge, Schaltegger and Wagner (2002), has also increased. Nowadays, strategic management includes the assessment of multiple stakeholders' interests in the decision-making process. SBSC would be a useful tool in incorporating sustainability into a company's strategic management system.

Although many companies have adopted various social and environmental management systems, these systems might have not yet be fully integrated into the firm's general management system and hence the economic contribution of the environmental and social impacts remain uncertain and incalculable. The purpose of SBSC is to equip sustainability management with a single strategic management tool which incorporate the three pillars

of sustainability (Figge, Hahn, Schaltegger & Wagner, 2001b). It is very important that for corporations firstly focus on possible opportunities to improve the three dimensions of sustainability simultaneously, or design processes to achieve this aim. Thus, the need exists for a comprehensive tool that can facilitate this integration and the implementation of social and environmental soft objectives into daily business activities and, in addition, ensure the continuous measurement and monitoring of the economic, environmental and social performance/s (Figge et al., 2002).

2.3 SUSTAINABILITY MANAGEMENT

The core of sustainability management, as per the explication presented by Dyllick and Muff (2015, p. 2) is *"the role of business in making our world a more sustainable place*". Sustainability management is to "*change the rules of the game*" and thus create an enabling environment where profitable and sustainable solutions can be produced. This shift requires a collective engagement of the three dimensions, rather than only addressing *economic concerns*, as well as focus on value creation for the 3Ps (people, profit and planet rather than only for shareholders.

Sustainability management should focus on the creation of positive impacts on societal and planetary issues while maximising profit for businesses. To overcome sustainability management challenges and achieve the "*common good*" which will benefit businesses, societies and the planet as a whole, the need exists to develop new strategies that will create shared value in a profitable, transparent and sustainable manner towards the common good (Dyllick & Muff, 2015, p. 11).

Porter and Kramer (2011, p. 65) defined shared value as *"policies and practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which operates*". It should be noted that while most of the discussions around sustainability, and sustainability development, occur on a macro level, business sustainability, or sustainability management, is mainly positioned on the micro level of firms. However, there is an interplay between the two approaches (Whiteman, Walker & Perego, 2013; Dyllick & Muff, 2015).

In addition, and since stakeholder theory contemplates the notion of sharing value beyond an exclusively monetary value, Starik and Kanashiro (2013) supported the stakeholder theory in alignment with their explanation of sustainability management which emphasises

the formulation, implementation and evaluation of actions and decisions that are socially, environmentally and economically sustainability related.

The significance of sustainability management in addressing short- and long-term challenges have also been substantiated by Hörisch, Freeman and Schaltegger (2014). Since the vision of sustainability in a corporate context should incorporate societal and ecological dimensions, alongside business profitability, sustainability management should aim to overcome constraints and engage with stakeholders. Subsequently, Lloret (2016), in his model of corporate sustainability, stipulated that sustainability management within corporates should ensure long-term competitiveness and incorporate the elements of a market-industry view, a resource-based view and an institutional-based view with stakeholder management, corporate governance and sustainable leadership.

Salzmann, Ionescu-somers and Steger (2005), confirmed the lack of research in the area of corporate sustainability management and indicated that there is an inadequate understanding of business logic and/or business cases to adopt corporate sustainability. Thy added further that the lack is evident in *"sector-specific research"* as well as in *"cross-industry, cross-country or cross-functional"* comparative studies. However, the reason might be the complex nature of sustainability management which varies across various industries and countries. Furthermore, the economic viability of corporate sustainability strategies might only be proved in the long run (Salzmann, 2005, p. 33).

2.3.1 Sustainability Strategies, Enablers and Inhibitors

Porter (1996) defined strategy as a theory that can create competitive advantage. Thereafter, Thompson, Peteraf, Gamble and Strickland (2012), explained that a strategy consists of competitive actions that grow and develop a business, fulfil customers' requirements and compete successfully towards organisational goals. Thus, organisations need to know how to capture value sustainably through strategies that complement with the firm's goals and make it competitive in the long-run (Lloret, 2016).

Bansal (2005, p. 198) explicitly highlighted the need to understand the forces that shape and impact corporate sustainability strategies targeting *"environmental integrity through corporate environmental management, social equity through corporate social responsibilities, and economic prosperity through value creation*". It is thus fundamental

for strategic managers to move beyond technical and economic efficiency to meet the multiple demands set forth by firms, communities and environmental duties. Although the three dimensions of TBL might not be equally important for organisations, executive management should have a clear view on how to balance the trade-offs between profits, people and the planet (Mc Williams et al., 2014).

Similarly, Hart and Dowell (2011) substantiated that sustainability strategies should link these three dimensions in a balanced manner which benefits profitability, social responsibility and limits the lesser environmental threats. Dyllick and Muff (2015), however, stressed the importance of overcoming sustainability challenges at the strategic level of organisations. Hence, for businesses and corporates to become more sustainable, a radical strategic approach, through the design of innovative solutions focused on addressing sustainability constraints while creating economic value, is fundamental. The execution of these strategies necessitates a profound shift "*from inside-out to outside-in*" within organisations (Dyllick & Muff, 2015, p. 13).

Accordingly, Chang et al. (2017) noted that the evolution of sustainability thinking within firms has given rise to several theories and definitions, the ultimate intention of which is to fulfil the three overarching purposes of: poverty elimination, change in unsustainable patterns of production and consumption as well as ecosystem protection.

Elaborating on balancing the environmental impact of sustainability, Hart and Dowell (2011) stated that sustainable development is not just about less environmental destruction but also pro-actively initiating solutions that can maintain the environment for the next generations. These solutions, including clean technology could up-level the strategic capability of corporates to better align with execution improvements in the social arena and economic accomplishments. In addition, Valente (2012, p. 586) suggested a paradigm shift for sustainability management, insisting that harmonising approaches would *"harness the collective and operational capabilities of multiple local and global social, ecological, and economic stakeholders operating as unified network or system*".

Accordingly, Marshall and Brown (2003) present a fascinating definition of an "ideal" sustainable organisation stating that in such an organisation recycling and renewals rates would be much quicker than the rate at which natural resources are utilised. Delmas and Montes-Sancho (2011) established the foundation for this definition by stipulating the adoption of a multiple-level analysis, rather than a singular framework at the level of strategic management in sustainable organisations. Accordingly, Markevich (2009) added

six additional dimensions (namely compliance, mitigation, alignment, designing, innovation, and transformation) to the definition which encircled value within corporate sustainability to thus assist firms in achieving sustainability.

Garriga and Melé (2004, p. 51) identified four main dimensions applicable to the sustainable management of corporate namely *"profits, political performance, social demands, and ethical values*". Years later, Sgarbossa and Russo (2016) explained that the social dimension of sustainability is traditionally rooted in corporate social responsibility and presents actions and approaches that are not necessarily required by legislation but are pursued for the purpose of social good and thus lie beyond the financial interests of the firm. Therefore, if *environmental sustainability* refers to the management of environmental resources, then *social sustainability* refers to the management of societal resources, taking into account that in some instances environmental and social sustainability could be positively correlated.

Strategic managers are thus increasingly pressurised to address the needs of multiple stakeholders through a contribution to social and environmental tasks whilst remaining profitable. Corporate social responsibility (CSR) has thus evolved as a critical strategic tool which, as per Mc Williams and Siegel (2011), *"may result in a sustainable competitive advantage*". However, financial stakeholders might not fully agree with this strategy (Mc Williams et al., 2014) and furthermore, Bansal and Gao (2006) emphasised the unique opportunities for scholars to develop new theoretical frameworks for environmental sustainability.

As per the corporate sustainable model by Lloret (2016), sustainable leadership is required to create an enabling environment for stakeholders within which to collaborate, build trust-relationships with communities and drive a sustainable and long-term value generation. Furthermore, sustainable leadership practices can create an efficient organisational culture. Porter and Kramer (2011) supported sustainable leadership practices in response to internal and external pressures by various stakeholders which require leaders who can sustainably generate shared value. Other enablers, also elaborated upon by Lloret (2016) as the elements in his corporate sustainability model, include corporate governance which forces corporations and institutions to comply with certain regulations and policies. These regulations influence corporate behaviour and control the internal and external actions of the stakeholders involved. Corporate governance tools could aid in tackling sustainability challenges whilst fulfilling requirements for stakeholder management in organisations.

2.3.2 Stakeholder Theory

Freeman defines (1984, p. 25; Freeman, Harrison, Wicks, Parmar & de Colle, 2010, p. 9) as "*the groups and individuals who can affect or be affected*" by an action that can generate value. Accordingly, Freeman et al., (2010) noted that the unit of analysis used in the stakeholder theory is the interrelationship/s between the organisation and its stakeholders which allows for current value creation without compromising value creation in future. Consequently, Hörisch et al. (2014, p. 331) indicated that "*generating mutual interests*" amongst various stakeholders, rather than focusing on compromises, is one of the main elements of the stakeholder theory. Therefore, the aim of the stakeholder theory, and the purpose of businesses, is to generate value for all stakeholders radically interlinked with ethics (Freeman et al., 2010).

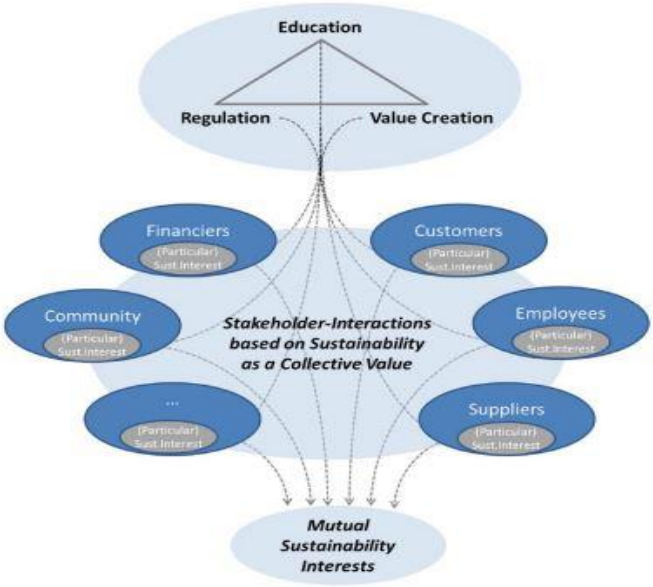
Initially, Harrison and Freeman (1999) defined *stakeholder's approach* in corporate social responsibility as an area which includes several different groups, all of whom who have a stake in a company and can directly, or indirectly, pressure the company to behave in accordance with their demands and desires. With further developments, stakeholder management deliberately involved all actions and strategies towards managing stakeholders' aspirations and apprehensions whilst simultaneously pursuing organisational goals (Freeman et al., 2010; Hoffman & George, 2012). Therefore, it is important that strategic managers also consider the management of their employees as part of *stakeholder management* since these strategies need human resources for execution. Investment in employees will create trust, commitment, lower the cost of doing business and enhance competitiveness (Lyman, 2008).

Montiel and Delgado-Ceballos (2014) supported the stakeholder theory for the analysis of corporate sustainability drivers since one of the main principles of this theory is its emphasis on pursuing stakeholders' interests. Consequently, Hörisch et al. (2014, p. 328), explained that the main challenges in managing stakeholder relationships are *"creating and strengthening mutual sustainability interests and empowering stakeholders to mediate the sustainable development*". Thus, to satisfy various demands and expectations which could create performance constraints, there is a need to understand the complexities that are not simply and/or purely concerned with profit maximisation (Mc Williams et al., 2014).

The stakeholder theory is applicable to sustainability management, having a lot of similarities with sustainability. However, creating "mutual interests" amongst all

stakeholders in any industry, or a business, is always a challenge. Hörisch et al. (2014) established similarities between the *stakeholder theory* and *sustainability management* namely: purposes for businesses, strategic management, profit maximisation, complexity and segregation misinterpretation whilst some dissimilarities refer to the connection of the triple dimensions and sustainable development. Overall, both concepts consider *ethics* and the creation of *mutual interests* in profit maximisation processes.

Freeman et al. (2010) explained that the stakeholder theory collectively addresses the problems of: value creation, capitalism, ethics and managerial mind-set. However, there are various views regarding the management of stakeholders' relationships. Some of these views support the equal treatment of all stakeholders, regardless of their status (Phillips, Freeman & Wicks, 2003), whilst other views emphasise the role of strategic management in identifying stakeholders who are engaged in the process of value creation and to thus focus exclusively on them to advance business success. To create new possibilities for value creation, based on the sustainability for stakeholders, it is essential to advance the sustainability mind-set among various stakeholders (Hörisch et al., 2014). Since strategic managers should take stakeholders' interests into account when developing and executing their strategies (Donaldson & Preston, 1995; Freeman, 1984; Harrison & Freeman, 1999), CS scholars have substantially used the stakeholder theory to elaborate and explain drivers and enablers of CS strategies (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Kang, 2013).



- Figure 2: A conceptual framework for strengthening the sustainability mind set, creating mutual sustainability interests and empowering stakeholders
  (Source: Hörisch et al., 2014, p. 338)

Phillips et al. (2003) stipulated that managing stakeholders' relationships does not mean that stakeholders should be treated the same regardless of their status. In fact, it is critical for strategic managers, committed to the success of their businesses and the well-being of its stakeholders, to pinpoint those stakeholders who are involved in a specific business activity since their inputs can help to constructively drive business success.

2.4 SUPPLY CHAIN MANAGEMENT IN AGRIBUSINESSES

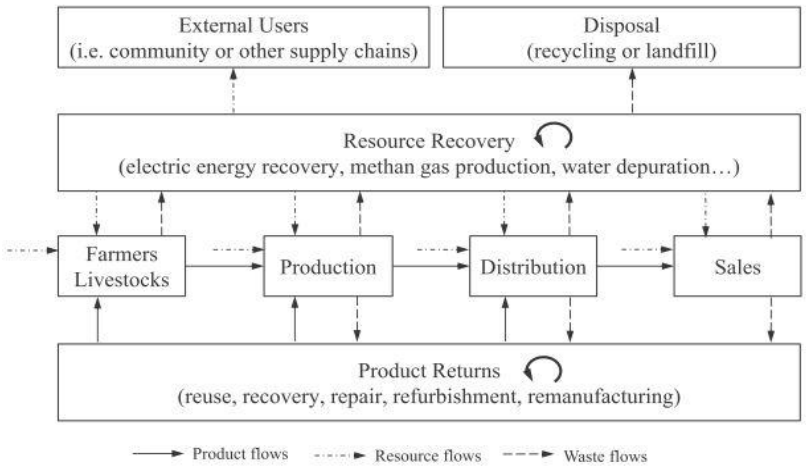
2.4.1 Agricultural Supply Chain Management

With the emergence of food security as a critical worldwide issue, the need to optimise agricultural supply chains as well as effective management strategies to maintain the integrity of agricultural sectors, including the grain industry, has been highlighted (Ge, Gray & Nolan, 2014). It is estimated that globally one-third of food is getting lost or, is wasted, particularly in post-harvest operations. This food is thus never consumed by humans, this whilst food security remains a worldwide concern. Therefore, reducing post-harvest losses, specifically in developing countries, through sustainable solutions can enhance food security. This issue becomes pertinent when considering that the world's population will grow to 9 billion people by 2050 which will require 70% extra food production. Investing the reduction of the post-harvest losses could have a higher return than yield optimisation and/or increase food production (Kumar & Kalita, 2016).

2.4.1.1 Food Value Chain, Closing the Loop and Traceability

Sgarbossa and Russo (2016) emphasised the significance of focusing on the creation of balance amongst the three dimensions of sustainability and the assessment of opportunities to activate new loops in the food supply chain in order to achieve sustainable development. They initially explained that converting food losses into new resources, hence introducing them back into the chain, would close the loop in the food value chain. However, the sustainability of closed loop models should be evaluated in terms of investment value compared to social and environmental impacts. Therefore, it is essential for strategic decision-makers, also in similar industries, to consider closed-loop systems that cost less and are thus more efficient in tackling food losses and recovering resources. Understanding the opportunity cost of such developments, and the evaluation of socio-environmental impacts on the status of scarce resources, should be considered

strategically towards cultivating a circular economy. Figure 3 presents a diagram on closing new loops in the food supply chain.



- Figure 3: Closing new loops in the food supply chain
  (Source: Sgarbossa and Russo, 2016, p. 601)

Dyllick and Muff (2015) indicated that transparency is a required element in the evaluation, comparison and improvement of business contributions to sustainability development in agricultural sectors. Communication, internal reporting and external assurance are contributing factors to transparency. Dyllick and Muff (2015, p. 12) defined contributing elements to transparency as *"the rule-changing strategies*" which could also be applied to the creation of sustainable agriculture and fighting food losses through the establishment of new principles for sustainable practices and the creation of transparency.

2.4.1.2 United Nations Sustainable Development Goals and Zero Hunger

Nowadays, the boosting of sustainable development is seen as an essential responsibility. The United Nations Development Programme, a key player in helping countries *"to end poverty, promote prosperity and people's well-being while protecting the planet by 2030*", has developed the new "*Sustainable Development Goals*" or the "*Global Goals*" (17 SDGs) to make this vision a reality. These goals, with their *"inclusive agenda*", aim to bring health, happiness and prosperity to all through addressing the root causes of global challenges, such as poverty, and by uniting societies to positively impact on people and the planet (Sustainable Development Goals, 2018).

According to the United Nations Sustainable Development Goal 2 (SDG2): Zero Hunger, severe malnutrition remains a serious development obstacle in many countries. Over 90 million children worldwide, under the age of five, are vulnerably underweight and one in every four children in Africa suffers from hunger. Therefore, SDG2, intends to end hunger worldwide (GOAL2: ZERO HUNGER, 2018) and aims to assure access for all people to safe, sufficient and nutritious food, by 2030, through *"promoting sustainable agricultural practices, supporting small-scale farmers, allowing equal access to technology and markets, and ensuring investment in infrastructure and technology to improve agricultural productivity*". Since agriculture is "*the largest employer*" worldwide and "*the largest source of income*" for poor and rural households, ensuring sustainable agricultural practices that increase food production, protect the environment, and strengthen the adaptation to global, climatic and environmental changes has been defined as one of the objectives of SDG2 to be realised by 2030 (GOAL2 TARGETS, 2018).

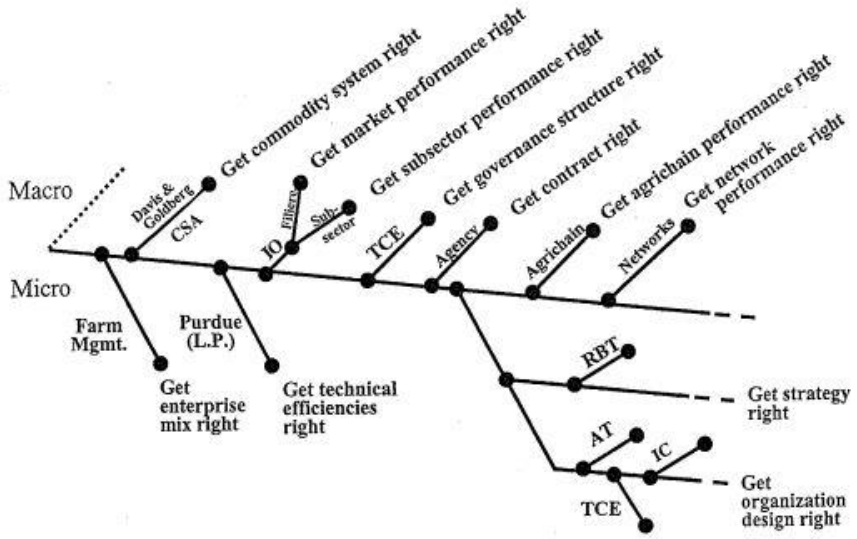
2.4.2 Agribusiness and Grain Industry Sustainability

2.4.2.1 Agribusiness History and Definition

The introduction and use of the term "agribusiness" started in 1956 when John H. Davis, as programme director of agriculture and business at Harvard Business School, published the article "From Agriculture to Agribusiness" in the Harvard Business Review (Davis, 1956). In 1957, John H. Davis, together with Ray A. Goldberg, published the book "A Concept of Agribusiness" which also defined the new term "agribusiness" as "*the sum total of all operations involved in the manufacturing and distribution of farm supplies; production operations on the farm; and the storage, processing, and distribution of farm commodities and items made from them. Thus, agribusiness essentially encompasses today the functions which the term agriculture denoted 150 years ago*" (Davis & Goldberg, 1957, p. 2). Davis and Goldberg (1957) further highlighted the importance of the food system as an integrated value chain that requires focus on the entire system rather than only on one fragment.

Accordingly and as indicated by other scholars such as Cook and Chaddad (2000, pp. 209-210), agribusiness has evolved in two parallel levels namely: agribusiness economics as *"the study of coordination between vertical and horizontal participants with the food supply chain",* and agribusiness management as *"the study of decision-making within the alterative food chain governance structure".* With the establishment of the International Agribusiness Management Association (IAMA) by Ray Goldberg in 1990, and the intention

to facilitate more collaborations between academia and industry, contributions to agribusiness research, including economics and management, has expanded (King, Boehlje, Cook & Sonka, 2010). Figure 4 demonstrates the evolution of agribusiness research in the two parallel levels of macro- and micro-management.



- Figure 4: The evolution of agribusiness research
  (Source: Cook and Chaddad, 2000, p. 210)

2.4.2.2 Agribusiness Economics and Agribusiness Management

One of the essential principles of effectual study in agribusiness management, and a critical part of agricultural economics, is agribusiness economics. Sonka and Hudson (1989) indicated that developments in economic theories are applicable to agribusiness management. They explain that since the study of the performance of agricultural markets, policies and finances has been strongly considered within agricultural economics, there is a strong correlation between agribusiness economics and agribusiness management. Agribusiness economics mainly refer to an understanding of the performance of food and agricultural institutions while agribusiness management focuses on how managers, within these sectors, act and decide what ultimately affects the performance of these institutions.

By the 1990s, the new concept of supply chain management (SCM) emerged in agribusiness economics. SCM, developed among agribusiness and food system experts, a more comprehensive approach. Accordingly, quality analysis, food and animal safety, traceability and other social, environmental and behavioural objectives, relevant to

agribusiness economics emerged and developed as *"micro-analytical oriented tools*" for agri-analysis (Cook & Chaddad, 2000, pp. 211 - 212). Agribusiness management is more concerned with strategic decision-making within agri-food firms. Since the structures within agribusiness firms are becoming more complicated and more reliant on collective unitedness, strategic and governance challenges, socio-economic changes and the impact of technological developments, agribusiness management is becoming *a must*. Agribusiness managers and policy makers need to collaborate continuously to tackle global challenges, restructure the food systems and strategically reposition agribusiness firms (King et al., 2010).

Accordingly, King et al. (2010) described agribusiness economics as being concerned with how markets, firms and institutions influence vertical and horizontal integration and association within the food value chain. Concurrently, five main contributions were identified in the analysis procedure within the sector. These include: the introduction of economic reasoning in agricultural management scholarships, the development of agricultural credit institutions, the utilisation of new economic frameworks in agribusiness organisational structure, the development and application of theories to explain structural changes in agribusiness and the food system, and ultimately, increased attention to key elements of the food supply chain management.

Agribusiness plays a significant role in facilitating sustainable development by achieving the TBL goals through the reduction of food losses and waste, which remain a global challenge (Lipinski, Hanson, Lomax, Kitinoja, Waite & Searchinger, 2013). The quantity of food losses has been studied by scholars and compared to the production of more food by agriculture as the engine to empower emerging and existing agri-food businesses across the African continent. The findings show that reducing food losses has a better compared to increasing yields (Banson, Nguyen, Bosch & Nguyen, 2014).

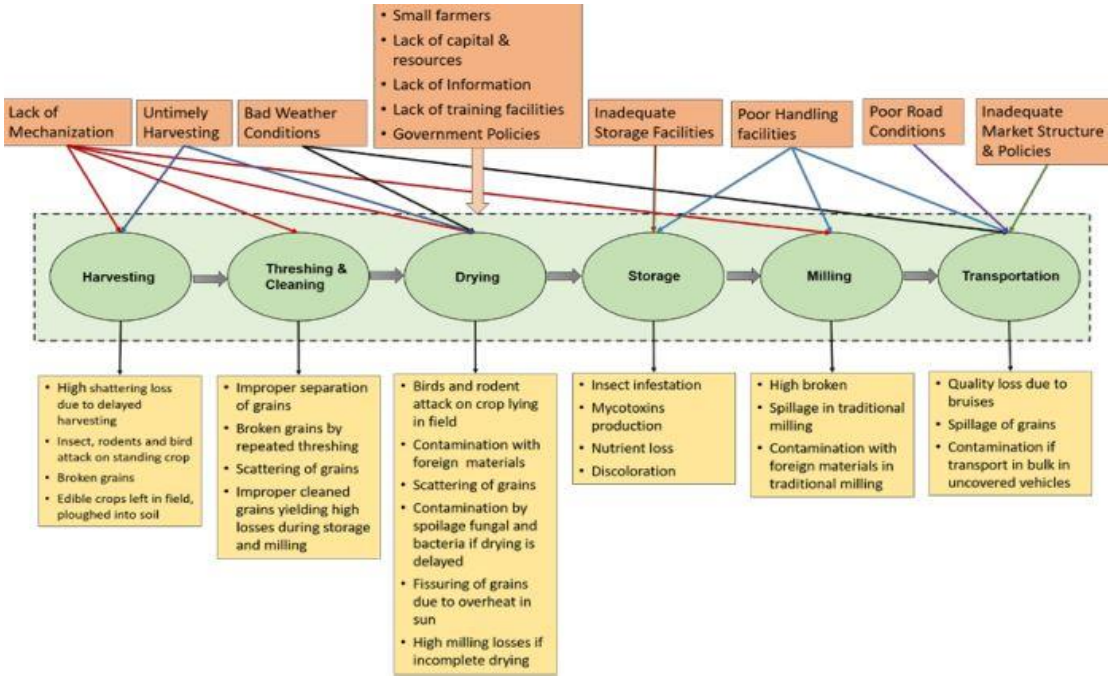
Food security remains one of the main challenges which agribusiness face and as such, it requires an integrated approach that involves various stakeholders towards fulfilling economic, social and environmental needs for sustainable development (Olukunle, 2017). Considering the key element of the resource-based theory, as per Cook and Chaddad (2000, p. 212), *"all the tangible and intangible assets of the firm including physical, financial, human, and organizational capital*" is necessary as their application in agribusiness management aids organisation/s. To obtain sustainable, competitive advantages and to overcome the impact of food losses, resource diversity or "*heterogeneity*" is necessary. Lloret (2016) supported this notion by indicating that for a

corporate to overcome social-economic and environmental constraints, the incorporation of the competitive strategies with firm-specific resources and capacities are required.

2.4.2.3 Grain Management and Grain Industry Sustainability

The majority of post-harvest losses of agricultural commodities occur in the grain industries. These industries, as previously noted, supply the staple food of most developing countries. Adopting effective technological solutions in the handling and storage of grain can significantly reduce the amount of post-harvest grain losses, up to 50%, which will significantly add towards the sustainability of the grain industry. A simplified grain supply chain, from farm to fork, consist of harvesting, cleaning, drying, storage, milling and transportation, as modelled by Kumar and Kalita (2016).

Furthermore, Kumar and Kalita (2016) explained that post-harvest losses (PHL) already start on the field during harvesting, and these losses continue until the product is consumed, or reaches the processing plants. The PHLs could be physical, or quality losses, which reduce the economic value of grains. Technological interventions, improved handling and storage structures resulting from sustainable strategies, play a critical role in eliminating and reducing the PHL in the grain industry. Whilst post-harvest losses remain a complex issue which negatively influences farming sustainability, optimum grain management practices could enhance the reduction of losses and will ultimately have a significant impact on poverty reduction, food security enrichment and elevating farmers' returns. Figure 5 illustrates various factors and types of losses in the grain value chain.



- Figure 5: Various factors and types of losses in the grain value chain in developing countries (Source: Kumar and Kalita, 2016, p. 5)

Pingali (2015) supported the concept of agricultural supply chain management by establishing the need for a neutral agricultural policy, as well as public and private investment in agricultural commodities transport, storage and marketing to thus empower farmers to diversify their production. He believes that if small-scale farmers are to be integrated into markets, the policy should focus on diversification. In addition, he emphasised the importance of institutional capacities and investments to establish clear property rights, including farming lands, which also support the diversification of agricultural commodities. This notion was supported by other scholars who emphasise access to finance and land registration policies to improve the profitability and on-farm activities of farming businesses (Dercon, 2002; Fafchamps, 2009).

2.5 CONCLUSION

This chapter reviewed studies which focused on the main theories of corporate sustainability, stakeholder theory and agribusiness supply chain management. Several major themes were identified namely: sustainability, corporate sustainability, sustainability management and agribusiness including the grain industry as the chosen industry context of this study. The literature basis of the study employed the concept of *sustainability* as a lens through which the main themes were studied. In summary, relevant views emerged

from each section of the literature review and this knowledge will be used as the foundation for addressing research questions. The literature review is also essential for the contextualisation of the discussion of the results presented in Chapter 6.

According to Friedrich, Heyder & Theuvsen (2012) whilst there is a growing application of sustainability management in agribusiness firms, many of these organisations are still in a trial phase and need to adjust their approach in sustainability management. This fact supports the need for a more in-depth research in the area of sustainability management in agribusiness sectors to identify the enablers and inhibitors of sustainability strategies' execution as well as dominant patterns that are influencing the sustainability of the industry as a whole.

Therefore, this chapter aimed to provide a better understanding of the definitions: sustainability, corporate sustainability, sustainability management and stakeholder theory within the context of agribusiness, in particular agri-grain firms which handle, store, process and trade grain. The complexity of various acquired strategies within these sectors will be further investigated. The aim is to establish a common understanding of corporate sustainability strategies and sustainability management, as hold by the firms being investigated. In addition, this study aims to explore which corporate sustainability strategy dimensions have the greatest impact on reducing post-harvest grain losses. The next chapter will present three questions which the study aims to answer.

CHAPTER 3: RESEARCH QUESTIONS

3.1 INTRODUCTION

The purpose of this study is to explore and understand corporate sustainability strategies as well as the execution enablers and inhibitors of said strategies within the agri-grain domain towards influencing factors impacting on the triple bottom-line (TBL) of the grain industry in South Africa. In addition, the interplay between CS strategies and the reduction of grain losses within the participant firms will be explored. Therefore, the research questions have been constructed to align with the research purpose and literature review. Since limited research has been done on enablers and inhibitors of corporate sustainability strategies in the grain industry (Mc Williams et al. 2014; Montiel & Delgado-Ceballos, 2014), it is important to focus on sustainability dimensions and thus understand their interplay in reducing grain losses in South Africa.

3.2 RESEARCH QUESTIONS

In an effort to address the theoretical and practical knowledge gaps in managing the triple bottom-line in agribusiness sectors, whilst incorporating the interests of multiple stakeholders in strategic decision-making towards reducing post-harvest losses and so support sustainability strategies in the engaged sectors (Lipinski et. al., 2013; Mc William et al., 2014; Kumar & Kalita, 2016), *research questions* have been designed to explore the purpose of this study. These questions were formulated to align with the research purpose, research problems and the literature review.

3.2.1 Research Question 1 (Q1)

To what extent are corporate sustainability strategies understood and measured?

The aim of Research Question 1 is to elucidate gain the understanding of corporate sustainability strategies within the dimensions of agri-grain firms. In addition, this research question seeks to establish the impact of said strategies, as measured within the studied sectors (Hart & Milstein, 2003; Hart & Dowell, 2011; Montiel & Delgado-Ceballos, 2014).

3.2.2 Research Question 2 (Q2)

What are the enablers and inhibitors to implementing corporate sustainability strategies? And what is the most dominant enabler?

Research Question 2 aims to gain an understanding of the elements that *enable*, and the elements that *inhibit*, the implementation of corporate sustainability strategies. Furthermore, this question seeks to clarify the most dominant enabler for strategy execution within the studied agri-grain firms (Freeman, 1984; Brammer & Millington, 2004; Bansal, 2005; Peloza et al., 2012; Aragon-Correa, 2013; Starik & Kanashiro, 2013; Dyllick and Muff, 2015; Lloret, 2016).

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3.2.3 Research Question 3 (Q3)

What is the interplay between reducing post-harvest grain losses and the sustainability of the grain industry and how can this be compared to other enablers which impact on the implementation of corporate sustainability strategies to support the TBL of the grain industry?

Research Question 3 aims to explore the perceived interplay between the reduction of post-harvest grain losses and corporate sustainability of the grain industry and, in doing so, shed light on the impact of this particular enabler compared to other identified enablers of CS strategies implemented in the studied agri-grain firms. In other words, this research question sought to ascertain whether the reduction of post-harvest grain losses, as perceived by interviewees, was considered influential or not. If not, the question sought to ascertain which other enablers were regarded as more influential in the sustainability of the grain industry (Davis, 1956; Davis & Goldberg, 1957; Cook & Chaddad, 2000; Lipinski et al., 2013; Pingali, 2015; Kumar & Kalita, 2016; Olukunle, 2017).

CHAPTER 4: RESEARCH METHODOLOGY AND DESIGN

4.1 INTRODUCTION

This chapter discusses the research design and methodology adopted to address the research questions, presented in Chapter 3. In addition, the assumptions and limitations of the research instrument, data collection and analysis method are presented. This study adopted a qualitative method and exploratory approach. One-on-one, semi-structured, in-depth interviews were conducted with 26 CEOs, executive managers and individuals in the top management structure of 22 South African agri-grain firms, as per the purpose of the study. The collected data was analysed, categorised and emergent themes were formulated in alignment with the established foundation in the reviewed literature.

4.2 RATIONALE FOR RESEARCH DESIGN AND METHODOLOGY

Malterud (2001, p. 483) described the components of a qualitative research as a *"systematic collection, organisation, and interpretation of textual material"* obtained from interviews and/or observations. Therefore, the qualitative method is a *"systematic and reflective process"* which develops an understanding of the world. Additionally, Cassell and Symon (2011) added that qualitative research is analogous to various conceptual views. However, it is usually an inductive study which focuses on individuals' views.

Cassell and Symon (2011, p. 638) indicated that a good qualitative research study must be *"fit for purpose".* Consequently, Choy (2014) explained that qualitative research starts with self-assessment and reflection regarding a specific position. Moreover, this type of research explores theoretical paradigms through semi-structured and often in-depth, open-ended interviews. Thus, the qualitative method was adopted as the methodological design for this study through the utilisation of semi-structured interviews.

Ponterotto (2005, p. 129) established the constructivism-interpretivism philosophy as the foundation for qualitative research and highlighted the significance of reflection resulting from "*the interactive researcher-participant dialogue*". This is also an important attribute of this philosophy. Since the interaction between the *researcher* and *participants* is reciprocal in nature, it influences them to create *"co-construct findings*". This philosophy was adopted as the paradigm of the study.

Due to an overall lack of researches regarding the establishment of corporate sustainability strategies, the execution enablers and inhibitor of these strategies and the exploration of the interplay with the consequent reduction of grain losses among agri-grain firms, an *inductive approach* was adopted to explore and develop knowledge in accordance with the emergent themes. The adopted inductive approach of the study followed the literature review for analysing and categorising themes which emerged and evolved resulting from the qualitative analysis. Moreover, and since one of the advantages of the qualitative study is to allow informants to raise issues that matter to them, the informants' feedback was considered when constructing applicable themes of the study (Saunders & Lewis, 2012).

As supported by Choy (2014), semi-structured interviews were adopted as they provide the opportunity to ask penetrating questions and capture the rich data of this topic. These questionnaires were administered during face-to-face interviews and thus gained valuable insights into the main phenomenon being researched namely the sustainability, or the triple bottom-line approach, within the day to day business practices of the targeted context-specific set-up. The interview questions were designed in alignment with the reviewed literature and formulated research questions which enabled an in-depth investigation as well the facilitation of feedback opportunities which ultimately helped with the extraction of pertinent themes.

A purposive sampling was used as part of the required method to create new concepts and to construct interpretations at the analysis stage. The study was cross-sectional since it was conducted at one distinct point in time and not over multiple times, or several years, as per the requirement of a longitudinal study. The consistency, or the golden thread, between research objectives and strategy employed to collect data, and their fitness to the study, was thoroughly considered (Saunders & Lewis, 2012).

4.3 POPULATION

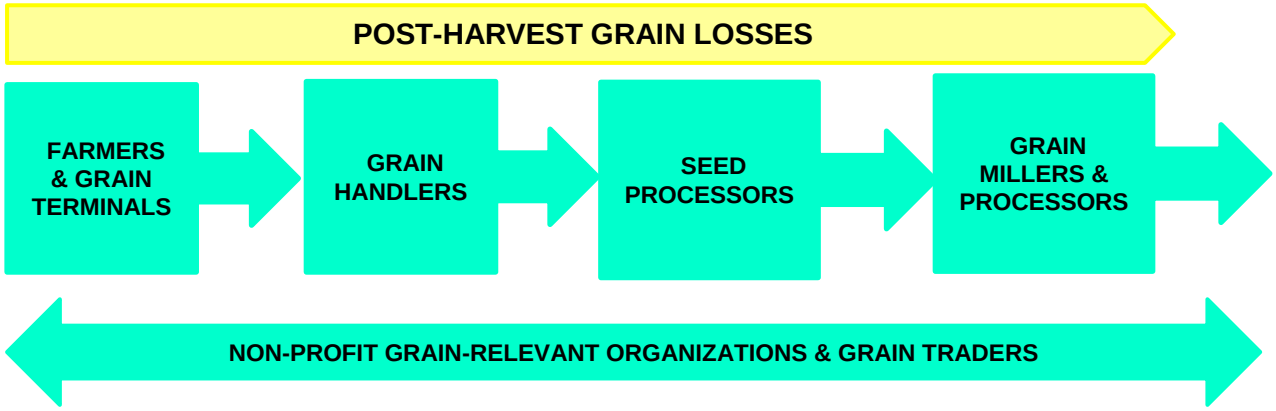
All agri-grain firms within the grain industry sectors including grain handling, grain storage, grain processing, grain trading as well as non-profit organisations which deal with the grain industry in South Africa were considered as the population for this study.

4.4 SAMPLING METHOD AND SIZE

Saunders and Lewis (2012, p. 132), defined a sample as a *"subset of the whole population from which data will be collected*". This study adopted a purposive non-probability sampling method to ensure that participants were chosen carefully to attain an insightful understanding of sustainability strategies within their corporations (Bloomberg & Volpe, 2012). Malterud (2001, p. 485) supported purposive sampling as a method to obtain quality data in a *"stepwise way"*, depending on the extension of the data that is needed to efficiently answer the research question/s.

Furthermore, the acquired purposive sampling helped to gather well-positioned and highly qualified candidates who could provide distinctly reliable and insightful information in response to the research questions (Creswell, 2013). Therefore, informants were selected purposefully based on their positions and contribution to organisational decision-making as well as their experiences and expertise in the grain industry. As supported by Cochran (2007), the adopted method was one of non-probability since the candidates in the target population were not afforded an identical chance to be nominated as the entire population could not be reached within the time-frame of this study.

The sample size of the study was 26 participants from 22 agri-grain firms chosen purposefully from different sectors who held top and executive management positions in their firms in South Africa. Some of the firms held interests in various sectors, rather than only one sector. Figure 6 illustrates the targeted sectors in the grain value chain and Table 1 summarises the number of firms which were selected purposefully and according to their management availability for the interview.



- Figure 6: Summary of targeted sectors through the grain value chain (Source: Researcher)

- Table 1: Interview distribution across the selected agri-grain sectors

  (Source: Researcher)

	Classification in the grain value chain	Number of firms	Number of Informants
1	Grain Handling, Storage and Processing	10	12
2	Grain Handling, Storage and Seed Processing	4	6
3	Non-profit Grain-related Organisation	3	3
4	Grain Milling	2	2
5	Grain Trading	2	2
6	Grain Terminal	1	1
	Total	**22**	**26**

Since informants worked in 17 different towns across 7 provinces (including Gauteng, Free State, Limpopo, North West, Western Cape, Mpumalanga and KZN), the researcher had to travel extensively in order to conduct the interviews. The objective was to involve as many sectors as possible and thus collect various and diversified views from various geographical areas in South Africa. Table 3 demonstrates the geographical distribution of the selected firms.

- Table 2: Summary of selected sectors based on geographic locations

  (Source: Researcher)

	Province	Town	Number of Firms
1	Free State	Reitz, Bloemfontein, Welkom	3
2	Limpopo	Modimolle	1
3	North West	Lichtenberg, Leeudoringstad, Klerksdorp	3
4	Western Cape	Malmesbury, Paarl, Swellendam, Caledon, Newlands	6
5	Mpumalanga	Delmas	1
6	KwaZulu-Natal	Greytown, Durban, Pinetown.	4
7	Gauteng	Centurion - Pretoria	4
	Total		22

4.5 UNIT OF ANALYSIS

The unit of analysis for this study was the sustainability strategies of 22 selected agri-grain firms, within the targeted sectors of the grain value chain, based in South Africa. These firms either adopted *sustainability* as their corporate strategy or mentioned sustainability, or sustainability reporting, in their websites, annual reporting or either support its implementation in the industry. In this regards, the top management structure of these firms (CEOs, executive managers, managing directors and general managers involved in strategic decision-making, or strategy development procedures of their firms) were considered as the target informants of the study.

4.6 DATA COLLECTION TOOL

4.6.1 Measurement Instrument

Turner (2010) described the semi-structured, open-ended interview as a tool to present information according to the interviewee's perspective and experiences. The nature of open-ended questions allows informants to express their views in detail and openly share their feedback with the researcher. Saunders and Lewis (2012) further explained that semi-structured interviews are a set of predetermined questions which are classified according to the themes of the qualitative study. Therefore, semi-structured, open-ended, face-to-face interviews were chosen as the instruments to be used in this study. The interview questions were designed and based upon the research questions and presented literature review. Table 2 demonstrates mapping of the research questions with interview questions.

- Table 3: Mapping of research questions with interview questions
  (Source: Researcher)

Research Questions	Interview Questions
Q1: To what extent are corporate sustainability strategies understood and measured?	1A. Describe your understanding of corporate sustainability strategies.
	1B. Elaborate on the dimensions of sustainability strategies that your organisation focuses on.

	1C. Describe if there is a tool or an approach to measure the impact of these strategies or to balance the performance of the dimension/s.
Q2: What are the enablers and inhibitors to implementing corporate sustainability strategies? And, what is the most dominant enabler to implementing these strategies?	2A. Elaborate on the enablers of implementing corporate sustainability strategies.
	2B. Elaborate on the inhibitors of implementing corporate sustainability strategies.
	2C. Identify the most dominant enabler to implement corporate sustainability strategies.
Q3: What is the interplay between reducing post-harvest grain losses and the sustainability of the grain industry and how can this be compared to other enablers which impact on the implementation of corporate sustainability strategies to support the triple bottom-line of the grain industry.	3A. Elaborate on the impact of reducing post-harvest grain losses on the sustainability of your firm and the grain industry.
	3B. Elaborate on the impacts of other enablers on the sustainability of your firm and the grain industry.
	3C. Describe the challenges involved in reducing post-harvest grain losses within the context of your firm and the grain industry.
	3D. Elaborate on the comparison between the reduction of post-harvest grain losses and other enablers to support the implementation of corporate sustainability strategies within your firm, as well as the TBL, in the South African grain industry.

4.6.1.1 Preparation for the Interview

Turner (2010, p. 757) indicated that the interview preparation process *"can either alleviate or exacerbate the problematic circumstances that could potentially occur once the research is implemented".* The preparation for this study was therefore regarded as a critical part of the interview process. The first step was to gather information regarding the organisation/s as well as the positions of the individual/s which had been selected to take part in the study. This background knowledge was attained from publically available data such as websites and annual reports. The informants were then approached via a formal e-mail which included: Informed Consent Letter (as per Appendix D) and the Interview Guide (as per Appendix C).

Accordingly, this email was then followed by a telephone call to arrange and confirm an appropriate date and time for the informant. This step also included the selection of a venue with minimum disturbance (by the informant) which in most cases turned out to be his/ her office. The interview sessions commenced with the researcher setting the scene by explaining the purpose of the study, or interview, as well as determining the required duration of the session.

Before commencing with the interview, the confidentiality terms were explained explicitly each time and informants were requested to sign the Consent Letter and review the Interview Guide to express any possible comments or ask any question/s. The session was only recorded once the informant had given his/ her permission. The purpose of the study was, once again, clearly stated. At the end of the interview the researcher left her contact details in case the informants wanted to contact her.

4.6.1.2 Pilot Testing Process

Kvale (2007) explained that a pilot test is an important component to interview preparation which can assist the researcher in identifying probable limitations, or flaws, in the interview design. The researcher can thus correct and improve these flaws before doing the interview/s. Turner (2010) completed this explanation by adding that the characteristics of the pilot test interviewees should be similar to those of the informants in the main interviews. He also emphasised that the pilot test should be considered a refinement opportunity regarding the interview questions to be used in the study.

The pilot test for this study was done with two individuals, as both senior managers at similar firms, in the prescribed, formal manner. The pilot test was a worthwhile exercise which afforded insights into how to conduct the interviews. The feedback received from the pilot test participants helped to fine-tune the interview questions. Their input was thus considered when reviewing the interview questions. The interviewed managers were excluded from the chosen study sample of the study.

4.7 DATA GATHERING PROCESS

Data were collected through recording and transcribing the semi-structured, face-to-face, in-depth interviews with senior managers of agri-grain firms, including CEOs, executive managers, managing directors and general managers who all formed part of the chosen sample. The interviews were conducted in a conversational manner and focused on the topic, however, informants' flexibility to address any specific topic was taken into account (Zikmund, Babin, Carr & Griffin, 2013). To support the exploratory nature of the study, informants were urged to answer openly. An opportunity for feedback, or to ask questions, was also given (Saunders & Lewis, 2012).

The interviews were held at a place and time convenient to the informants, mainly at their offices, except two interviews which were conducted outside the country at a hotel since the researcher was traveling with informants on business trips. Each interview was recorded as data uniformity and objectivity were regarded as a critical component of the semi-structured interviews. Entire responses were transcribed by the researcher and translated into meaningful descriptions to identify patterns and pertinent categories which resulted in meaningful constructs and themes. The consistency between the literature review, research questions and the Interview questions were upheld, as per the golden thread of the study (Saunders & Lewis, 2012).

At the end of each session, after informants' feedback and questions had been facilitated, triangulation was used to ensure the validity and reliability of the qualitative data (Golafshani, 2003). The interviews were terminated when no additional insights were forthcoming. The researcher ensured that the informants had no further question or feedback they wished to share. Touboulic et al. (2014) advised that, in order to afford interviewees an opportunity to develop their answers, it is better to record the interviews digitally, transcribe them, and then return them to the interviewees for feedback. Therefore, at the end of each session, the researcher requested weather the informant would be

willing to review the transcript. Transcripts were then sent to interviewees who had requested them.

In line with the exploratory nature of the study, the three aspects of sustainability (economic prosperity, environmental integrity and social equity) were considered to create meaningful relationships between the dimensions as well as identifying the focus elements in each dimension of the triple bottom-line (Sebastiani, Gorsaro, Montagnini & Caruana, 2014). Since the case studies focus on a particular issue with selected cases providing insight into that topic (Creswell, Hanson, Plano Clark & Morales, 2007), the issue of post-harvest grain losses was investigated in the selected agri-grain firms within the chosen grain industry sectors from a corporate sustainability perspective.

The data gathering process in this study was conducted in two phases. In the first phase, semi-structured interviews with senior managers of agri-grain firms were held. The second phase checked and validated findings through organisations' publicly available data. This included information on their websites, such as annual reports for the last five years minimum and additional observations. The intention was to use multiple sources of semi-structured and publicly available data to triangulate the findings and so increase the study's reliability and validity. Consistency between the interviews and gathered data was continuously appraised (Pogutz & Winn, 2016).

The notion of *triangulation* was also supported by Yin (2009), who indicated that through the utilisation of multiple data sources, rather than individual origins, the probability of building a comprehensive contextual apprehension would increase. The application of respondent triangulation in this study followed this premise and therefore voice recordings, transcripts of interview recordings, handwritten notes of sessions as well as website information and the annual reports of chosen firms were considered *subject data* of the study to be studied in the analysis phase (Saunders & Lewis, 2012).

4.8 DATA ANALYSIS

After the data were collected during the interview sessions, a transcript of each meeting session was created. Two qualitative analysis approaches were followed by the researcher to ensure thorough analysis of the data and thus increase the trustworthiness of the study. *Content Analysis* was applied in Phase I and *Thematic Analysis* was applied in Phase II.

Content analysis, which has been defined by Hsieh and Shannon (2005 – p. 1 278), as *"a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns",* was adopted to gain in-depth insights into the phenomenon being studied. Hsieh and Shannon (2005), explained further that Content Analysis as a qualitative research method to analyse text data, presents a number of codes, sub-categories and categories that are similar in meanings to provide a better comprehension of the case under study. This pragmatic method will increase the credibility of the study and will help to extend the knowledge.

Hsieh and Shannon (2005, p. 1 283 & 1 285) noted that the content analysis approach reaches beyond a mere counting of words and includes "*Latent Content Analysis*" which is a part of *"Summative Content Analysis"* and mainly focuses on the interpretation process. The summative approach, as a type of content analysis, aims at understanding and exploring the contextualisation and utilisation of words to interpret the studied context in accordance to the use of words. This allows researcher to investigate in meanings and will provide more in-depth insights on utilisation of words in different contexts. Ultimately, the approach will enhance the trustworthiness of the study through the application of consistency between *"textual evidence"* and researcher's interpretation.

Holsti (1969), explained that latent analysis refers to the interpretation and apprehension of the content. Later, Maxwell (2010, p. 480) supported the use of quantitative data in qualitative studies noting that the use of numbers, or counts, in qualitative methods does not make them *mixed-method*. Rather, the use of numbers, or quantitative data, is a valid and plausible strategy in qualitative studies if used "*as a complement to an overall process orientation to the research*". Therefore, the quantification of the emerged categories helped the researcher to interpret the contextual meanings of the codes, and sub-categories, ultimately use these categories to build the constructs and themes in the second part of the analysis.

The process commenced with reading the entire data set repeatedly to thus obtain a sense of the content. Consequently, the words, and key concepts, were counted, as per the purpose of this research. These words were thus identified to drive the codes of the study. The intention was, basically, translate and classify all the data into defined categories. The quantified codes were firstly grouped under certain sub-categories, based on their meanings and how they were related, and then these sub-categories were clustered together under meaningful categories (as per Appendix E).

Phase II of the analysis refers to *Thematic Analysis* which was used to extract and group the themes which emerged from the primary data. Thematic analysis, as per Braun and Clarke (2006, p. 6) is *"a flexible analysis approach for identifying, analysing, and reporting patterns (themes) within data that organises and describes the data set in rich details".* Accordingly, Braun and Clarke, (2006, p. 10) defined the theme as "*a notion that captures an important idea about the data in relation to the research question and represents some level of patterned response or meaning within the data set*". They explained further that inductive analysis is, in fact, the process of coding the data without trying to fit them into a pre-existing frame, or force them to adhere to the researcher's preconceptions. The study followed the phases of Thematic Analysis, as per the outlined definition and explanation.

- Table 4 : Phases of Thematic Analysis

  (Source: Braun and Clarke, 2006)

Phase	**Description of the Process**
Phase I	Familiarising yourself with the data, transcription of the verbal data.
Phase II	Generating initial codes in a systematic fashion across the data set.
Phase III	Searching for themes and gathering relevant data to support each potential theme.
Phase IV	Reviewing themes in relation to the coded extracts.
Phase V	Defining and naming themes, generating clear definitions for each theme.
Phase VI	Producing a scholarly report of the analysis.

Following Thematic Process, the codes, as raw data, were interpreted in a meaningful way and the emerging patterns were grouped into sub-categories and categories during the first phase of the analysis to emphasise the linked experiences and meanings. The thematic relationships between various categories were explored in a continuous and organised reflective process. After associating and assessing their nature with their intrinsic interpretations and explications, themes were extracted from the data. Thematic analysis inserts some level of bias and thus themes were identified in accordance with the researcher's judgment was needed to identify the themes (Braun & Clarke, 2006).

Briefly, the process followed the following pattern: initial identification of themes through reading and re-reading the transcripts, followed by the categorisation of constructed themes, after which a continuous reflection on the categorisations yielded the identification

of solid themes which was concluded with discussions and reflections in accordance with the interviews as well as the reviewed literature (Cassell & Symon, 2011). Concurrently, a constant comparison method was adopted for the first-order coding and organising of data as well as the identification of common sub-categories, categories and themes, and ultimately, the comparing of key themes and patterns in light of the research questions. Triangulation was employed to uncover biases and to increase the validity and reliability of the study (Pogutz & Winn, 2016).

Although the analysis of the data initially focused on the identification of common emerging themes, the use of thematic analysis helped to facilitate an in-depth comprehension of the emerging themes as well as exploring new themes. The recording of each interview session was reviewed during the analysis phases. Codes were generated and grouped to create categories which, in turn, developed themes. The aim was thus the identification of recurring important ideas, within the broader context of the study, and relevant to the research questions. The findings were analysed question-by-question. The number of times that each idea was repeated, was captured and then the idea was ranked according to its frequency (Braun & Clarke, 2006; Saunders & Lewis, 2012; Zikmund et al., 2013).

The topic of this research was thus explored through a combination of various resources including the collection of annual reporting, or sustainability reporting documents from the organisation, as well as semi-structured interviews. The gathered data were consequently processed and analysed in two phases (Content Analysis and Thematic Analysis) to facilitate the emergence of patterns. Protecting informants' confidentiality as well as ensuring the credibility and dependability of the collected information remained of paramount importance throughout the whole process (Touboulic et al., 2014).

4.9 DATA VALIDITY AND RELIABILITY

According to Saunders and Lewis (2012), the subjectivity of qualitative research can result in biases during the conducting, analysing and interpreting of interviews. This can be avoided by adopting a reliable and valid evaluation tool as research instrument. In addition, Golafshani (2003) emphasised that any qualitative research should be concerned with validity and the reliability while designing the study, analysing the results and judging the quality of the study. Triangulation is used to maximise both validity and reliability and to reflect multiple ways of establishing the trustworthiness in a study.

Creswell and Miller (2000, p. 126), defined triangulation as *"a validity procedure where researchers search for convergence among multiple and different sources of information to form themes or categories in a study".* It is a method which controls biases and establishes valid propositions whilst searching for convergence through multiple methods of data collection and analysis, depending on the research spectrum. Moreover, it is a strategy which can be adopted to evaluate findings and develop themes by conceptualising reliability and validity which, as indicated by Golafshani (2003, p. 601) injects "*trustworthiness, rigor, and quality in the study paradigm"*.

Golafshani (2003) further explained that testing and maximising reliability, validity and trustworthiness are critical processes in qualitative research. Reliability refers to the extent to which the research outcomes are an explicit representation of the total population being studied in a way that, if a similar methodology should be acquired, the results would be repeated. Concurrently, validity determines how truthful the outcomes are. For this study, reliability and validity were firstly ensured through the use of a standardised interview guide to demonstrate consistency. Secondly, the criteria considered in the purposive sampling technique assured accurate depiction. Thirdly, respondent triangulation, gathered from the selected firms in various sectors, was considered to increase the trustworthiness.

4.10 ETHICAL CONSIDERATIONS

The Gordon Institute of Business Science (GIBS) has articulated specific ethical principles that need to be addressed prior to the commencement of the data collection. The procedure required the submission of the research methodology and design as well as approved Ethical Clearance Form, Interview Design and the Letter of Informed Consent to the Research Ethics Committee of GIBS (REC).

The intention of said procedure was to secure participants' rights during the research project and to protect them from any form of harm or exploitation. Furthermore, ethical guidelines aim to protect the researcher's rights. The study commenced after the submitted ethical requirements were approved. The Letter of Informed Consent was used to notify participants that their participation was voluntary, and they could withdraw from the study at any time, without penalty. Moreover, storing the data without identifiers ensured the anonymity of the participants.

4.11 LIMITATIONS OF THE RESEARCH METHOD

Because of the extensive volume of data recorded, transcribed, coded, categorised and analysed, qualitative research is time-consuming and labour-intensive. Therefore, it is also prone to errors, unconscious biases and it might overlook certain topics. The researcher's interpretation is limited and the gathered data might thus not be objectively justified (Choy, 2014). Since qualitative research is highly dependent on the researcher's skills, the interpretation might be subject to the researcher's biases. In addition, the informants' biases in the interpretation of their organisations' strategies and approaches could also influence the results of the study. Moreover, confidentiality constraints could be an obstacle in presenting the findings and can thus be considered a research limitation (Saunders & Lewis, 2012).

As indicated by Golafshani (2003), the role of the researcher is to record and present the change events *before* and *after* they occur. Therefore, the efforts of the researcher could impact upon the credibility of the study, specifically as validity and reliability are not separate topics. However, developing testable propositions of CS strategies among the selected sample of various firms in this study, integrated the economic, social and environmental dimensions of sustainability strategies within these organisations. This notion generated a deeper comprehension as to the role of moderators and mediators in evolving strategic interventions which influence the credibility of the research (Sebastiani et al., 2014).

The fact that this study was limited to the context of agri-grain firms, as selected sectors of the grain industry, and only within the geographical region of South Africa, limited the applicability of the results to other sectors in the same industry, or other industries and geographical contexts. The limited sample size identified for this study, although in accordance with explorative research standards, needed to be enlarged to allow for the generalisation of findings. The use of purposive non-probability sampling does not allow for the representation of the entire population, hence, it limits the extent to which conclusions were made based on sample generalisation to the entire population, or other contexts (Creswell, 2009).

4.12 CONCLUSION

To address the objectives of this study, a qualitative approach was adopted as appropriate methodology. Within this context, 26 semi-structured interviews were conducted with executive and strategic managers of agri-grain firms in South Africa. A qualitative framework facilitated the unpacking and exploration of various dimensions of strategic decision-making as regards the corporate sustainability of the firms, the focus dimensions and the enablers and inhibitors of the triple bottom-line for the grain industry, from the informants' perspectives. Findings of the analysis are presented in Chapter 5.

CHAPTER 5: PRESENTATION OF RESULTS

5.1 INTRODUCTION

In this chapter the results of the research questions, as formulated in Chapter 3, are presented. The results constitute the findings of data analysis, collected through in-depth, semi-structured and face-to-face interviews with 26 informants. The chapter commences with a brief explanation regarding the steps followed to gather and analyse the data. Through the use of a consistency matrix, the interview questions were mapped in congruence with the research questions, literature review, data collection tools and method of analysis to ensure consistency (as per Appendix A). The underlying objectives of each question were correlated to the reviewed literature which helped to guide the interview process. However, during the coding and analysis of the interview transcripts, some additional data were identified inductively. This will be discussed in Chapter 6.

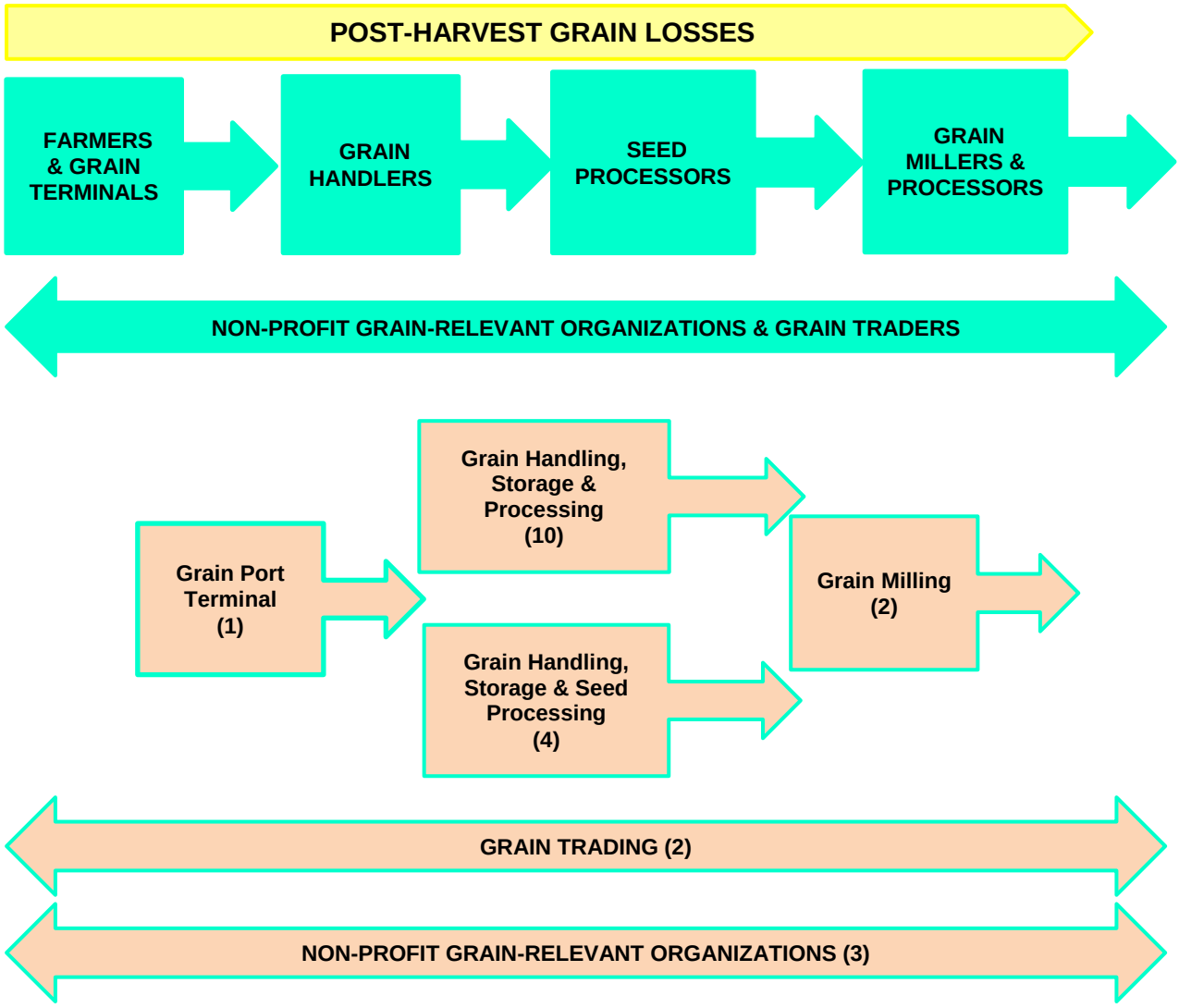
5.2 SUMMARY OF THE DATA GATHERING AND THE ANALYSIS METHOD

A total of 26 interviews were conducted which amounted to a total time of 14h: 6min: 18sec. The average length of an interview was thus 32min: 51sec per interview, with the longest interview being 59min: 57sec. The informants, as described in Chapter 4, held the positions of CEOs, executive managers, senior managers, directors, general managers, managing directors and operation managers. All these individuals had in-depth knowledge and experience regarding the grain industry and they held high levels of seniority in their firms. The interview guideline with introductory headlines, as presented in Appendix C, was used to guide the interviews. The reason for the introductory headlines was to set the scene and contextualise the interview process.

Organisations were particularly chosen from the upstream section, thus the section situated between farms and the processing plants, of the grain value chain. These areas chosen in which to research post-harvest grain losses, the purpose of this study, were located in various geographical parts of the country. The selected sectors consisted of: grain handling, grain storage, grain logistics, grain trading, grain milling and seed processing. Since the data gathering process necessitated that the researcher travels across the country, the entire data set was collected in a period of one month. Gathering data from various geographical regions resulted in consolidated findings regarding the

sustainability of the grain industry, within the time frame of the study. All the interview transcripts were done by the researcher which resulted in an accurate analysis of the data and increased truth worthiness of the findings. Figure 7 illustrates the selected sectors and the number of firms chosen in each sector. The reasoning of the choice, aside from the fact that the organisations were positioned between farms and processing plants, included geographical location and availability of the management for interviews.

- Figure 7: Summary of the number of organisations in the selected sectors (Source: Researcher)



5.3 PRESENTATION OF RESULTS

To achieve a fluid flow in the presentation of results, the findings are presented in accordance with the research questions formulated in Chapter 3 and the Interview Guide

(Appendix C). Construct tables have been included for each interview question. These tables present constructs as well as categories and sub-categories, quantified in the content analysis approach and presented with the total frequency of being mentioned in the entire data set. Consequently, sub-categories and categories were used to create constructs pertaining to that specific question. Constructs, in addition, have been ranked according to their frequency of appearance and are presented in said ranking order. The tables in each part have been supported with direct verbatim quotations mentioned by the informants. Table of codes, sub-categories and categories are presented in Appendix E.

5.3.1 Results for Research Question 1

RESEARCH QUESTION 1: To what extent are Corporate Sustainability Strategies understood and measured by South African Agri-grain firms?

The aim of Research Question 1 was to elucidate the perceived understanding of corporate sustainability strategies and dimensions being studied within selected agri-grain firms. Furthermore, the question sought to explore and understand how the impact of the CS strategies was measured in the interviewed organisations. Research Question 1 was sub-divided into three interview questions and the responses were grouped accordingly.

5.3.1.1 Understanding Corporate Sustainability Strategies

The first interview question urged informants to explore and establish a common understanding of the concept of corporate sustainability strategies. The informants gave their views as to their perceptions, understating and definitions regarding corporate sustainability strategies. The understandings of the informants, from different sectors, varied and were finally grouped into 10 major constructs which were ranked from one to four, based on the frequency. Table 5 demonstrates the responses, as ranked constructs, which were also rooted in quantified categories and sub-categories.

- Table 5: Understanding of Corporate Sustainability Strategies
  (Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Frequency of Mention in the Data-set
1	Corporate sustainability strategies as triple bottom-line, considering economic, social, and environmental, Involvement of various elements, and not just one aspect.	7	Corporate Strategy and Strategy Execution.	227
			Sustainability, Corporate Sustainability Strategy and Sustaining over a long run.	271
			Environment and Planet.	209
			Community and Social Responsibility	159
2	Being profitable, increasing the market share and profitability in the long run.	6	Profitability, making money, increasing market share, growth and competitiveness.	1 375
2	Serving the community, serving the community as the client of future.	6	Stakeholder Management and Supply Chain Management.	1 413
			Community and Social Responsibility.	159
2	Adapting to consumer needs and patterns, adapting to technology and being competitive, locally and internationally.	6	Regulatory Regime.	369
			Stakeholder Management.	353
			Technology and Technological Adaption.	349
3	Providing quality services and products and fulfilling customers' needs.	3	Stakeholder management.	353
3	Value adding at affordable pricing to customers.	3	Supply chain management.	1 060

3	Environmental importance, adaptability to environment and diversification.	3	Environment and Planet.	209
			Diversification.	2
3	Vision for organisation, people and corporate culture	3	People and Corporate Culture.	807
			Corporate Strategy and Strategy Execution	227
4	Considering the next generation, future and sustainability in the long-run.	2	Sustainability, Corporate Sustainability Strategy and Sustaining over a long run.	271
4	Land security and land ownership.	2	Regulatory Regime.	369

As indicated by the first construct, most informants demonstrated their understanding of corporate sustainability strategies by ensuring that various dimensions were taken into consideration. Some of these informants defined their understanding in terms of the triple bottom-line with strategies that address the economic, social and environmental aspects. Other managers noted additional elements that were, either currently included in their strategies, or it should be considered as corporate sustainability strategy elements according to them.

"Sustainability means that you, can over a long period of time, maintain or remain in business. So, obviously what you do is to develop strategies, from time to time, to ensure that you remain profitable over time. But sustainability is not just economic sustainability or financial, it is also environmental and social sustainability components of triple bottom-line, as it is commonly known." Informant 6

"Corporate sustainability is looking at very-high level corporate triple bottom-line reporting, succession planning, international investors, confidence… I guess it depends on the layers of sophistication of the business. For the listed entities, they should look at sustainability from a different perspective, corporate social investment, compliance with JSE requirements, profitability requirements, export quotas, import and export, trade barriers, because a lot of them export a lot of goods as well." Informant 5

"Corporate sustainability is around the triple bottom-line, basically, and some areas are broken down a little further. The ones I have got is your ethical side, your social side, your environmental side, your cultural side, and your economic side. So, I think that is corporate sustainability, to carry forward basically around those areas." Informant 26

Moreover, one interviewee highlighted the importance of considering the balance between the various dimensions of the execution, or development, of corporate sustainability strategies.

"Profit is one aspect that speaks to sustainability and that speaks to environmental sustainability and social sustainability. You need to have a balance in your corporate strategy between a profit incentive, environmental sustainability in terms of practices and social sustainability, in terms of your human resources, your community, etc. If you don't have the balance, you are not going to be sustainable over time." Informant 21

One informant indicated the importance of the environmental aspect in the definition of corporate sustainability strategies.

"Corporate sustainability strategies, I only saw it as one leg in terms of the bottom-line, but we all know that environmental impact is definitely a great concern these days, so I must say that the focus has changed a lot to environmental impact." Informant 19

The importance of being profitable, particularly over a long period of time, and increasing the market share, or growth, thus being able to carry on to future while making money was ranked as the second construct.

"From the financial perspective, first of all, you have got to run your business in a sustainable manner and in order to be sustainable you need to make money to reinvest and to pay your people and to have an incentive for the investors to be there…"
Informant 10

"Being sustainable, as a goal, would be to keep your market share and increase your market share over time, otherwise you will not be sustainable in your core business." Informant 12

For one member of top management, growth remained a focus of corporate sustainability strategies.

"If we look at what we have to do to remain relevant, it has to be a conscious effort to have strategies in place for short, medium, and long-term growth. There are two different ways to be sustainable, one is growth, obviously, and the other way is consolidation, but then to focus on your inefficiencies or efficiencies." Informant 17

Alongside profitability and long-run sustainability, being able to serve the community and support farmers to stay profitable were ranked equally to being profitable, as indicated by six other informants. These managers considered communities as the clients of the future.

"If I look at our type of business, which is a cooperative, it will contain long-term sustainability of our business and also the long-term sustainability impact of our business on the community. We are cooperative, and cooperative is inclined in the community and if the cooperative is not doing well, then the community will be affected." Informant 9

One interviewee took the notion of serving the community and customer, in the context of corporate sustainability strategies, even further by indicating the importance of serving "customers' customers" as part of these strategies.

"First of all, sustainability for me is the time horizon between 15 – 25 years. So, it is a long-term view. In terms of what it covers, it is not only inside the organization, it is looking after the immediate boundaries, it is outside of my boundaries. So, it is my customers' customers. It is my neighbours. If everybody looks not just within their boundaries but outside their boundaries, the whole environment will improve." Informant 22

The adaptability of corporate sustainability strategies was mentioned by the same number of interviewees as a reason for the change in consumer patterns and hence being able to look after clients and focus on their needs remain competitive. Remaining competitive, locally and internationally, as well as adapting to technology while developing strategies to remain sustainable was also mentioned by informants grouped under this construct and ranked the second.

"You have to adapt strategies because the trends are changing. Type of strategies should be understood and is based on the consumer, what the consumer wants and how do you provide competitive and affordable prices and you are part of the value chain and should remain competitive in the international level. If you want to remain competitive in business strategy for sustainability, you should look at competitiveness because you are competing with a lot of companies in South Africa but also internationally." Informant 6

"Sustainability is the way you have to change to keep up and adapt to new technologies. One of the strategies is adopting with new technology and advance in that." Informant 12

Following the importance of considering customers' requirements as part of the understanding of corporate sustainability strategies, providing quality services and products to be able to fulfil clients' needs over a long period of time, and thus understanding the demands of customers, were also indicated as part of corporate sustainability strategies for some informants. This construct was ranked third in the table of constructs.

"*We need to focus to stay sustainable over a long period, so it is crucial for us to provide quality services and products as well as services and products that are acceptable for the clients and this means it needs to be changed over time because their needs and preferences change over time." Informant 8*

"Sustainability for us is to be sustainable providing services in the grain industry for a period of time. Our main aim is to guarantee quality and quantity in the grain handling environment." Informant 15

Some informants highlighted the importance of adding value through the grain value chain to be able to fulfil customers' needs, and thus maintain good relationships with customers, as their understanding of corporate sustainability strategies for their firms. This construct was also ranked third.

"For our company, good relations with our customers would mean adding value to your customer. Obviously, there is going to be value adding created in the whole chain because that will ensure long-term sustainability if you creating value for your customer and your customer is creating value for you." Informant 20

In alignment with adding value as part of the understanding of corporate sustainability strategies, one informant also mentioned considering the affordability of the end product without diminishing its quality.

"In my understanding corporate sustainability strategies starts from the procurement of raw materials to make it a finished product and what we require here is to get the right product at right pricing and sell it to the customer or end user in an affordable pricing and in this way, we should always remember the quality comes first. Our strategy is to procure the

right type of grain to give the right quality to the end user at an affordable pricing." Informant 24

For one interviewee, corporate sustainability strategy is being about adaptable to the environment, or nature, and hence diversifying accordingly. However, diversification was also mentioned in employing corporate strategies to remain sustainable.

"The climate plays a big role in the harvest. It is easy to set up a budget but you can't miscalculate or disrespect the nature. For the company to be sustainable you must spread your wings and you must do more diverse." Informant 4

"It is not about only primary agriculture anymore, back in the day the whole strategy was focused around primary agriculture and the farmer and of course the farmers play a role in the value chain but if you look at corporate strategies, it is how I should diversify my risks, how I remain sustainable." Informant 21

While for one informant, understanding of corporate sustainability strategy is about having a vision for the people who will execute the strategy. The two more informants also highlighted the importance of people in their firms, as part of the strategies. This apprehension was considered separately as one construct and ranked as the third according to the frequency it was mentioned.

"If you don't have a vision, you don't have a strategy, you don't know where you are going, and very important for me is that the people that are physically going to live out the strategy, and they must buy into that. If they don't, you are wasting your time thinking of that strategy." Informant 2

"Obviously besides all the factors going into sustainability, you need to ensure you have the right people, right skills while you are environmentally friendly and the in the community you are working, you are sustainable." Informant 6

Considering people to be part of the strategy, one informant identified the culture of the organisation as part of the understanding of corporate sustainability strategies.

"It is a culture and the culture must not be just inside the organisation, but outside as well." Informant 22

Other informants highlighted the importance of considering the next generation in the development of corporate sustainability strategies and hence linked sustainability to sustaining for a long period of time. This construct was ranked as the fourth definition.

"Corporate sustainability speaks to the ability of large organisations to do business in such a manner that ensures long-term longevity and it has various focus areas which should ensure that a corporation remains in business for a long period of time." Informant 14

For one interviewee, the critical importance of security in land ownership for the farmers, was the main element of sustainability while another informant mentioned the land issue as a threat to the sustainability of the grain industry in South Africa. This understanding was considered a separate construct and was ranked as the fourth.

"But even if is profitability, if you don't have security, profitability means nothing. Touching on sustainability issues in terms of farming sustainability, a lot of people say I cannot be sustainable if I don't have the ownership." Informant 21

"Corporate sustainability strategies are obviously to help the industry to be sustainable. With regards to South Africa, I think the most sustainable is to have everybody included and at the moment the buzzword is the land grab. I think if we don't tick that box or we don't get that right, sustainability with regards to the grain industry in South Africa will definitely stay a threat." Informant 23

5.3.1.1.1 Summary

Considering the findings for the first interview question, as well as the overarching table of constructs, it can be concluded that the majority of participants, in top management positions in the grain industry, do understand corporate sustainability strategies and their impact on the social, environmental and economic dimensions. These were, mostly, categorised under the first construct mentioned in the triple bottom-line.

Categorised under the second construct (running a profitable business, serving the community as well as adapting to consumer needs and technology) facilitated the understanding of corporate sustainability strategies. In addition, four more definitions as four separate constructs ranked as the third construct (providing quality services and products to fulfil costumers' needs, value adding, adaptability to environmental aspects and diversification as well as the importance of vision for the organisation, its people and

corporate culture) which underscore a further understanding of corporate sustainability strategies. The last constructs, ranked the fourth, referred to the significance of considering the next generation, land security and land ownership in the light of understanding of the CS strategies as critical elements of sustainability of the grain industry.

5.3.1.2 The Focus Dimensions of Sustainability Strategies

The second interview questions asked the informants to highlight the dimensions of corporate sustainability strategies that their corporates, or firms, were focusing on. The informants presented both their personal and organisational views on the key aspects that drive sustainability in their organisations. Some interviewees also indicated that the mentioned dimensions were important sustainability drivers in the grain industry.

- Table 6: Focus Dimensions of Corporate Strategies that Drive Sustainability in agri-grain Firms

(Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Frequency of Mention in the Dataset
1	Empowering farmers, keeping farmers on the land and upscaling farming in South Africa	8	Supply Chain Management Farm and Farming (83). Farming Industry (42), Agriculture (42), Agribusiness (4), Farmer and Producer (332).	1 060
			Regulatory Regime Land Issue and Constitution (90).	369
2	Value adding, completing the value chain and providing a quality product.	7	Supply Chain Management Value adding (27).	1 060
3		6	Stakeholder Management	353

	Customers' and clients' needs in alignment with the impact on a community.		Customer and Clients (126).	
			Community and Social Responsibility.	159
3	People, developing leadership and the culture of organisation, providing safety and a safe work environment for the employees.	6	People and Corporate Culture.	807
4	Regulatory regime, government policies and regulations, land issue and the local infrastructure, including water management.	5	Regulatory regime.	369
			Local government and infrastructure.	214
4	Technology and equipment.	5	Technology and technology efficiency.	349
5	The three dimensions of sustainability, or the 3Ps, of triple bottom-line and the balance between them.	4	Sustainability, triple bottom-line and corporate sustainability strategies.	271
5	Profitability, economic growth and business growth.	4	Profitability and economic sustainability.	1 375
6	Environmental aspects and being environmentally friendly.	3	Environment and Planet.	209
6	Expansion and developing the footprint in the country.	3	Profitability and economic sustainability. Expansion and developing footprint (33).	1 375
7	Social responsibility and job creation.	2	Community and Social Responsibility.	159
			People and corporate culture. Employment and Job creation (18).	807

8	Food safety and traceability.	1	Food Safety and Food Security Traceability (8).	157
8	Diversification.	1	Risk Management Diversification (2).	71
8	Location and winning the transportation game.	1	Supply Chain Management Transportation and Logistics (61).	1 060

Most informants indicated what really mattered, not only for their firms, but for the industry as a whole, was empowering farmers and keeping them on their farms to produce. Thus, most interviewees highlighted the uplifting, motivating and support of South African farmers as a focus area for their corporate sustainability strategies. They believed that this is the way in which their firms, and the whole industry, will survive and become sustainable. One interviewee, who was very concerned about expropriation without compensation, emphasised the transformation process to recruit new farmers and scaling up existing farmers to a commercial level as the most pressing area of focus in the grain industry in South Africa.

"If I take that there will be no expropriation without compensation, then enough emphasis will be placed on the transformation process and that we get new farmers to enter agriculture on a small scale, or even on the commercial scale." Informant 18

"I think we, as an agricultural business, want to keep our farmers on their land. Farmers should be on their land to produce food for the tables of South Africans." Informant 15

"Our main focus is not profit driven but it is to make sure that the long-term sustainability of our farmers is secured." Informant 9

Informants also mentioned that they were trying to complete the grain value chain through value adding and providing quality products. In fact, delivering quality products at affordable prices and increasing the profitability of their firms was a focus area in their sustainability strategies. This construct was ranked the second.

"To add more value to the primary product that we have in the area, because if we just work with the primary product as such, the profitability of it is not good but if you add value

by doing Agri-processing, that is different. Actually we have to do, otherwise we won't survive." Informant 21

"Our strategy is to complete the whole chain. We want to produce the full package for the farmer and we want to help him to stay and farm and we get the product back and this makes us sustainable." Informant 4

Customers' and clients' needs was the focus area which was ranked as the third construct. In some cases, this was even identified as the vision of the organisation or the reason to survive and be sustainable in the business.

"Our vision says to be there for the consumer." Informant 25

"The first one will be our clients or our producers or farmers. They also have to be sustainable to keep their business. We have to listen to them for us to stay in business." Informant 12

One of the informants, under this construct, mentioned that their focus on ensuring the sustainability of their customers has also impacted on the local community.

"If we look at the aspects pertaining to the sustainability for us, what is very important is that we would like to strengthen our client based which is the members of the co-ops, by doing that we also have an impact on the local community which is the farmers." Informant 9

Providing a safe work environment for employees, educating and empowering people in the organisation, developing leadership, the culture of the organisation as well as integrity was mentioned by six informants as the focus area in their corporate strategies towards making their firms more sustainable.

"People is very important because somebody must drive the technology but also implementing it and executing it. So, you need to identify the right people and then you have to enrol and empower them with the right knowledge and training to be an enabler for the farmer." Informant 2

"We spent a lot of time on leadership development in order to get our managers to become a good leader." Informant 18

“The occupational, health, and safety for our people that work for us. We educate a lot of our people to give them the ability to do what they need to do.” Informant 8

Some executive managers, mainly from the industry perspective, highlighted regulatory regime, or governmental policies and legislation, including the land issue in the country (expropriation without compensation) pertinent at the time of research as well as local infrastructure (particularly water management in the country).

“One of the aspects is the policy and legislative environment, the rules of the game as we call it. We need to ensure that we get the systems that have got the right legislation and right policy so that we can compete and we can be competitive and that brings sustainability. We need good rules and regulations that we agree with that, it must be in line with international rules and regulations. The ramification of what is happening internationally is also influencing local markets and the sustainability of local players. We are representative to engage with the government on policy and legislation. It touches on water and land reform and so many aspects. We have to do research to understand what is happening internationally and how to reposition yourself.” Informant 6

“The one is agricultural land because without that the whole economy of the agricultural sector will be at risk. We fund a lot of our production activities against the value of the land or the assets on the land and the whole banking system is functioning on the same basis. So, on a national scale, the property right is a key component.” Informant 5

Management of water resources was ranked under the same construct along with consequences of government’s policies and legislation as areas of concern for management in the grain industry. One executive highlighted the need for the government to contribute to water management.

“The next thing is climate change and water management that goes hand in hand. National drought, climate change adaption. What that practically means is that we need to use less water and the water management. The government has not come really to the party in terms of managing water structure.” Informant 5

A few more interviewees emphasised the importance of technology, or access to technology, and having the right equipment as an area of focus in their firms. One of the informants indicated that using technology helps them to limit operational costs to the advantage of their clients.

"Our other focus is technology. We, as a company, embrace technology, we realize that we are living in the fourth Industrial evolution and I realize what we can do with high-level technology as well as artificial technology that we really need in terms of climatic prediction, pricing mechanism, the forecast of production, consumption patterns and in terms of the competition." Informant 18

"We use technology to bring down cost so the cost is there that is a physical advantage for our clients and if you look at the whole production cycle that puts him in a better position in his whole farming process." Informant 2

Some executive managers specified a focus on the three dimensions of sustainability strategies, or they indicated that going forward it was part of their agenda to focus on the three aspects. One informant emphasised that balancing these sustainability dimensions was a focus area in his firm.

"We focus on all of them with a view to creating a conducive environment for business for all the Agri-grain firms. So, in our work on a daily basis, we will pay attention to issues that affect the people in the industry as well as the environmental aspects and then also on the matters that would affect the profitability of a company." Informant 3

"We are starting with that but we are probably miles behind. But in any new project that we do is highly focused around the triple bottom-line." Informant 27

"I think the aspect comes back to getting the balance between profit, environmental, and social." Informant 21

Most informants mentioned focusing on profitability, or the economic impact of sustainability, or economic growth. Some of them mentioned profitability as a prerequisite to other dimensions of sustainability in their firms. However, some informants generalised the economic focus to an industry perspective and not their specific corporate view.

"We focus on all the sustainability strategies but I think if you look at our country, most companies focus on the economic side and I think that is general. Because the first thing to be sustainable is to be profitable in the long run and if you don't have the profits, you are going to battle on the social and economic part." Informant 27

"We focus on the economic side. There is potential for both social and environmental upliftment… definitely potential for it. It is just that we have not considered it." Informant 11

Ranked under the same construct, two informants supported the notion of growth and an increase in market share as the focus areas in their firms.

"First of all, we as a business must grow. So, we have got the eight years growth strategy that it has a plan of action to say where we want to grow, how fast we want to grow and in which areas we want to grow. That is basically our guideline to double our businesses." Informant 18

A few interviewees highlighted the focus on environmental aspects, particularly focusing on resolving the dust problem, as part of their corporate strategies.

"We are definitely looking at environmental concerns and constraints and make sure of sustainability through the development of our footprint. We also want to increase our footprint on the irrigation side of the country." Informant 19

"Dust is another big one, not only for our own employees and contractors, but for our neighbours. I have a more environmental focus, for me issues like the recycling of products, electricity consumption, and then just general house-keeping is very important." Informant 22

A few more interviewees combined the notion of caring for environment with the expansion of their footprint in the country, especially in areas where water is more abundant, as a focus area in their organisations.

"Expanding our footprint in areas where there is water and there is production, we are looking for an opportunity to have footprint so growing our footprint in special areas." Informant 13

In addition, two other informants referred to social responsibility and focusing on communities and social programmes, as well as job creation, as a focus area of their corporate sustainability strategies.

"We have unique areas that cover social responsibility but there is also business processes and ethical business processes to ensure that the business continues in future. We

adapted our business strategies to ensure that, despite things outside of our control, we are still in the position to operate for the benefit of not only our stakeholders but also for the benefit of communities at large. One of the responsibilities will be that we create jobs and we create long-term roles." Informant 14

Focusing on food safety, traceability and the provision of healthy, safe food throughout the value chain was mentioned by one senior manager in the processing sector as a focus dimension.

"On the food side, we focus on the handling process where we receive it from the farmer up to where we dispatch it to a processor and that whole chain that we handle it, we focus on to have traceability to provide healthy and safe grain for food purposes where it is getting processed." Informant 8

Moreover, one interviewee indicated the focus on diversification, from a geographic and product portfolio perspective, as the main dimension of in his firm's sustainability strategies.

"We ensure that we continue to diversify our product range even though if we are still in agriculture. Diversification as a focus area, geographic as well as product." Informant 14

Focusing on transportation efficiency, in correlation with location, was mentioned by one of the senior managers in the processing sector and ranked as the last construct.

"Location is very important. We are in milling game but at the end of the day, it is actually a transport game that can make the break in the industry. You need to focus on logistics side and your transport cost which is basically the function of how far you are from your raw material and also how far you are from your market." Informant 23

5.3.1.2.1 Summary

In conclusion, and as per the findings for the second interview question, most interviewees focused on supporting, or upscaling, farmers to stay on their farms and continue producing. This was followed by trying to complete the value chain by producing value-added quality products in the upstream section of the chain, as the first and the second ranked construct. Since many informants in this construct are in the storing and handling sector, the results

could be an indication as to the importance of ensuring the sustainability of their customers in the downstream, and upstream, section of the value chain.

The third and the fourth ranked focus areas consisted of: focusing on customers' needs, people and developing leadership, dealing with government policies, land issue and water management as well as the focus on technology and equipment. The following constructs, ranked the fifth and the sixth, highlighted the importance of focusing on three dimensions: profitability, environmental aspects and expanding the footprint in the country. Focusing on social responsibility was the next dimension and was ranked as the seventh construct. In the end, the last ranked constructs focused on: food safety, diversification and transportation efficiency.

5.3.1.3 Measurement of the Impact of Sustainability Strategies Dimensions

The third interview question prompted the informants to elaborate on how the impact of the focused dimensions of sustainability strategies were measured within their corporates. This was validated from non-profit organisations' perspectives which explained how the measurements were normally done in the grain value chain. Various views were offered in response to this question. These are presented below constructs.

- Table 7: Measurement Tools of the Impact of the CS Strategies Dimensions
  (Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the dataset
1	Measuring bottom-line or financially, measuring the market growth, economic measurement and annual reporting, linked to measuring the profitability of farming business and diversification	16	Profitability and economic sustainability.	1 375
2	Measuring through internal and external audits, risk register and	7	Profitability and economic sustainability,	1 375

	risk management, adhering to HACAP guidelines and quality assurance checklists.		Internal and External Audits (17).	
			Food Safety and Food Security, HACAP Guidelines and Quality Assurance Checklist (14).	157
			Risk Management.	71
3	Measuring customer loyalty, customer participation in business and measuring customers' complaints.	5	Stakeholder Management Customer and Clients (126), Services and Quality Service (39).	353
4	Measuring the performance and efficiency of people through KPIs, measuring the efficiency of operations through system management.	4	People and Corporate Culture, Performance and KPIs (15), Leader and leadership (9), Skill and Skill development (28), Education and Training (33), Management and Organisational culture (182).	807
			Supply chain management Systems and Operations (51).	1 060
4	Measuring electricity consumption and water usage.	4	Local Government and Infrastructure, Electricity and Electricity Usage (32), Water and Water Management (52).	214
4	Measuring social responsibility and investment in communities.	4	Profitability and Economic Sustainability, Investment and ROI (91).	1 375

			Community and Social Responsibility.	159
5	Triple bottom-line reporting and measuring sustainability.	3	Sustainability and Triple bottom-line.	271
5	Not measuring because it is difficult to quantify.	3	-	-
6	Measuring the milling extraction.	2	Grain and Grain Management, Milling and Processing Plants (162).	2 028
6	Measuring stocks and handling losses.	2	Grain and Grain Management, Grain Losses (323), Grain Handling (127), Stock & Stock Management (82).	2 028
7	Measuring environmental aspects.	1	Planet and Environment.	209
7	Measuring yield or farming production output.	1	Grain and Grain Management, Grain Production (174), Productivity and yield (45).	2 028
			Supply Chain Management, Farming Process and Farmer (457).	1 060

Most informants indicated that the way in which they measure the impact of their firms' sustainability strategies is in economic terms, measurement or measuring the bottom line. Furthermore, a few participants added that the annual reporting of their economic situation is how they measure their sustainability. Therefore, financial measurement was ranked as the first construct with regards to responses to this question.

"As you know agriculture is basically a twelve month cycle, from planting to production, and then if you only focus on one geographical area you will get a lot of your revenue in one, or two, months of the year so we must also ensure that the cycle becomes flatter and we ensure that we are profitable throughout the year, so a lot of the measurement of that would be financial but it also allowed us not necessarily in the grain business but also in

the equipment business to look at other parts of agricultural value chain to ensure our sustainability." Informant 14

"First of all to be in business, you must be market-related. If you look at the prices and the cost of services you give to farmers. This is the first. You cannot be sustainable by any chance if you are out of the market with that. Market share is definitely one that we do measure especially in the grain all the time and growing our business." Informant 13

In some instances measuring the market share or the market growth, was highlighted as the measurement tool to evaluate the impact of the firms' strategies.

"In any company you must measure it in your market share. Market share on the one hand and then I think your sustainability in that market share over more than one year is very important to see whether your current strategy is only spiking or if it is sustainable over a longer period of time. Longer period means 5 – 10 years, things are changing so much these days that you can't have a strategy for more than 10 years." Informant 2

Some organisations only focus on the *economic aspect* of the business and thus measure this dimension only.

"It is measured as a profit or loss, whether we make profit or loss. We focus purely on the economic situation, we have a decision to make and that is based on the economic basis. Our intention as a trading company is to maximize our economic profit." Informant 11

One informant, whose response was considered under the mentioned construct, indicated that the impact of sustainability strategies on the profitability of the farming business which they are dealing with, is a way of measuring in his organisation. Another manager in the grain handling and processing sector emphasised the measurement of diversification, or market growth, in various segments to ensure the sustainability of his firm.

"To understand the profitability of the farming business, we need to know what lands generate the returns. So we trying to get back the principles of farming operation which might have multiple legal entities and has either its own assets or leased assets to produce returns." Informant 7

"We have completely different exposure to different commodities, so the diversification is also measured, and we ensure that we continue to diversify our product range even though if we are still in agriculture." Informant 14

The second ranked constructs, mainly mentioned by informants involved in the handling, storage and processing of grain, were: internal and external audits, active risk register and risk management, adherence to HACCP guidelines and quality assurance checklists as well as how they measure the impact of their sustainability strategies.

"We have got internal audits as well as external and we have got risk register where all the major risk of the company, actually in the company and in each department is listed and then we use that for audit purpose and also it is the core of our strategy and our daily way we work. We use that to make sure we cover all those risks… and that all our ways or the processors are in place to ensure we adhere and cover everything there." Informant 8

"It is not just annual reporting, the very important reporting that is coming these days is the risk reporting and your risk management. Because to ensure sustainability, one of the best dimensions is to have an Active Risk Register, if the company has often combined with the audit. So, you have a dedicated risk committee and all it does, it lists all possible risks and all possible incidents of that risk and then also evaluate how well you are positioned to manage that risk and then they use various colors on how you are able to manage it, or not manage it. So, I believe there is a more proactive way of looking at risk. So, it is not just measuring the annual statements but the risk register and the way you deal with risk within the committees of the board meetings are very important." Informant 6

Interviewees emphasised measuring the loyalty of their customers and the participation of their clients in business. One informant identified measuring customers' complaints as a way to ascertain their satisfaction and thus the sustainability of the organisation. The construct has been ranked the third.

"It is the participation of our clients in the business and the measurement that they are faithful to us as the co-op because the co-op is actually their business. That is the way that we measure it. It is the amount of business that farmers do with the co-op." Informant 9

"We measure our farmer business, or we measure how much business the farmer does with the company or what business he does with the co-op. We got a system and when a farmer does business with us, there is a percentage that he can get as a bonus back.

There is a system that we measure that it is like customer loyalty system in place that motivates them, and this is how we measure the amount of business they do with us and that is like a pension for them." Informant 4

A few interviewees explained the measurement of strategies in their firms in terms of the performance and efficiency of their staff through the defined KPIs. Thus, measuring the efficiency of their operations through the system management.

"It is man management, it is product management, and it is visible management obviously supported by systems. That's what drives the business and that is how we evaluate our people and how we evaluate the capital equipment that we are buying." Informant 10

"We do a lot of measuring, either our people's performance are measured, so we have got KPIs that everyone agreed on and the final evaluation is done at the end of the year." Informant 8

Some informants relied on measuring electricity consumption and/or recording water usage by installing water meters.

"From the agricultural perspective the whole issue around climate change and monitoring our water resources is critical in Western Cape. We have got all farmers to have water meters so that we can start monitoring what is happening there." Informant 5

"I think we should know what our electricity consumption is." Informant 22

Some executive managers specified that they measure the impact of their sustainability strategies via their involvement with and contribution to communities and the investment in creating employment.

"There is a way of nationally looking at these things. We have written up the number of emerging farmers that we are dealing with here. We have the report now and we want to take the sustainability of those farmers to the next level. From the society perspective is the upliftment of the people that previously disadvantaged. From a societal perspective, it is something we are doing." Informant 5

"Doesn't everything go down to profit, to the value to the shareholder, the monetary value that is one aspect, I think we have got a strong focus on the social aspect as well. We

invest in the rural areas, to try to contribute to communities in terms of employment creation. So, we look at our local footprint to say we don't really measure, but we do consider." Informant 21

Non-profit organisations indicated that most firms in the grain value chain do sustainability reporting and measurements are and thus are complied with triple bottom-line reporting. Only one organisation confirmed financial, and non-financial, measurements but did not explain the measurement procedure in further details.

"Annual reporting needed to be done besides the proper assessment on your environmental impact and the social impact on the triple bottom line reporting and yes companies generally do that. In fact, most of the companies on JSE are compiled to report on the triple bottom-line but most companies these days embracing for governance guidelines in which the annual reporting on the triple bottom-line is highly recommended." Informant 6

"Most of the firms in their annual reports they would categorise the information according to people, planet and profit. I think there is a certain report that companies have to complete regarding this. I think it is called sustainability report." Informant 3

A few informants mentioned that they could not measure the impact of their strategies. One informant referred to challenges within the South African context.

"There is a big challenge in South Africa for measuring these effectively because I think we have first world technology available but throughout the country that you work with a lot of third-world areas as well, a lot of these impacts, you can't properly measure." Informant 26

Two informants, from the grain processing sector, indicated that they do their measuring according to milling extraction.

"*In milling side, in terms of measurement, is the extraction." Informant 19*

Two other senior managers in the grain handling sector specified that they measure their stocks and the losses in handling the grain.

"We have got stock inventory systems in place to manage the quantity and also the quality, so there are several. We do weekly measurements on our stock and we apply with our books to see that we always keep on our quantity." Informant 15

"On the handling of the grain and that is the losses, so we measure that with the losses that we have on a daily basis." Informant 19

Only one interviewee, from a non-profit organisations in the grain industry, referred to measuring the environmental aspect of their sustainability strategies by working with environmental organisations, also within a global context.

"From the environmental perspective, this relates to a couple of things and then CO2 emission. It is also related to our Natural Resources Centers of excellence there is also protection aspect to the environment we are working with. We are also working with the World wildlife fund and the center for the environmental right to make sure that we have the right partners." Informant 5

Furthermore, a senior manager involved in the farming and grain handling sector, indicated that they measure the yield, or production quantity.

"In terms of the production of the maize, we are definitely measuring that. We most effectively apply the right nutrition to the plant and obviously that we get the best yield at the cost-effective prices and then we got the agricultural agronomist that tests and measures that." Informant 19

5.3.1.3.1 Summary

All in all, considering the table of constructs as a result of how the impact of sustainability strategies are measured within agri-grain firms, the study concluded that most informants measure the impact in accordance with the profitability of their firms. The frequency of this construct was more than double when compared to the second construct, which informants indicated as internal and external audits, as a way of measuring the impact of their strategies. Accordingly, measuring customers' loyalty, the performance of employees, measuring electricity consumption and/or water usage as well as measuring the contribution to communities was ranked as the third and the fourth constructs, orderly.

The fifth ranked constructs present two extreme measurement procedures: one construct being the triple bottom-line reporting and the other being zero measurement (the informants clearly indicated that measuring the impact of their strategies was too difficult to quantify). Measuring milling extraction and stock management formed the sixth construct while measuring the environmental aspect and measuring yield, were the last constructs, each mentioned by only one participant.

5.3.1.4 Conclusion: Research Question 1

In response to Research Question 1, as regards understanding corporate sustainability strategies and how they are measured within agri-grain firms, it can be concluded that the majority of executive and senior managers who participated in the study had a fairly good understanding of their corporate sustainability strategies and most of them defined the strategies in line with the 3Ps of the triple bottom-line. However, informants experienced the more detailed questions, focusing on specific areas and the measurement of specific impacts, difficult to answer. Some individuals, however, did have a clear picture of the focus dimensions and measurement approach.

5.3.2 Results for Research Question 2

RESEARCH QUESTION 2: What are the enablers and inhibitors to implementing corporate sustainability strategies in the grain industry and what is the most dominant enabler?

Research Question 2 aimed to gain insight into those factors which enabled, or inhibited, the implementation of the CS strategies within the interviewed organisations. In addition, this question sought to elucidate the most dominant enabler in the execution of sustainability strategies within the involved corporates and from the industry's perspective.

5.3.2.1 Enablers in the Execution of Corporate Sustainability Strategies

The fourth interview question motivated informants to reflect upon the enablers, or drivers, which could assist them in implementing CS strategies in their organisations. Some of the views covered a broader perspective highlighting enablers of sustainable strategy execution in the grain industry.

- Table 8: Ranked Enablers of the Implementation of Corporate Sustainability Strategies according to Frequency Mentioned

(Resource: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the dataset
1	Leadership, believing in people, people management and providing an enabling environment to develop skills and recruit skilled people, teamwork and organisational culture.	21	People and Corporate Culture.	807
2	Capital, financing and offering financing solutions and credits, linked to managing costs, and having a sound balance sheet.	14	Profitability and economic sustainability.	1 375
3	Understanding customers and their needs and relationship with clients, client-focused culture to keep customers happy by providing services to thus completing the value chain.	10	**Supply Chain Management** Value Chain (95), Value adding (27).	1 060
			Stakeholder Management Customer (126), Service delivery (39).	353
4	Technology, access to technology and information, doing research and development and continuous improvement.	8	Technology and technological efficiency.	349
5	To support farmers and to help them to stay on the land, the land itself, and increasing production or yield.	6	Supply Chain Management.	1 060
			Regulatory Regime Land and Land Reform (89).	369
6	Marker reputation, market growth and competitiveness or	5		1 375

	competing locally and internationally.		Profitability and economic sustainability.	
6	Quality and providing a quality product, food safety and food security linked to traceability.	5	Food Safety and Food Security, Food safety (24), Quality Product (52), traceability (8).	157
7	Social responsibility and serving the community.	3	Community and Social Responsibility.	159
7	Local infrastructure for efficient transportation linked to location and service delivery by municipalities.	3	Local government and Infrastructure.	214
8	Integration of the value chain and increased cooperation.	2	**Supply Chain Management** Value Chain (95), Integration (5).	1 060
9	Climate and nature.	1	Planet and Environment.	209
9	Care about environment.	1	Planet and Environment.	209
9	Institutional capacity.	1	**Regulatory Regime** Institutions and Institutional Capacity (11).	369

For most informants, people, believing in people, management of human resources and providing an enabling environment for people to grow and develop their skills was a critical enabler. Respondents stressed that acquiring the right people with the right skills sets was an important enabler towards implementing their strategies.

"Believing in the people that work here, then the same people are doing much more than they did and they are enjoying it, I think it is about enabling the environment which they are working in. So suddenly we have got 200 people which are looking forward to coming to work." Informant 22

"I would definitely say firstly it is employees. Employees are always enabler if they are happy and they are part of your strategy from the first day, then that is a huge enabler for your business, it is also when the board buys in and supports management in the strategy.

They are huge enablers for us. At the end of the day, you can say enablers, like money, but the biggest enabler is the support of your employees and the support of your board and the management that is the big enabler." Informant 1

Furthermore, leadership was recognised as profoundly important for some of the interviewees during the conversations. A few informants emphasised that the strategy of their firms focused on nurturing leadership.

"We have a huge focus exactly in the company to change managers into leaders. It makes it easier if you have a leadership team than when you only have one or two individual leaders and the company is driving towards the same purpose and not outcome. In the difficult time, leadership becomes critical, so once leadership understands that the plan is not the problem, it is the external factors. Obviously your bank balance must support the strategy, then you will understand that going forward… it is not the plans issue. If the culture and the strategy of the business are sound, it will turn at some stage." Informant 14

Some informants linked leadership with teamwork and an organisational culture which should demonstrate accountability. Some individuals, in top management positions, indicated that building organisation's culture helps to maintain the credibility of their firms.

"Of course, from accountability aspect and being able to reinforce that accountability with your clients and your stakeholders I think that would be an enabler. So, if a company can prove that it is consciously working towards that, then I think it is making a better impression on your clients." Informant 3

"Also, your company's culture drives it. So, we invested a lot of time and efforts in the company itself to change the organisational culture in order to be more outcomes focused." Informant 14

The second ranked construct refers to capital, financing and offering financial solutions. This also includes having a sound balance sheet. Cutting and managing costs were mentioned 14 times as an enabler to implement sustainability strategies and thus ensure sustainability.

"Another enabler is definitely to have a better form of finance for the farmer, popper development finance model that is critical to the sustainability and it will be a great enabler." *Informant 5*

“Having a sound balance sheet within the company that enables us doing it. Profitability and the drive to make profit enables us to manage stock as well properly.” Informant 15

Accordingly, two informants emphasised the importance of cost-cutting and cost-effective behavior as an enabler to be more sustainable.

“Cost-cutting is very important and we have got the cost and we should look at cost cutting all the time and there are not enough reserves, extra and we should be very effective on the production, financing and costings.” Informant 18

Understanding the nature and needs of customers, the relationship with customers, providing services and facilities by a client-focused culture and ensuring customers’ satisfaction were highlighted by ten participants and consequently ranked the third enabler in implementing corporate sustainability strategies.

“I think there is a relationship between the client and us and to have this enables us to add value and to be more sustainable and even the extension work that we do the agricultural economist that is also enabler we have that is why we try to have a footprint even in small towns. I think that relationship is an enabler and client-focused culture and relationship is a huge drive.” Informant 13

Some of the top management interviewees referred to diversification through the value chain and trying to complete the chain as an enabler to thus better serve their customers and be more sustainable.

“A company like us, we have differentiated in like the agricultural economist to provide services to farmers and we have seed cleaning plants, marketing department and the mechanisation. So, it is to provide finance solution and also differentiation or diversification.” Informant 12

Ranked as the fourth construct technology, access to technology and information and doing research and development towards continuous improvement was mentioned by some of senior grain managers as an enabler to becoming more sustainable and future fit.

“The enabler will be one the technology, and the second one the equipment which possibly goes hand in hand but obviously nowadays with software technology.” Informant 26

“Information is incredibly important in marketing and we have one of the best in the world around marketing that creates credibility and transparency in your marketing system, so you can see clearly what supply and demands are, what transactions are taking in place. And that builds confidence in the investment environment.” Informant 6

Ranked as the fifth construct, supporting farmers to stay on the land, empowering farmers, and increasing the yield, or production, was mentioned as an enabler to implementing sustainability strategies. The land issue was also stressed.

“What we are also currently looking at, maybe, is to increase the production. Economies of scale are very important, you see that bigger farmers get bigger and smaller farmers sort of falling on the other side. So, we try to give the farmer advice and support to put him in a better position, to make the best optimal choice of production for them.” Informant 19

“*Land is an enabler. As far as the sophistication of our value chain is concerned. That will empower a lot of farmers” Informant 5*

Other informants declared that competitiveness, increasing the market share, or market growth, both locally and internationally, as well as their market reputation, or brand popularity, is an enabler to implementing sustainability strategies.

“Competitiveness is fundamental to sustainability if you are not competitive, your sustainability is a huge question. The competitiveness lies at the heart of your sustainability, however, it is not the only factor.” Informant 6

“The fact that we have a free market. the fact that you are small does not mean you should pay high for the stock you buy and you can compete, big or small, in the same level, and the playing field is level in that sense. I think this is an enabler from our side to compete with bigger firms, even with the internationals within the local market.” Informant 11

Providing quality and a quality product, which result in food safety, or food security, and creating an incentive for traceability was mentioned by five interviewees as an enabler to the implementation of sustainability strategies.

“Our biggest focus is quality and providing a quality product.” Informant 23

“Food security that has three factors: availability of food, affordability of food and quality of food.” Informant 5

Ranked as the seventh construct, a few informants referred to proper local infrastructure for transportation and service delivery by municipalities as an enabler to implementing their strategies.

“You can actually only supply sustainably customer by rail but there is currently a shortage on the rail. If you get enough rail, it can be an enabler.” Informant 11

“Service delivery from the municipality is an enabler.” Informant 21

One of the senior managers in the processing sector indicated that transport costs significantly correlates to location which thus impacts on the sustainability of his firm.

“I would say it is location. If you are not situated in the right areas, there is not much you can do. Transport cost is transport cost, whether you do it in-house or you make use of a third party, the cost is going to be there and distance is going to be there.” Informant 23

Ranked equally, social responsibility, serving the community and transformation of societies through a more caring attitude was mentioned by a few interviewees as an enabler to implementing corporate sustainability strategies, not only for their firms, but for the industry as a whole.

“So, you change your mind from taking money from the community to serving the community in order for the community to benefit and in order for you to have a longer-term relationship and a better base for you to operate and that is the attitude we have across the continent. It is away from the colonial attitude to more growing together.” Informant 14

Two informants presented the integration of the grain value chain. Increased cooperation, or the shortening of the value chain, was regarded as an enabler for the sustainability of their firms, as well as the sustainability of the grain industry as a whole. One participant noted the creation of opportunities to shared value.

“You need to be in touch with the industry and the whole chain, you need to know and take into consideration the whole chain that you are operating in because it is not that easy just to receive that grain and give it to someone to process it. There is a lot of other components

in this chain that is adding up to make a safe product. If the chain knows each other, and knows the way of working, I think it is a good thing to know. This is how it is going to go, and everyone knows where he fits in. there could be more integration and working together, I think I am sure of that." Informant 8

"We do believe that if we integrate the supply chain, there is an opportunity for a more shared value." Informant 7

One informant regarded nature as an enabler in the grain storage and handling sector.

"The main enabler for us is nature." Informant 9

Another informant voiced his concern about the environment. The planet was mentioned as an enabler towards more sustainable practices, not just as a firm, but also as an industry.

"When you talk about the planet, we are sensitive for environment, pollution and care about the whole story of pollution, dust pollution and noise. We are sensitive for these issues… even the carbon footprint and trying to save energy as much as possible." Informant 13

In addition, one interviewee from a non-profit organisation emphasised the importance of institutional capacity in the grain value chain as an important enabler to engaging with various levels, both locally and internationally.

"Strong institutions in our value chain, probably the most important enabler is the institutional capacity within the value chain at different levels to engage with one another and even to engage internationally." Informant 6

5.3.2.1.1 Summary

In conclusion, most informants viewed people, or employees, within organisations as important enablers. Top management stressed the importance of retaining skilled people and developing leadership skills within their organisations. The second and the third enablers, according to the ranked constructs, were thus capital and customers of the firms while access to technology and supporting farmers were ranked as the fourth and fifth constructs. Competitiveness and providing quality services, or products, were ranked equally with empowering communities and having access to efficient local infrastructure

ranked the same as the following construct. Enablers which appeared with minimum frequency included: integration of the value chain, climate, and care for the environment. Lastly, institutional capacity was mentioned by one informant.

5.3.2.2 Inhibitors to the Execution of Corporate Sustainability Strategies

The fifth interview question motivated informants to articulate challenges, or inhibitors, which made it difficult for them, or their firms, to execute the sustainability strategies. Some informants expanded their views and explained challenges *outside* their firms referring to the context of the grain industry at large as well as the country.

- Table 9: Ranked Inhibitors to the Implementation of Corporate Sustainability Strategies according to the Mentioned Frequency

  (Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention In the dataset
1	Government regulations and policies, policy uncertainty and frustrations with governmental red tape linked to local governance and infrastructure.	23	Regulatory Regime. Local government and infrastructure.	369 214
2	Financial issues, cost of doing business, commodity prices and currency volatility.	18	Profitability and economic sustainability.	1 375
3	The scarcity of skilled people and the lack of necessary skills for the industry 04.	11	People and Corporate Culture.	807
4	Adopting new technology, updating the old technology and technology affordability.	8	Technology and Technological Efficiency.	349
4	Climate, weather condition, drought and nature.	8	Environment and Planet.	209
5		6	Supply Chain Management.	1 060

	Land reform, lack of supporting farmers to stay on the farm and produce crops, decrease in the production of grain and particularly in wheat production.		Regulatory Regime, Land Reform (89).	369
5	Grain management, obtaining correct quality grain, challenges with on-farm storage facilities.	6	Grain and Grain Management.	2 028
6	Competition, so many alternatives for clients and lack of mergers or acquisitions.	4	**Profitability and Economic Sustainability** Competing and Competition (78).	1 375
			Stakeholder Management Customers (126).	535
6	The disintegration of the grain value chain, increasing the cost of the consumer.	4	Grain and Grain Management.	2 028
			Stakeholder Management.	535
7	Adhering to too many food safety guidelines.	1	**Food Safety and Food Security** HACAP Guidelines (14).	157
7	Theft.	1	Theft and Crime.	151
7	Difficulty of implementing the social side of sustainability.		Community and Social Responsibility.	159
7	Factors that are not under control.	1		-

Most informants noted government policies and legislation, frustrations with red-tape, policy uncertainty and operating within a third world infrastructure is the main inhibitors to implementing their strategies.

"The big inhibitor is the government policy, it is getting so red-taped on everything. So, if you get the picture of the third world and first world clashes we have especially in the rural areas. The frustration with the government policy and that is a huge inhibitor and that is with everything, with licenses, getting government to work with you in social programmes,

it feels sometimes there is a business you do it on your own and with no support. That is one of the big frustrations in business in SA: government policy." Informant 26

"The number one challenge of strategy implementation is our government's inability to run their departments properly. The policy is the challenge." Informant 5

Furthermore, other informants linked the regulatory regime to local governance and local infrastructure issues, placing a particular emphasis on electricity issues, water management, fuel prices, problems with municipalities and weak local transportation structure. Most of the informants interviewed were concerned about the infrastructure in the country, noting that it was deteriorating. Therefore, infrastructure was thus highlighted as the main inhibitor for firms and the grain industry in South Africa to become, and to remain, sustainable.

"I think the environment that business is in South Africa is today is really challenging we are operating at the first world place and with the first world legislation but with third world mentalities where inhibitors like corruption, security expenses and stuff like that are on a day to day basis. Just the availability of electricity, for instance, is a huge inhibitor and I mean electricity should be available from the government side or at least they should give you the right to create your own electricity. For us, being a company standing for integrity, the local government that you work with there are some elements within that that will inhibit you to continue if it is not for their own advantage." Informant 2

"We don't get any support from the government, no subsidies. So, we are standing alone in South Africa and we should compete and that is uneven playing field and that is one of our threats. So, I would say is the Macro-political challenge. We need to have a clean government…that supports policies that enables investments in South Africa. A government that focuses on economic growth and job creation, we need to have a government that delivers good services to its people and that starts with schools, housing, health, education, and safety and security… that is our biggest challenge in South Africa and our biggest threat is the inequality between the haves and have nots." Informant 18

The second ranked constructs extracted from informants' responses to this question were: financial issues, commodity prices, exchange rate issues and cost of doing business in South Africa as well as the risk of competition, fluctuations in currency and the importance of a transparent price level. Financial concern was a big concern and an inhibitor to them being able to implement their sustainability strategies effectively.

"The inhibitors, or challenges, will definitely be financial issues. In terms of compliance. There is a lot of additional costs that have to be incurred with some of these sustainability requirements." *Informant 3*

"I think at the national level and we are trading commodities, commodity prices and you need exporters and things can change relatively drastically. I wouldn't mind it being weaker or stronger as long as it is predictable but the fact that it is not predictable makes certain investment that has got 4-5 years' time span, before it operates fully, very dangerous." Informant 10

Most of the informants also indicated a scarcity of skilled people in their industry which makes the implementation of their strategies challenging. It is very difficult to acquire staff with the right skills and expertise, familiar with the fourth industrial revolution and who are productive enough to drive strategies. This was a common area of concern for many top management interviewees in various agri- grain sectors.

"Definitely a challenge to ensure that the implementation of your strategy is running smoothly. And I think skilled people in the business. It is scarcity, especially in the agriculture there is a big scarcity of skilled people." Informant 1

"In the past, it was better, the BBEEE act forces you to employ people but they need to have at least some skills to handle the technology and for the fourth industrial revolution." Informant 8

"We are moving into industry 04, particularly, is not adopting technology fast enough in terms of our competitors and if you adopt the technology, you also need the skills to manage that technology to be more efficient high-level skills. So, skill component can also be an inhibitor." Informant 6

Not adopting quickly enough to new technology, the affordability of technology and the difficulty of updating old technology was mentioned by eight informants and ranked as the fourth construct inhibiting the execution of sustainability strategies.

"It is the old technology you know it is an old technology and to bring that to the new technology level, that is sometimes a big challenge we have." Informant 1

Ranked equally important with adaptability to technology were challenges of climate, drought and the unpredictability of nature in agricultural sectors. There were also mentioned by other senior management informants as inhibitors to the implementation of their sustainability strategies.

"Climate and drought are the challenges when you are in the agricultural sector, you are in a cyclical sector, you have droughts, you have so many things that you cannot control." Informant 20

"It is all dependant on the weather conditions. That determines what you should do to implement the strategies." Informant 9

A very big concern, indicated by informants, was the land issue in the country. Supporting farmers to stay on their farms and produce grain, as well as overall decline in grain production, were noted as the main inhibitors to sustainability of firms as well as the grain industry in South Africa.

"The production of grain is decreasing. The lands are changing to mines and goes out of the production and never comes back. That is a big problem in agriculture and in grain handling. Today starting a new farm and starting to produce grain, you must go through a process. Wheat goes down due to prices and fluctuation and importing is cheaper than what we can produce. Our farmers don't get any subsidy for any production. The farmer should compete with importing wheat or white maize from Argentina and importing is cheaper. The farmer is going to do something else because it is a lot of production cost, input cost to what he gets in his pocket. If he can't afford it, he must borrow money from a bank. That is the reality that our farmers I think are suffering." Informant 4

"The farmers at the moment in the market are not buying farms. Because of the policy uncertainty. The price of land just going down. Should take that expropriation without compensation through, it will plum it, actually. That is going to have a contagious effect on the rest of the economy and on the rest of the asset losses in the economy. So, the real estate prices, commercial property prices, all of that will be affected." Informant 5

Some of these informants were mainly concerned about the significant decreases in wheat production, compared to maize production, and indicated that this would influence the sustainability of the South African grain industry resulting in the country becoming dependant on imported grain.

“We are in trouble in South Africa with regards to our wheat industry and the sustainability of the wheat industry, we are going back with our wheat industry as we are just importing more and more and we can’t compete on the international markets with the wheat we can’t.” Informant 6

Grain management, getting the right quality grain for processing purposes, challenges with on-farm storages and supporting farmers in addressing this efficiently were ranked as equally important to constructs which refer to the challenge of keeping farmers on the land. This was identified by the same number of informants as an inhibitor to the sustainability of their businesses and a challenge to the whole industry perspective.

“The fact that your commercial storage facilities are JSE registered ensures that a lot of products eventually ends up there. So, all silo bags, and the small farm silos, merely act as a way for the farmer to manage his harvest process rather than for longer-term storage. It is just as I will not farm, I suggest the farmers stick with farming focuses and not managing his grain post-harvest”. Informant 14

The other challenge, mentioned by four informants, was competition and the choice of possible alternatives afforded clients which makes it difficult to sustain business. One informant referred to the challenges of expanding the business’s footprint in the country due to the lack of mergers and acquisitions among the co-ops.

“There is a lot of competition and alternatives. So, it is the relationship with the client. The challenging is growing and maintaining the relationship with the client. The challenge is keeping the business according to the choices of clients that increases daily.”
Informant 13

“It is difficult to expand your footprint. The fact that the owners of these storage facilities have their roots in the old cooperative structures, very conservative boards, not necessarily forward-looking, it makes it difficult to have any mergers or acquisitions in this space, I think that a lot of us are still focused on the same regions that we have been focused in the past.” Informant 14

Ranked in equal importance to competition, a few informants expressed their concern at the disintegration of the grain value chain which, in the end, leads to an increase in price for the consumer. They noted this process as an inhibitor to the sustainability of the grain industry which also impacts upon the sustainability of their firms.

"Everyone is doing their own thing and there is a lot of chances to make money in the system but in the end also not good for the system. We need good safe food but also not too expensive. Currently, everyone is separate… as everyone is trying to make the most money. So, a lot of things are going on that is complicating the whole chain and making it expensive. So, the consumer pays too much and the producer gets too little." Informant 8

"Integration will add value to the population if we take some of the cost in managing and storing of grain and grain becomes food, I think there is still a lot of cost in there… we have a huge overhead cost and all of that becomes part of the food basket at the end of the day. So, if you have more mergers and acquisitions, a bigger focus on customer service in your storage operations that should unlock values and a lot of that value should go to consumers." Informant 14

Adherence to a multitude of food safety guidelines, and specifications, was mentioned by one informant as a challenge in the industry since some of these guidelines are not easily implementable and unpractical.

"There is a whole list of things you have to do that are basically in line with HACCP. Then, of course, some of the challenges are how implementable some of them are. So, it is like some of them are not really practical." Informant 3.

One informant indicated that theft is an inhibitor to sustainability in the grain value chain.

"The challenges are the issues we have with theft." Informant 5

Another informant noted the difficulties of implementing the social dimension of sustainability as an inhibitor.

"Ethical and social, in that area, there is a lot of theory, especially on the ethics. To try and balance that and then in the middle, there is a social side that where do you spend, what is the need." Informant 26

Another informant from the grain trading sector generalised inhibitors as all those factors that his organisation does not have control over.

"The things that we have no control over compared to enablers that we have control over." Informant 11

5.3.2.2.1 Summary

Concluding the findings for interview question five, it was very clear that most informants were very concerned and frustrated about government policies and regulations, red-tape, and the lack of proper local infrastructure which inhibits them from implementing their strategies efficiently. Water management, the land issue in the country, as well as the significant decrease in the production of wheat were also mentioned as frustrations which are not being addressed by the government. Supporting farmers to stay on the land was a major concern for informants and, as such, it was considered the first construct. However, the land reform issue in the country and the decrease in wheat production was considered a separate construct.

Financial issues, followed by the scarcity of suitable skills in the grain industry, were the next constructs which were regarded as inhibitors to sustainability and the successful implementation of sustainability strategies. The top management in this group were concerned about the adaptability of their employees in response to industry 04 and digitalisation. They indicated that even if they did invest in upgrading the technologies, their employees would struggle to operate them. They added that it was even more challenging to hire new people who might be better skilled at executing their strategies.

Thus, the following construct presented the adaptability to technology as well as the affordability of technologies in the grain industry. Accordingly, the volatility of nature and/or climate was identified as a significant influence agribusinesses. Issues, like drought, were identified as top inhibitors by management in this group. Adopting efficient grain management practices to handle, store and process grain was the fifth ranked construct, followed by competition in the market and a choice of too many possible alternatives for clients as inhibitors to sustainability. Issues, such as too many food safety guidelines (HACCP), theft, challenges in the implementation of social sustainability and lastly all factors being out of control were mentioned as inhibitors to the execution of CS strategies.

5.3.2.3 The Most Dominant Enabler to the execution of Corporate Sustainability Strategies within Agri-grain Firms

The sixth interview question encouraged informants to identify the most dominant enabler in the execution of corporate sustainability strategies within their firms, and the industry at large. The intention was to motivate informants to look outside the specific context of their corporates and to consider the grain industry, and the country.

- Table 10: Most Dominant Enabler to the Implementation of Corporate Sustainability Strategies Ranked based on the Mentioned Frequency

(Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the dataset
1	Capital, funding, finance, profitability and the asset base.	9	Profitability and Economic Sustainability.	1 375
2	People or employees in organisation.	7	People and Corporate Culture.	807
3	Having good relationships with clients, trust.	3	**Stakeholder Management** Customers (126).	353
4	Technology.	2	Technology and technological efficiency.	349
4	Providing quality product	2	**Food Safety, Food Security** Quality product (52).	157
5	Competitiveness.	1	**Profitability and Economic Sustainability** Competing and Competitiveness (78).	1 375
5	Policy certainty and land safety.	1	**Regulatory Regime** Land Reform (89).	369
5	Getting wheat farmers back on the farm.	1	Supply Chain Management.	1 060
5	Grain Management.	1	Grain and Grain Management.	2 028
5	Integration of the grain value chain.	1	Supply Chain Management.	1 060
5	Optimising the route planning and transportation of grain.	1	**Supply Chain Management** Transportation (68).	1 060
5	Nature and climate.	1	Environment and Planet.	209

Most informants confirmed that capital, funding, finance and the profitability of their business were the most dominant enablers for the implementation of their corporate sustainability strategies.

"The capital is the most dominant enabler for the industry and for us as well." Informant 16

"Funding, availability of capital, about grain industry, you need funds, because it is capital intensive. The fund is the main." Informant 21

"Money is the most dominant one. Money makes money." Informant 4

One informant's perspective was that the asset base of his organisation was the most dominant enabler for the execution of their strategies.

"The most dominant one is probably the asset base." Informant 26

Another informant specified that both employees and capital had equal importance and were thus grouped together as the most dominant enabler.

"Both people and capital important. I can have the best people but if I don't have the 100 million bucks, I am not going to go anywhere. And if I spent the money and I don't have the people to operate…also not going anywhere. So, it is the combination of the two and it does not happen overnight." Informant 10

The second ranked construct was people, or employees in organisations who will implement the strategies and thus impact upon the sustainability of their firms, and the industry.

"People and believing in people. What I am saying is, you can spend millions on the equipment but if you don't change the people, you are not going to get the benefit of the money that you have put in the equipment." Informant 22

"I say people, yes definitely. Without people, there is no way that you can implement any sustainability. First of all, you need to get your directors and your ex-co consisting of senior management, to get their backing and I think they are definitely enabler and your direct

line management and then rolling that support down to silo managers and the people who physically should roll out the strategies." Informant 2

Maintaining good relationships with clients, building and earning trust and infusing integrity into your business approach to keep customers happy were identified as the most dominant enablers.

"The dominant enabler of being sustainable is the relationship with the clients, client-focused culture and showing your clients that you care." Informant 13

"Having the culture of Integrity, both to the farmers and to the off-takers. The farmers are our suppliers also they are our shareholders. So, we are not looking to make a quick profit and long-term relationships and views are very important." Informant 15

Two executive managers emphasised that technology is the most dominant enabler to execute sustainability strategies.

"Technology in one word. So, we need to start with the technology and all of these things, increase your yields and decrease your cost. And I think ultimately that is all that it is about because we all realize that the prices are just hiring inefficiencies so you should be in a position to be able to reduce… and in order for you to allow you to do that, I think technology is the key." Informant 19

Two other senior managers in the grain processing sector specified that providing quality products and services were the most dominant enabler for them, impacting on both the profitability and sustainability of their firms.

"Definitely quality, and quality starts right from the procurement of grain which is very important. A mill is not a place where miracles happen, if you are sitting with a bad quality maize that goes into the mill, you are going to get a bad quality maize mill that comes out." Informant 23

One informant emphasised that the most dominant enabler is competitiveness and he mentioned several other factors which impact on competitiveness. As per his view, competitiveness is the most dominant enabler for sustainability in every business.

"The most dominant one is competitiveness, but competitiveness must be broken down in various sub factors including production, storage, and handling of the transport, of the price that you have locally vs. the international price. There are various aspects to competitiveness essentially is the most dominant one is to remain competitive. It has cost all over the way and it is all about whether you can do it competitively or not." Informant 6

For another informant, policy certainty and land safety for farmers was the most dominant enabler for the sustainability of the grain industry in South Africa.

"Policy certainty is the most dominant enabler. In the end, you can philosophise about this as much as you want if the farmer does not know that his land is safe the whole thing is not going to work. We want to get all of these parties in the same space. In terms of Land reform, land ownership, finance and all of it." Informant 5

In addition, another informant, concerned about the diminishing wheat industry in South Africa, mentioned that getting the wheat farmers to produce grain once again was the most dominant enabler.

"The most dominant enabler in grain in South Africa to get more wheat farmers back on the farm again and that is going to make a difference. That is needed to get the wheat industry back that is for sure the most dominant one that is underlying to all of these. If it is not economic for a farmer to produce the grain, then forget about the rest of the value chain." Informant 12

One informant in the grain processing sector regarded proper grain management, and practices that facilitated the curbing of grain losses, as the most dominant enabler towards sustainability of the grain industry.

"For the grain industry, the main aspect is storage. To manage the storage and the right product in the right place so here the team effort comes in. We totally involve the silo operators accountable to make sure that the right product is stored at the right place and manage the storage." Informant 24

Another informant in the grain handling sector regarded the integration of the value chain, and increased collaboration, as the most dominant enabler.

“Everyone is on its own and going on its own way and people are trying to make it their own type of thing where everyone got a place in the sun, but the chain doesn’t interact that good. I think it is more harm down by everyone being on his own at least the chain will operate at full capacity with everyone going to the same direction and that comes with all skills, laws, etc.” Informant 8

For one informant in the grain trading sector, optimisation of route planning and transportation of grain was the most dominant enabler.

“The most dominant enabler from our point of view is the optimisation of route planning. Transport for a particular route. There is a lot of potentials for us to optimise the route planning and it is something that we have control over it and we can do it.” Informant 11

The last construct, emphasised by an informant in the handling and storage of grain, was the power of nature as the most dominant enabler in the agricultural sector.

“Most dominant enabler is definitely nature, weather conditions or climate.” Informant 9

5.3.2.3.1 Summary

In conclusion, 12 different enablers ranked in five levels were identified as the most dominant enablers in the execution of corporate sustainability strategies within agri-grain firms.

5.3.3 Results for Research Question 3

RESEARCH QUESTION 3: What is the interplay between reducing post-harvest grain losses and the sustainability of the grain industry and how can this be compared to other enablers which impact on the implementation of corporate sustainability strategies to support the TBL of the grain industry?

Research Question 3 aimed to explore the interaction between the reduction of grain losses, by the involved firms, in the execution of their sustainability strategies and the sustainability of the grain industry. Moreover, informants were asked to compare the enablers, as mentioned in the second part, with the reduction of postharvest grain losses in the context of sustainability.

5.3.3.1 The Impact of Reduction of Grain Losses on the Sustainability of Agri-grain firms and the Sustainability of the Grain Industry

The seventh interview question was aimed at understanding the views of agri-grain management regarding the reduction of grain losses on the sustainability of their firms, and the grain industry as a whole. The purpose of this question was to introduce informants to the purpose of the study which was: exploring how the reduction of grain losses matters for the agri-grain top management and, in case it does not, identifying the important enablers of CS strategies execution in the grain industry.

- Table 11: Perceived Impact of Post-Harvest Grain Losses Management on Sustainability of Agri-grain Firms and the Grain Industry

  (Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the Dataset
1	Direct impact on the bottom-line, profitability and hence sustainability.	11	Profitability and Economic Sustainability.	1 375
2	Significant impact on sustainability.	10	Sustainability and Triple bottom-line	271
3	It has minimum impact.	3		-
3	It has an impact, however, it has not been measured.	3		-
3	It has no impact.	3		-

Most informants confirmed that decreasing grain losses would directly impact on their bottom-line, or the profitability of their firms, which in the end will influence the sustainability of the grain industry.

"Obviously, there is a direct monetary value, if you lose grains in the system that you have paid for, it has a direct influence on your bottom-line, because it has a monetary value, that's it, bottom-line." Informant 20

"If there is a loss of grain that means somebody is losing money somewhere which has been paid for." Informant 24

"Any grain losses you want to minimise as much as possible because it is a cost to your business and you are reducing your potential income and the difference between your cost and your income becomes smaller so you lose your competitiveness and so you lose the sustainability. The big effect obviously is that you will have less revenue, or income, to your business and the cost remains the same. So, your sustainability becomes eroded, so, you move to loss making situation and not a profit making situation." Informant 6

Some demonstrated the significant impact of reducing grain losses on the sustainability of grain firms as the second construct. One informant in this group identified it as a significant way to aid food security in the country.

"It is a huge impact for us, not just for the firm as I said, it is for all the stakeholder and for the country as a whole. It helps in a big way for the food security going forward." Informant 1

"If you can reduce the losses you within the grain industry, and obviously within our company as well, you will put all partners, all stakeholders in a better position for the future." Informant 2

A few other informants perceived the impact of reducing grain losses of minimum importance to the sustainability of their firms, as well as the industry, since they believed that losses occurring currently are small.

"At this point, I believe the losses are absolutely minimum but coming back to technology I think there are ways of even cutting that down even more. I think the grain industry as such in South Africa, grain losses I think is minimal." Informant 15

Other informants indicated that the reduction of grain losses might have an impact but, up to now, it has never been measured, or evaluated.

"I don't think we have really ever addressed this issue…. we don't calculate it, and we don't quantify it. I think the problem is much bigger than what everybody will admit. Let's quantify! Because if we don't measure it, we don't find a way to deal with it." Informant 22

"We don't precisely measure that, we have the measurement to see how much of the crop stays behind which was not harvest but I think that is the first thing you can reduce losses on the field by means of the combine and harvester." Informant 18

For a few other informants, reducing grain losses has no impact on the sustainability of either their firms, or the grain industry and hence it has never been explored.

"It has no impact on it. The reason being is that we have got so many checks and balances in place to make sure that you don't have the grain losses." Informant 9

"It is not the focus in South Africa and there are some other things that are more important in the industry than grain losses. Obviously, any grain losses has a negative financial impact but it is almost not existent in our current operations." Informant 12

5.3.3.1.1 Summary

One can conclude that, although some informants strongly support a positive relationship between reducing post-harvest grain losses and the sustainability of firms and the industry, some informants did not consider the reduction of grain losses as a significant factor, and some even perceived that it had no influence in the South African grain industry context. These informants highlighted other elements like: production, land expropriation without compensation and enablers to keep farmers on the land as influencing factors as to the sustainability of firms and the grain industry.

5.3.3.2 The Impact of Mentioned Enablers on Sustainability of Agri-grain firms and the Sustainability of the Grain Industry

The eighth interview question firstly reminded informants of the enablers they mentioned in the second Research Question. This was done to contextualise the next part of the question which asked them to draw a comparison between enablers and the reduction of post-harvest grain losses. In some instances, this question was posed in conjunction with the tenth question, depending on the flow of the conversation.

- Table 12: Perceived Impact of Mentioned Enablers on Sustainability of Agri-grain Firms and the Grain Industry

(Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the Dataset
1	The impact of land reform, importance of keeping farmers on the land to produce and supporting farmers and grain production.	8	Supply Chain Management.	1 060
			Regulatory Regime Land Reform (89).	369
1	The impact of having skilled people and expert resources.	8	People and Corporate Culture.	807
2	The impact of grain management and practices.	6	Grain and Grain Management.	2 028
2	The impact of technology, farm technology (precision farming) and innovations.	6	Technology and technological Efficiency.	354
3	Economic sustainability, financial situation and cost impact.	5	Profitability and economic sustainability.	1 375
4	The impact of weather patterns and climate.	3	Environment and Planet	209
5	Theft and crime.	2	Theft and Crime.	151
5	Policy certainty and government regulations.	2	Regulatory Regime	369
5	The impact of competitiveness and keeping pricing competitive to compete locally and internationally.	2	**Profitability and Economic sustainability** Competing and Competitiveness (78).	1 375
			Regulatory Regime.	369
6		1	Grain and Grain Management.	2 028

	The impact of receiving and processing quality seed.		**Food Safety and Food Security** Quality and Quality product (52).	157
6	The impact of extraction and moisture in milling.	1	**Grain and Grain Management** Milling and Processing (162).	2 028
6	The impact of value adding and creating niche markets.	1	Profitability and Economic Sustainability.	1 375
			Supply Chain Management Value adding (31).	1 060

Most informants, once again, expressed their concern as to the land issue in the country when they were asked to elaborate more on the impact of other enablers of sustainability, of either their firms, or the grain industry. For them, keeping the farmer on the land to produce grain was a major concern. If this can be done sustainably, it would also enhance the overall sustainability of the industry.

"We are concerned about the farmers and the viability of maize production to start off with. Coming back again to no subsidies for the farmers. The government needs to realize that the food producers are important to them. I think they need to speak out and get systems in place that will enhance farming. Obviously, that will possibly settle this whole land issue as well." Informant 26

"The most of grain loss is on the production side I want to say. So what we can do to make production more sustainable…trying to improve the emerges on the farm, trying to keep the farmer up to date to have maximum production for him to be sustainable try to produce the maximum crop to improve his yields because it is important for us that the farmer stays on the farm on the production side. I think South Africa has got a huge challenge in trying to turnaround declining trends of wheat production in our area." Informant 13

Considered equally important, as most informants confirmed, were people in the organisation, their knowledge and expertise and the importance of having skilled people to buy into the strategy and, hence, implement it. Management, once more, referred to these assets in grain industry as important enablers of sustainability strategies.

"I think one very important enabler to sustainability is the knowledge of people. That knowledge we give them over time will ensure a sustainable future, not just for that person, but also for our company and whether he works with us, or anybody else in the industry, we empower that person to take the knowledge forward. I really think that makes a difference for sustainability. So, we empower our people with training and education and giving them the right management skills will have a positive effect on the grain industry and enable the rest of the grain industry overtime because people make the difference. The good example for me… you can have the best manager the best support and the best technology and if you do not get the people to implement it in the right way, and buy into that strategy, that strategy is still an idea and a vision." Informant 2

One executive management in the non-profit sector emphasised the importance of having skilled resources as an important enabler to be able to engage with government on a professional level.

"One of the enablers is if we want to engage government on policies and legislation, I need a research team to see what the trends are, what the best practices are. So, an enabler for me is to ensure the sustainability of my firm and my members is that I need to have the capacity to put on a report. So, your ability to have the expertise to engage with the government because the government has more resources and more expertise than you have, you need to challenge them evidence-based or fact-based. It should be based on research that makes sense from the science point of view and that your arguments are substantiated by good research when you engage government… and to have a good and strong conversation with government around the issues. To do that I need resources and skilled people of the best in the country that are able to do that." Informant 6

The impact of professional grain management, grain handling, and the right practices was mentioned and ranked as the second construct in response to the question of elaborating on the impact of other enablers of corporate sustainability strategies. The impact of this enabler focused mainly on the grain handling and storage sector management.

"I think the biggest impact is probably when your grain management is optimal, and you don't lose grain at the silo level, at the storage level, due to fungal infection or insects and things like that, or even spillage at the silo, so there it comes down to management, optimal management." Informant 3

"For me, the major drive in all the businesses, be it manufacturing, or processing, be it storing, trading, etc. is to be extremely accurate in terms of your stock management and to have the systems, disciplines and the people in place to enforce it. It is controlled through management principles, disciplines and right equipment." Informant 10

Ranked as equally important, management in the grain industry emphasised the Impact of technology, having access to technology (particularly precision farming) and innovations as important enablers to assuring the sustainability of their firms, farming processes and, hence, the farmers in the industry.

"The more technology that you bring in that is in line with the future the more then at the end of the day will be sustainability for the company and for the grain industry as a whole." Informant 1

The third construct, mentioned by five informants, was the impact of economic sustainability, the financial situation and the impact of cost on the sustainability of firms in the grain business. One informant linked this challenge to incentives for reducing grain losses since, in his views, most of the ways to reduce post-harvest grain losses are normally expensive.

"Development finance institution is key in developing rural, or emerging, farmers or developmental farmer. There is nowhere in the world that they can buy land. Farmers need a form of subsidised finance to do that. If we can get that right, we can produce a lot more grain in South Africa." Informant 5

"By solving the financial sustainability and bringing back the traceability and identity into that process, making sure where he has to deliver the grain and it is known and visible and it is managed probably then you reduce that incentive for theft and side-selling and misrepresentation on yields and whatever it requires." Informant 7

A few informants mentioned the impact of weather patterns and climate on reducing the grain losses and the sustainability of the industry.

"There are changes in weather patterns, rainfall, heat, extremes, less rain, more heat, floods, something over everything, so your challenge is getting greater and greater to be still sustainable." Informant 26

Two informants were still concerned about the issue of theft. They referred to this impact as a critical inhibitor to the sustainability of their firms and the industry. According to one informant, as top management in the industry, theft is their biggest headache compared to any other inhibitor. Eliminating theft would thus be their biggest enabler.

"There is theft that is taking place at the moment, in the grain industry and I am not talking about the theft that grain goes. For theft, we spent a lot of money to upgrade our systems to compensate for theft. If someone says it is not a big thing, they don't know how many tonnages have been stolen, so it is a big thing all around. Our biggest challenge on the theft side, they were guys were a court that they knew stole the grain not with us, with other co-ops, they went to court and the court told them how do you identify your maize? Is your name written on every pop, No, so they throw the case out of the court, so the guy got away for that and that is the big challenge we are sitting with." Informant 21

"Our biggest headache from our point of view is theft." Informant 17

Furthermore, two other informants stressed the importance of government policies and policy certainty as a critical enabler for the sustainability of their industry.

"Is the environment, the politician going to look after the investment and are you going to access it in five years' time? I think that is the political certainty, fraud corruption, business certainty, currency certainty, the government responsibility, and the regional responsibilities that is the detriment for the capital investment, the detriment for you to have the right people willing and capable to work for you." Informant 10

Alongside with policy certainty, the impact of competitiveness and keeping the pricing competitive particularly dealing with international markets was re-emphasised by two senior managers as critical enablers of sustainability, both locally and internationally.

"In terms of the food processing, we need to make sure that the pricing remains competitive and we deliver to international markets commodities so we are going to work smarter and smarter. Unfortunately, in this case, it means the economies of scale as well, so you need to be big. There are a few industries where you go small scale and survive, generally bigger is better and you get the economy of scale, and you can do it properly." Informant 10

One informant in the seed processing sector indicated the impact of receiving, and processing, quality seed on the reduction of grain losses.

“We should adapt to the quality of our seed, reducing the losses in the field and the plant.” Informant 25

Another senior manager in the grain milling sector identified the extraction of moisture as an important enabler for the sustainability of his firm.

“In terms of the milling, it is all about the extraction and moisture.” Informant 10

One informant in the grain processing sector referred to the importance of creating niche markets for value-added products as an enabler of the sustainability.

“Profit margins are small but by creating niche markets and recovering waste products, the value can be added which again increases the profit”. Informant 16

5.3.3.2.1 Summary

In conclusion, generally speaking, most informants found it difficult to respond to this question as they could not remember the enablers that they had mentioned in the second part of the conversation. In many instances, the researcher referred back to the mentioned points to remind them and then asked them to review the impact once more in terms of sustainability. This was done to address the purpose of comparing the impact of the mentioned enablers with reduction of grain losses which, it was assumed, would be considered an enabler for the purpose of this study. However, responses to this section were often unclear. In addition, the informants often explained the impact of inhibitors on the sustainability of grain industry, rather than elucidating the challenges surrounding the reduction of post-harvest grain losses.

5.3.3.3 The Challenges of Reducing Post-Harvest Grain Losses

The ninth interview question intended to explore challenges faced by agri-grain firms to reduce the amount of post-harvest grain losses in South Africa. The intention of this question was to focus the attention of the informants on the importance of grain losses in the grain industry and understand how they are mitigating their risk in this field.

- Table 13: Challenges of Reducing Post-Harvest Grain Losses, Ranked based on Frequency

(Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the dataset
1	Grain management and practices, handling and storage of grain, stock management, grain moisture and grain fumigation management, problem of double handling and short-term storage facilities, monitoring farming practices.	30	Grain and Grain Management.	2 028
			Supply Chain Management.	1 060
2	Theft and financial investment in security technology.	17	Theft and Crime.	151
2	Access to technology, investment in technology, maintenance of old technology and competitiveness.	17	Profitability and Economic Sustainability.	1 375
			Technology and Technological Efficiency.	354
3	Lack of skilled people, managing people and training employees.	7	People and Corporate Culture.	807
4	Cost of doing business and the challenge of cost-effective means to reduce grain losses.	6	Profitability and Economic Sustainability.	1 375
5	Grain logistics and transportation.	5	**Supply Chain Management** Transportation (68).	1 060
6	Government policies and legislations, red-tape and local infrastructure.	4	Regulatory Regime.	369
			Local Governance and Infrastructure.	214

7	Climate, weather patterns and nature.	3	Environment and Planet	209
8	Recognition of the problem that grain losses do occur.	1		

Most informants, which contributed to this study, confirmed that the main challenge for them in reducing grain losses comes back to proper grain management and practices, including the handling of grain and storing at the right place under the right condition. Some of these senior managers referred to moisture management as a serious issue when attempting to eliminate grain losses in the industry since this allows farmers to harvest early and it can also eliminate theft. Furthermore, other practices, like fumigation of grain storages, shorting the chain to eliminate double handling (specifically in the trading sectors) and the difficulty of grain traceability after the harvest were mentioned as challenges to reducing grain losses within agri-grain firms, and thus in the grain industry.

"The biggest challenge is the administrative systems. If your administrative systems are not right and not audited very regularly, then your biggest losses are there because you will have cases where the stocks are dispatched and it has not been deducted from your theoretical stock and that is a loss. That is why we have got check and balances in place to make sure that what we do, we don't have stock losses." Informant 9

"Grain management at a higher level, so your risk mitigation, processes and procedures must be in place, otherwise it will create more grain losses." Informant 2

For one informant in the processing sector, the reduction of grain losses starts at the farm. To thus reduce grain losses, farming practices should be monitored to assure the quality of grain right from the beginning to prevent quality losses.

"One of the challenges is to make sure that you have the best farmer to produce it for you with the best equipment and in the best area. So, monitoring the farming process and the best practices that they can do and then return the crop back to us." Informant 25

The second biggest challenge is reducing the amount of grain losses, ranked as the second construct, is theft. This includes costly security facilities and the financial investment that goes into precautionary measurements and security technologies to prevent theft.

"It is strange that I have got to mention that the first biggest lost is theft, especially in suburban areas. Corruption is one of our biggest threats, 3% of our production goes to our own private security, 3% goes for private security companies. So, investment goes into the security technology, all sorts of ways we use technology to try to reduce the theft." Informant 18

"Theft is one of the major reasons for post-harvest losses, so we invested a lot of money to ensure the safety of our stock in the silos and bunkers. Theft in South Africa is a huge issue, not only in storage but stocks in transit that loads get stolen and that adds the cost on throughout the value chain…theft in the value chain is a major concern most of anywhere else in the world that I have seen it." Informant 14

Ranked as the third construct, technology, included: investment in technology and doing regular maintenance of the current system as well as access to farm technology was mentioned by the third most informants as the challenge of reducing grain losses.

"To reduce the grain losses, you need to invest in the latest technology but unfortunately the handling system here are in the old technology and maintenance is a key challenge. So, if you invest in the latest technology, it will reduce the losses and also cross-contamination will be avoided." Informant 24

"The correct equipment, together with good management, can keep losses to the minimum. We need highly specialised and expensive equipment. This also impacts on the profitability." Informant 16

One CEO, being very concerned about the lack of investment in South Africa in new technologies, emphasised the challenge linked to competitiveness being threatened and indicated that adopting new technologies was part of the sustainability exercise.

"If your competitiveness is already under threat then people don't want to make that investment. In South Africa, that is a real challenge. We battle to be competitive and then we don't keep up with new technology to ensure the improved way of handling. They should be investing in new technologies, especially when there are industries like wheat that is not performing well and then there is no investment in that anymore. So, while you are not competitive, you stop investing in new technologies and then you backslide and if you don't have good technology to minimise your losses, you are just sliding backward.

So, part of the sustainability exercise is to adopt new technologies that ensure that you minimise your losses." Informant 6

The fourth ranked construct included: managing people, training employees, having a skilled workforce as well as a well-developed, and accountable, organisational culture. There were all mentioned as challenges to implementing strategies and reducing the amount of grain losses, as experienced by top management in the grain industry.

"The question is about management, maybe the people in this instance weighs more than the equipment. I think people is the culture… if you don't have the culture of management, the culture of running the business if it is your own then you can have the mentality that I do my job and I walk out." Informant 10

"If the operator in the silo isn't very well trained, he could end up mixing different grains and that is a huge problem. So, you can sometimes sieve out some of smaller grains but some of them are at the same size and you can't separate them." Informant 3

Cost of doing business in the grain industry and being able to reduce grain losses in a cost-effective way was mentioned by six informants and ranked as the fourth construct.

"Reducing grain losses in a cost-effective way. Everything you do to minimise losses has got a cost to it, new machinery or educating people. But it is a balance you can get a premium for a good quality product, but it is going to cost you a little bit more." Informant 8

Transportation of grain and other logistics were mentioned by some informants as the main challenge to reducing grain losses. Most of these senior managers emphasised that rail-road infrastructure is lacking to facilitate efficient transportation of grains, thus preventing grain losses. Moreover, adapting to changing trends (e.g. farmers transporting less grain than before) was mentioned as a challenge for storage facilities and the handling business.

"The grain logistics is another challenge in the grain industry, because farmers are changing, they don't want to drive tractors and wagons to silos anymore, they want us to load it for them and bring it to the silo, or to the mill, so logistics definitely is a challenge that all the co-ops are focusing on to get that better." Informant 21

A few other informants mentioned government policies and regulations, poor local infrastructure, water issues, too much red-tape and the implementation of legislation as

challenges in the reduction of grain losses. According to these managers, companies must address too many infrastructural issues in the country, rather than focusing on the sustainability of their business, or the industry.

"Coming back to all the legislation, if it was a smooth functional part of our economy and the business, it will have been the case of expanding and just going to local offices, getting a paper signed and everything is happening within a week, and you have certain answers, and…, but now it is red-tape, unfortunately. Companies will have to get involved in water and I think the basics should be the government responsibility and in some parts it is going to be taken over by businesses that will help the communities. So, in my mind the sustainability of the structures we have in place at this stage, and I must say from the government side in regulating this, the demands on the quality and the drive on that side is possibly even getting higher, there is legislation in place for the first world countries in actually a third-world country." Informant 26

A few more informants stressed the importance of climate and its impact on their harvest. Their challenge is thus to reduce and/or limit their losses in some instances.

"We are trying to reduce losses as much as possible, but it is also dependant on the year, some years for the climate, you have less losses and better product harvested and then if the climate is different, you may get more losses." Informant 8

One informant, an executive manager in the handling and storing sector mentioned the fact that the problem of reducing the grain losses has not been recognised, or highlighted, and this constitutes a big challenge for sustainability.

"If I look at the process, to me it is firstly recognising that there is a problem and up until now, nobody has recognised it!" Informant 22

5.3.3.3.1 Summary

All in all, whilst trying to understand the challenges faced by agri-grain firms regarding the reduction of grain losses, it was concluded that the majority of informants experienced efficient grain management practices (including handling, storing and processing of the grain through the grain value chain) as the main problem. Theft and crime in the grain industry were also noted as big challenges which cost the industry dearly. Mentioned as equally important was access to technology to help eliminate losses. Lack of required

skills, cost of doing business and transportation efficiency were the next constructs mentioned with government policies and the climate also noted. Interestingly, one informant referred to the challenge as *recognising the problem* since, in his view, little attention has been afforded to the issue of reducing grain losses. This construct was ranked as the last.

5.3.3.4 Comparison between Enablers to the Execution of Corporate Sustainability Strategies and the Triple bottom-line of the Grain Industry

The tenth, and last, interview question aimed to understand the positioning afforded to the reduction of grain losses, as perceived by informants, in comparison to other enablers, as mentioned in the second part of the study and elaborated on the impact as the eighth question.

- Table 14: Comparison of Impact of Sustainability Strategy Execution Enablers (Source: Researcher)

Rank	Construct	Frequency	Relevant Categories of the Construct	Total Frequency of Mention in the dataset
1	Less losses more profitable, less losses more sustainable, being at the forefront since it is the loss of income, less losses more market share.	9	Profitability and Economic Sustainability.	1 375
			Sustainability and Triple bottom-line.	271
2	Government policies and regulations, land reform and supporting farmers to keep up production.	8	Supply Chain Management.	1 060
			Regulatory Regime.	369
3	Technology and reducing the grain losses are two sides of the same coin.	5	Grain and Grain Management.	2 028
			Technology and Technological Efficiency.	354
4	Theft as the main issue of grain losses.	2	Theft and Crime.	151

4	Difficult to compare, however, reducing grain losses is quite important.	2		-
5	Climate as the biggest driver.	1	Environment and Planet.	209
5	Quality sustainability is an enabler for reducing the grain losses.	1	Food Safety and Food Security.	157
5	Loss is grain identity is more important that volumetric losses.	1	Supply Chain Management.	1 060
5	The importance of having growth strategies in place.	1	Profitability and Economic Sustainability.	1 375
5	The importance of diversification and adding more value in the grain chain.	1	Supply Chain Management.	1 060
			Risk Management.	71
5	The importance of focusing on customers' needs rather than reducing grain losses.	1	Stakeholder Management.	353
5	The importance of shortening the supply chain as an enabler also for reducing grain losses.	1	Supply Chain Management.	1 060
5	Sustainable agricultural model for the future should apply more biological practices.	1	Supply Chain Management.	1 060
			Sustainability and Triple bottom-line.	271
5	People and culture of organisation.	1	People and Corporate Culture.	807

Most informants confirmed that reducing grain losses would have a positive impact on their bottom-line, on their profitability and, hence, the sustainability of their businesses. These executives and senior managers indicated that reducing grain losses was addressed in their strategies with one informant emphasising that this enabler was one of their top priorities. Another CEO in the grain industry indicated that reducing grain losses would increase the competitiveness of firms in agri-grain sectors.

"Firstly, without improving on post-harvest losses we will not have a business. We always focus grain management on quality and quantity and post-harvest losses that fits into both

of those. If you multiply that with the volumes that we handle, the small benefit becomes a big impact at the end. Our benefit from doing post-harvest management better is what makes our profit, the fees we charge cover our cost. So, it is at the top of our strategies. The last comment on that is this also allows us to be more competitive when we enter new geographies, we could give more advantage back to the producer and then he chooses us as the partner of his choice. It adds more value to the value chain, it allows more commodity to enter the market, and that makes sure that the grain value chain progresses." Informant 14

"I really think that there is definitely an improvement in the bottom-line because of that. I think there is definitely an improvement to the client you can measure it by seeing the market share. The reduction of grain losses is definitely part of our TOP5 if the group has let's say 10 strategies it will definitely be in the top 5 of those strategies." Informant 1

"Grain loss is at the forefront because it is the loss of revenue because when a farmer delivers his grain to the silo all those deliveries get documented and at any time the farmer should be able, or the buyer should be able to, go and collect the grain that was deposited there may be sold to him by the farmer and if the silo doesn't have the quantity of grain that it said it had, based on the calculation of all deliveries there would be huge recuperations for that company. Storage facilities are like banks and in their contract that they make with the farmer they are responsible for managing the quality and quantity of that grain." Informant 3

The second ranked constructs, mentioned by eight informants as being more important than reducing grain losses for the industry in South Africa were: government policies and regulations, the land reform issue in the country and enhancing production by, firstly, keeping the farmer on the land. The top management in this group were primarily concerned about production, at the time of study, rather than reducing grain losses.

"For me, losses in the grain value chain is not the issue in this country. We produce a surplus of food. Even if it is we have marginal losses there, it is remotely not comparable to the rest of Africa. If I have to comment on the enablers I would say access to land, government policy, sustainable funding, and sustainable transformation and water planning are probably the 5 top things that would enhance the social compact, food security in the long term, and food availability in the long term and proper planning. If the government enables the private sector, in other words, us to do this, we can do a lot better and a lot faster than they can… If you ask a farmer about food losses, he will say that I am

fine with losses, however, I am worried about my land, my own safety, and my water." *Informant 5*

"I think land reform, currently in the country, is putting a huge damper on growth in the investment in the Agri-industry. For Agribusiness, it is a huge risk and I call it a double risk. Because we are in finance, and because we are grain handler and storage, if farmers lose the land, we are going to lose the grain, but also, we have lent to the farmer, so you are going to lose twice. Because you gave the land to the farmer, to plant, and he is not going to be able to do that. This whole land reform, even if they distribute the land, the guys that will get the land, in the worst case, cannot produce at the same level, it is going to take them ages to be on the same level of commercial farming." Informant 18

Several informants compared the impact of technology as an important enabler in reducing grain losses. In their views, having access to technology is the main prerequisite to reducing grain losses. One CEO highlighted this notion by saying that technology and reducing grain losses are two sides of the same coin.

"Most technologies are focusing on bringing efficiency, but it should make sense and it should a business case for it. Technology and reducing the grain losses are basically different sides of the same coin and for the simple reason that you should minimize losses and technology is the way to do it, basically. So, they have the same weight. The one is mutually dependent on the other one. They are flip sides of the same coin." Informant 6

Other senior managers in the grain handling sector mentioned that if they had enough capital to invest in the technology that they needed to curb losses, 9 out of 10 of their strategies would focus on reduction of grain losses.

"Funding and technology and technology speak to our ability to be more effective in terms of preventing losses, especially in terms of moisture. So, there is a very close relationship and it is capital intensive. I think if we had the capital, it will be 9 out of 10 in terms of the weight of the focus because everyone knows what it means to us. We need to invest in technology that will allow us to regain that market share to compete in the market. I think the other thing is how do you balance and the availability of capital, at the end of the day, it goes down to profitability." Informant 21

Two informants noted the impact of theft as a serious issue and an inhibitor to investing in reducing grain losses. These senior managers were quite concerned with the amount

which should be spent to eliminate theft in their businesses which, in the end, is just a sunk cost.

"I think grain management itself, is done well. And it should have been the only control you had to do. But now you have theft and you have all these other things where you spend money on that and that is only to save what you had previously, anyway. So, it is just the addition of cost with no opportunity of generating new income. It is just a fixed cost that is getting as part of our cost structure, but your losses are going to be much greater if you don't look at this and this is an unnatural loss, it is not natural losses if I can call it that. Huge amounts and you don't really have a benefit because it is not going to make your handling or your efficiency better. It is no return on it. It is just money you have to pay because of crime. It is cutting against the grain with putting yourself in the competitive position. Competitive age is one thing but how can you have a competitive age if you are investing in preventing grain losses because of stealing." Informant 26

"There is a big syndicate now in grain theft and we are spending millions now for cameras, for gates, booms, only for silos. Theft is the biggest problem and we are spending millions every year and every silo also at the Free State. They fraud every document that you can think of. In every department of us, there is a big focus on losses rather is theft or fraud or anything because that is influencing my profit. Inside the silo, the loss is not very much the stock control, and the infestation is very good. I think as soon as it is in the silo is very safe… The main loss is theft that is my vision. The strategies should eliminate that. The big loss is that you produce and before it gets to processers gets lost and most of that is because of theft." Informant 4

Two other informants indicated that comparison is quite difficult for them. However, they also confirmed reducing grain losses as an enabler and important impact. One senior manager confirmed that it would be one of his two priorities. He showed his interest in the results of this study to assist him towards reducing grain losses.

"It is difficult. I think probably to have less losses, the emphasis will be on the product itself, and making sure that there are not losses." Informant 8

"So, it is a priority, absolutely, it is one of my two priorities right now. I don't think there is a single solution, it is going to be a hybrid solution, creating the awareness, but also showing people that I feel for them. I might be so caught up in my environment that have

not thought about things like that, so I think the sharing of that information from your study is going to be quite good. Lastly, I don't know what I don't know." Informant 22

One senior manager in the grain handling and storing sector noted that climate conditions are by far more important and, in case the climate is good, they have enough checks and balances in place to prevent, or reduce, grain losses.

"By far it will be the climate as the biggest driver of this. That is number one and out of our control. And if climate is in place, it is difficult to compare, our industry has evolved so far in reducing the grain losses that it is not measurable compared to the tonnage that we handle." Informant 9

While, for the other informant in the processing sector, producing and sustaining quality was more important than focusing on the reduction of losses.

"For us there is a continuous focus on improving, not to lose the quality and also sustaining the quality." Informant 25

One informant, who holds a top management position in the grain trading sector, indicated that a loss of grain is when the grain loses the identity and not necessarily physical or volumetric losses. Therefore, the shortening of the value chain, or the integration thereof, was a more important enabler.

"The loss of identity is the biggest loss is like losing that to commodity supply chain. I think the losses is of the identity and is not volumetric so much. My own ambition is to connect the farmer and to integrate the supply chain all the way through." Informant 7

One of the senior directors in the handling and processing sector noted that having growth strategies in place was important to reducing losses.

"I would see the enablers that we have, like growth strategies and horizontal and vertical growth and processes in place, if you got those in place, this or theft or the way you handle grain should really become negligible. You look at it from the perspective of I have processes and people in place. Those people and practices should not affect our vision here in the future how we can become sustainable as a company what type of people you employ, how your risk management works so all that you have in place, they should actually be the net that catches that. That is what you would hope." Informant 17

For an informant noted that: not having enough rain in the area, diversification of business and increasing processing was more important than reducing grain losses to ensure sustainability.

"And to do more processing with what you get. You must inspire guys to spread the wings and do something else in the production." Informant 4

For one senior manager in the grain handling and storing sector, grain losses are not the main issue but focusing on, and fulfilling, clients' needs by remaining competitive is more important.

"From my side, we are not worried about grain losses that much, we do the management of our silos, we check on that. We definitely focus on our client side, new technologies in our silos, relationship with clients, the financing differentiate, product differentiation that we can deliver to our clients as well. Grain losses is not a big factor at the moment, but we are doing a lot of things right evidently that results that off. Our focus is direct to the client and that speaks to the point where we mentioned the profitability of the farmer." Informant 12

Another informant in the trading sector elaborated further on the importance of shortening the value chain, as a dominant enabler, compared to the risk of grain losses. He indicated that eliminating double handling will not only yield better financial results, but will have other benefits for the industry as well.

"What we can do by shortening the supply chain on one hand, by eliminating double handling on the other hand and by playing our routes between points cleverer, not only to drive the economic benefits but might be other benefits from that, as well. In terms of comparison, we are exposed to far greater business risks than grain losses. It is not high on the radar of our potential high risks that are facing our company. Our company faces many risks: competition, price, and hedging risk, a mistake on the admin side can cost us millions of rands, so grain losses is not a major risk factor." Informant 11

One top managers in the grain handling, storing and processing sector noted that a sustainable agricultural model for the future should apply more biological than chemical practices. He views this as an important area of focus in the grain industry in South Africa.

"We are very much aware what the consumer wants in terms of healthy food. So, we did a lot to comply with European Standards in terms of food security and food safety. We tried

to be as friendly towards nature and towards the planet to really leave it a better place than we got it, so we are moving towards organic farming and we spent a lot of time, energy, and money on trying to get it and we have got the three pillars: healthy soil, healthy food, and is healthy people. So, in terms of the grain, we are not there yet because the sustainable agricultural model for the future is the way that we should go in future. I think in terms of the sustainability one should mention that for grain in South Africa but also worldwide you should move nearer to biological practices, instead of chemical practices." Informant 18

And lastly, one executive manager in the handling and storage sector indicated that without people and the culture of people, no sustainability strategy would be implemented.

"So, you can compare as much as you want, if it doesn't become part of the culture, it will definitely be an issue that you will not address quickly." Informant 1

5.3.3.4.1 Summary

All in all, the researcher perceived that some informants found the comparison quite difficult and a few experienced it as irrelevant. These informants particularly believed that reducing grain losses, in comparison with the noted other enablers, is *not* significant, and in some cases within the context of South Africa, not significant at all. Some of the informants failed to execute a comparison and rather discussed the challenges which they are facing as regards the reduction of grain losses. They also talked about the impact of other elements, and not necessarily the sustainability of the grain industry, but factors that influence grain losses in general.

5.4 CONCLUSION

The summary of the findings show that 15 major categories emerged which were used to create the constructs and themes of the study. Table 15 demonstrates the summary of the emerged categories based on the frequency of occurrence in the entire data set, as well as frequency of utilisation in the constructs of the study.

- Table 15: Summary of categories ranked based on frequency of occurrence in the entire data set and according to the frequency used to build constructs

(Source: Researcher)

Rank	Categories	Total Frequency	Frequency of Use in Constructs
1	Grain and Grain Management.	**2 028**	**11**
2	Profitability and Economic Sustainability.	**1 375**	**20**
3	Supply Chain Management.	**1 060**	**23**
4	People and Corporate Culture.	**807**	**10**
5	Regulatory Regime.	**369**	**14**
6	Stakeholder Management.	**353**	**8**
7	Technology and Technological Efficiency.	**349**	**10**
8	Sustainability, Corporate Sustainability, Corporate Sustainability Strategy and Triple bottom-line.	**271**	**7**
9	Corporate Strategy and Strategy Execution.	**227**	**2**
10	Local government and Infrastructure.	**214**	**5**
11	Environment and Planet.	**206**	**11**
12	Community and Social Responsibility.	**159**	**7**
13	Food Safety and Food Security.	**157**	**7**
14	Theft and Crime.	**151**	**4**
15	Risk Management.	**71**	**4**

'Grain and the Grain Management' was the dominant category with the highest frequency occurrence in the entire data set. This category was used 11 times to build up the constructs of the study in responses to the research questions. The second dominant category, utilised 20 times to build up different constructs, was 'Profitability and the Economic Sustainability'. This category was build up from sub-categories and codes which were encountered 1 375 times in the entire data set. The third category, occurring 1 060 times, was 'Supply Chain Management' which was utilised 23 times as the dominant category to build the constructs of the study. This category was followed by 'People and Corporate Culture' which was used 10 times.

The fifth category, with a frequency count of 369, was ‘Regulatory Regime’, followed by ‘Stakeholder Management’ as the sixth-ranked category. The fifth and sixth categories were quite near to each other, based on frequency of occurrence. However, the fifth category was comparatively utilised more in the construction of constructs. ‘Technology and Technological Efficiency’ and ‘Sustainability, Corporate Sustainability, and Corporate Sustainability Strategy’ formed the seventh and eights ranked categories used 8 and 7 times, respectively, to build constructs.

‘Corporate Strategy and Strategy Execution’, ‘Local government and Infrastructure’, and ‘Environment and Planet’ formed the ninth, tenth, and eleventh categories with, more or less, the same frequency count. However, they were used 2, 5 and 11 times to build constructs. Accordingly, the categories ‘Community and the Social Responsibility’ as well as ‘Food Safety and Food Security’ were used equally to build the constructs. The same applied to ‘Theft and Crime’ and ‘Risk Management’ as the fourteenth and the fifteenth ranked categories that were both used 4 times to build up constructs of the study.

CHAPTER 6: DISCUSSION OF RESULTS

6.1 INTRODUCTION

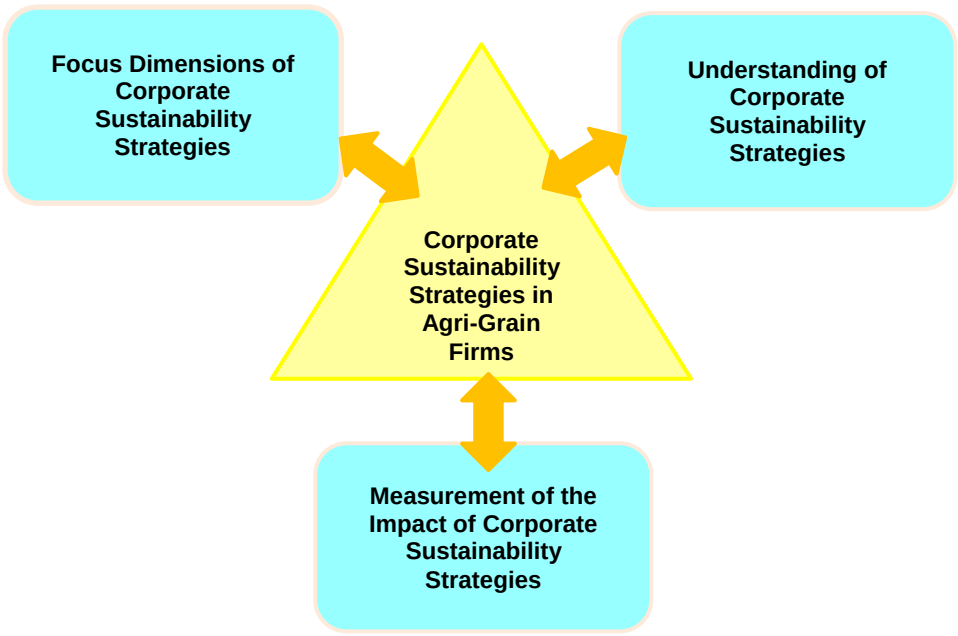
This chapter discusses the findings, presented in Chapter 5, garnered through in-depth face-to-face interviews with 26 informants (CEOs, senior managers, directors, and general managers of agri-grain firms). In order to provide insights into the problem identified in Chapter 1, and answer the research questions, as presented in Chapter 3, the findings will be discussed in detail and examined in view of the literature reviews, as per Chapter 2, and in the context of the study as a whole.

The research findings contribute to an enhanced comprehension of the corporate sustainability strategy dimensions as well as the sustainability strategy execution enablers and inhibitors. Moreover, the findings offered new insights into sustainability strategies in the grain industry and in association with the reduction of grain losses which have seldom been discussed in the reviewed literature. Therefore, the relevance of the outcomes and the reviewed literature will be explored and presented in this chapter.

6.2 DISCUSSION OF RESULTS FOR RESEARCH QUESTION 1

RESEARCH QUESTION 1: To what extent are corporate sustainability strategies understood and measured?

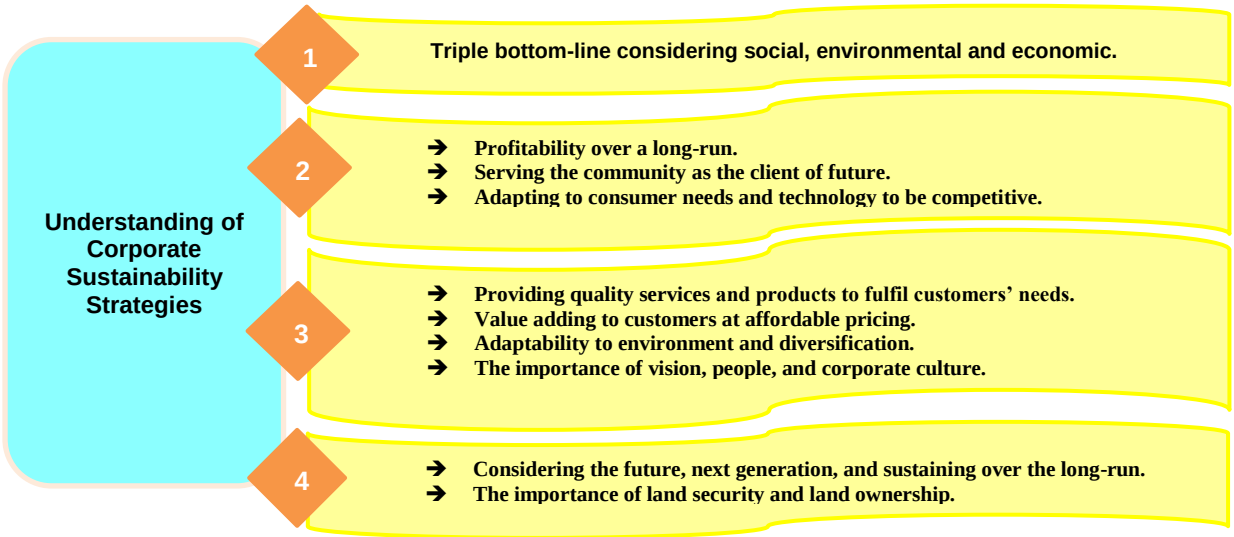
Research Question 1 sought to explore and identify the understanding of corporate sustainability strategies by individuals in agri-grain firms, the perceived dimensions of these strategies and, consequently, how the impact of these strategies are measured on organisations. Accordingly, Research Question 1 confirmed the three main dimensions of corporate sustainability as: economic, societal and environmental, as identified in the literature (Szekely & Knirsch, 2005; Peloza et al., 2012; Bansal, 2005; Montiel & Delgado-Ceballos, 2014). These areas presented as focus dimensions with differing levels of attention. Figure 8 presents an overview of the structure that Research Question 1 is aiming to explore.



- Figure 8: Overview of the structure of Research Question 1 (Source: Researcher)

6.2.1 Understanding of Corporate Sustainability Strategies

The findings which resulted from interviews, as presented in Chapter 5, supported the common understanding of corporate sustainability strategies. Figure 9 presents the ten different interpretations of corporate sustainability strategies, ranked in four main groups, and in the context of agri-grain firms in South Africa. The analysis of the gathered data was executed according to the frequency of clustered counts.



- Figure 9: Summary of Findings - Understanding of Corporate Sustainability Strategies (Source: Researcher)

The highest ranked understanding of corporate sustainability strategies, with a frequency count of seven, was ‘corporate sustainability strategies as the triple bottom-line covering various elements namely: economic, social and environmental and not just one dimension’ which can be appraised as the common understanding of corporate sustainability strategies. This definition supports the definitions of Bansal (2005), Dyllick & Muff (2015), and Lloret (2016) who agreed on the three-dimensional aspects of corporate sustainability to address economic prosperity, social responsibility and environmental integrity.

The second highest ranked group of constructs, with a frequency count of six were: ‘Being profitable over a long-run’, ‘Serving the community as the client of future’, and ‘adapting to customer needs and technology to be competitive locally and internationally’. These definitions though supported one or two dimensions of corporate sustainability, did not cover the three-dimensional focus. In addition, if we consider the corporate sustainability model that was developed by Lloret (2016), if an organisation wants to be competitive, it needs: sustainable leadership, corporate governance and stakeholders’ management which should be applied within market-based, resource-based and institutional based view. Therefore, the second-ranked constructs, although supported by a market-based view and stakeholder management, did not cover the other dimensions.

The third group of constructs, with the frequency count of three were: ‘Providing quality services and products to fulfil customers’ needs’, ‘Value adding to customers’, ‘adaptability to the environment, care about environment and diversification’, and ‘vision for organisation, people and developing the corporate culture’. Once again, the constructs supported one, or two, dimensions in the definition and understanding of corporate sustainability strategies and not necessarily the three-dimensional view. However, referring to the environmental aspect of corporate sustainability supports scholars (Shirvastave, 1995; Starik & Rands, 1995) who introduced “ecological sustainability”. Some scholars define corporate sustainability evaluating mainly in terms of its environmental dimension (Marshall & Brown, 2003; Bansal & Gao, 2006; Etzion, 2007).

According, the fourth group of constructs, with the frequency count of two, were: ‘consideration of next generation, future and sustaining overtime’ and lastly ‘Land security and land ownership’. These can be defined as an understanding from the context of corporate sustainability strategies. Although some literature agrees with the construct of ‘consideration of the next generation and the future’ (Lloret, 2016), focusing on the “long-term” component or “continuity” as the significant part of the sustainability definition,

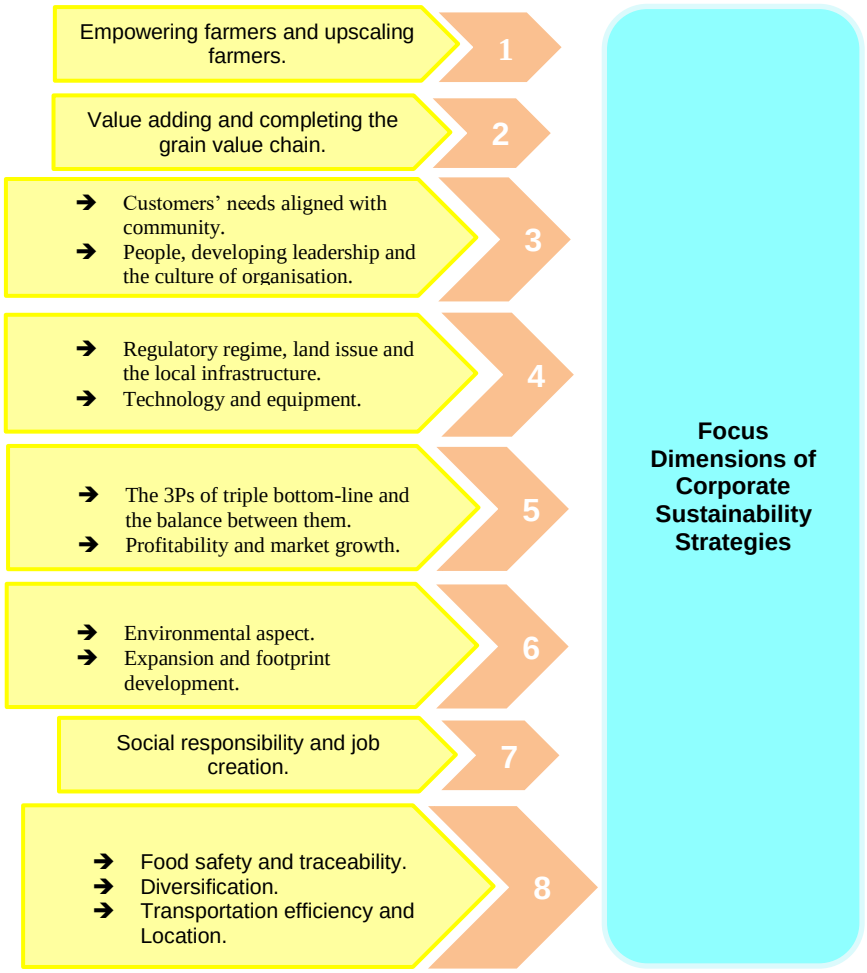
corporate sustainability has a more comprehensive meaning which covers the three dimensions of environmental, social and economic, or the 3Ps (Hammer & Pivo, 2016)

From the review, the top emerging themes unpacked corporate sustainability strategies as strategies which cover multiple dimensions (mainly economic, social and environmental). The majority of informants link their understanding to triple bottom-line, or the 3Ps, with some of them explicitly mentioning people, profit and planet. It can thus be assumed that there was a common understanding of corporate sustainability strategies among business practitioners in agri-grain firms. However, literature suggests that there is no standard definition and a lack of clarity regarding the meaning and understanding CS (Hart & Milstein, 2003; Hart & Dowell, 2011; Montiel & Delgado-Ceballos, 2014).

All other definitions either partially, or totally, except the last construct 'land security and land ownership' as supported by literature (Shirvastana, 1995; Starik & Rands 1995; Marshall & Brown, 2003; Bansal, 2005; Etzion, 2007; Dyllick & Muff, 2015; Lloret, 2016), however, understanding corporate sustainability strategy as 'land ownership' refutes the literature. It can, however, be rooted within the significant concern regarding this issue in the grain industry at the time of the study. The various other elements, as mentioned by the informants, clearly illustrate that the concept of 'corporate sustainability' as well as 'sustainability strategy' does not carry the same meaning for everyone. Individuals thus perceive sustainability, corporate sustainability and sustainability strategies differently.

6.2.2 The Focus Dimensions of Corporate Strategies that Drive Sustainability in Agri-grain Firms

The second interview question requested informants to highlight the dimensions of sustainability strategies that their corporates were focusing on. The findings, as presented in table 6 were grouped into ten different constructs, ranked from one to eight. Figure 10 illustrates the summary of findings for interview question 2, as based on the ranked constructs.



- Figure 10: Summary of Findings for Corporate Sustainability Strategy Dimensions (Resource: Researcher)

The highest ranked focus dimension which drives sustainability in agri-grain firms, with a frequency count of eight, was 'empowering farmers and supporting them to stay on the land to produce and upscale' followed by the second construct, with a frequency count of seven, as 'value adding and completing the value chain through producing quality product'. The third and fourth ranked constructs, with a frequency count of six and five, respectively, included the focus on 'customers' needs in alignment with community', 'people, developing leadership and the culture of organisation', 'government policies, land issue and local infrastructure', and accordingly, focus on 'technology and equipment'.

The fifth ranked construct focused on 'the three dimensions of sustainability, or the 3Ps of the triple bottom-line and the balance amongst them'. This construct was followed by 'profitability and the economic growth', as the fifth-ranked construct, with a frequency count of four. The two constructs, which were ranked fifth and sixth, were 'environmental aspects'

and ‘expanding the footprint in the country’ with a frequency count of three. This was followed by ‘social responsibility and job creation’, which emerged as the seventh-ranked construct, with the frequency count of two.

Finally, the constructs ranked eight, with a frequency count of one for each, focused on ‘food safety and traceability’, ‘diversification’ and ‘location to win the transportation game’. These emerged as new insights in the context of the three-dimensional focus of sustainability, or the triple bottom-line.

According to the reviewed literature, the three-dimensional focus on corporate sustainability strategies, and the balance between the 3Ps (people, profit, and planet have been ascribed by most scholars (Montiel & Delgado-Ceballos, 2014; Aragon-Correa, 2013; Starik, 2013; Bansal, 2005; Szekely & Knirsch’s, 2005; Epstein & Roy, 2001). After Bansal (2005), initiating the new theoretical construct for corporate sustainability with the consolidation of corporate social responsibility, environmental management and value creation, some other scholars added more elements under other defined dimensions (Szekely & Knirsch’s, 2005; Lloret, 2016). However, the evaluation of environmental focus (Marshall & Brown, 2003; Bansal & Gao, 2006; Etzion, 2007), or the focus on the social dimension (Margolis & Walsh, 2003; Schmidt & Rynes, 2003), was agreed upon by some scholars, independently.

Although the first ranked construct, ‘empowering farmers to upscale production’, supports the social responsibility dimension of corporate sustainability, it does not support the three-dimensional focus, as per literature. However, the emergence of the second and third constructs, which refer to ‘value adding to customers’, focuses on ‘customers’ needs aligned with community’, and ‘people, leadership and the culture of organization’ which support the elements of corporate reputation, customer relationships, and value creation for the stakeholders as articulated by Szekely and Knirsch’s (2005), to balance the three CS pillars. In addition, the fourth constructs, ‘regulatory regime and the land issue’ as well as ‘technology and equipment’ also support the elements of value creation for stakeholders which could be served by the social and environmental dimensions of CS (Hall & Vredenburg, 2003).

Interestingly, the fifth-ranked construct, with its focus on ‘the 3Ps or the three dimensions’ is fully supported in literature (Shirvastava, 1995; Montiel & Delgado Ceballos, 2014; Aragon-Correa, 2013; Starik, 2013; Bansal, 2005; Szekely & Knirsch’s, 2005; Epstein & Roy, 2001). The other fifth-ranked construct, namely ‘profitability and the focus of the

market', only supported the economic dimension of CS. It was stressed by informants supporting the focus on profitability, without profit-making as the prerequisite, the focus on the other dimensions would not be facilitated. There is a lack of literature to support this finding.

The six ranked constructs, including focus on 'environmental aspect', supported scholars who concentrated on environmental evaluation (Marshall & Brown, 2003; Bansal & Gao, 2006; Etzion, 2007). The focus on 'expansion and footprint development' referred to only the economic dimension of sustainability.

The seventh-ranked construct, 'social responsibility and job creation', explicitly supported the literature (Margolis & Walsh, 2003; Schmidt & Rynes, 2003) by concentrating and evaluating corporate social responsibility. Constructs ranked eighth ('food safety', 'diversification', and 'transportation efficiency') offered new insights, as focus dimensions of CS, within the context of this study that has not explicitly discussed in the literature.

Many informants highlighted the significance of looking after farmers, or their clients, by adding value to the chain. These drivers of corporate sustainability strategies within their firms, particularly in the grain industry as part of the agribusiness sector, could be developed further to extend the relevant literature. This highlights the importance of this study in this specific context.

6.2.3 Measurement of the Impact of Sustainability Strategy Dimensions

The third interview question sought to establish how the impact of sustainability strategies' dimensions was measured within agri-grain organisations. The findings, presented in Table 7, included 12 various constructs, which were ranked in seven groups. The highest ranked construct for measuring the impact of sustainability strategies, with the frequency count of 16 was 'measuring the bottom-line or the profitability of businesses'. Measuring the impact through 'internal and external audits, risk management, and adhering to HACAP guidelines' emerged as the second construct, with the frequency count of seven, which was followed by measuring 'customers' loyalty or customers' satisfaction' as the third ranked construct with the frequency count of five.

Measuring 'performance and efficiency of people through the defined KPIs' and, surprisingly, 'electricity consumption and water usage' as well as 'the social responsibility

through quantifying the involvement in communities' emerged as the fourth ranked constructs with the frequency count of four. Compulsively, measuring sustainability through 'triple bottom-line reporting' emerged as the fifth ranked construct, with the frequency count of three, similar to 'not measuring the impact because it is difficult to quantify'. Informants were chosen purposefully from various sectors of the grain value chain downstream. Consequently, the milling sector was measured through 'milling extraction' and the grain handling sector was measured through 'stock measurements' which also emerged as the sixth ranked constructs with a frequency count of two. The seventh, and last, ranked constructs referred were 'the environmental aspects' and 'the yield or the production output' with a frequency count of one each.

To manage the triple bottom-line and balance expectations of various stakeholders, strategic decision makers need insight and comprehensive tools, as per Mc Williams et al. (2014), to measure their firms' performance in relation to the various stakeholders with whom they have direct, indirect or transactional relationships including local communities, governments and societies. Therefore, the socio-environmental measures of performance should be added to the typical financial measurements (Hubbard, 2009).

Since there is no standard method to measure corporate sustainability, as Montiel and Delgado-Ceballos (2014) indicated. This was also approved by some other scholars who agreed on a few measurements for the environmental sustainability incorporates (Walls et al., 2011; Delmas et al., 2013). Various methods have been developed and implemented by different parties including DJSI (Dow Jones Sustainability Index), GRI (Global Reporting Initiative), Bansal (2005) and SBSC (Sustainability Balanced Scorecard). All these elements have been defined to measure and evaluate the performance of the CS three dimensions (Montiel & Delgado-Ceballos, 2014).

Furthermore, the sustainability balance score-card (SBSC), introduced by Figge et al., (2002), as a functional and comprehensive tool used to integrate sustainability into firms' strategic management system by calculating their economic contribution and environmental and societal impacts. Corporates can contribute to global sustainable development by improving their performances in the three dimensions. This can be affected through the integration of environmental and social soft objectives into daily business activities and ensuring the continuous measurement and monitoring of economic, environmental and social performance.

Whilst the highest ranked construct for measuring the impact of sustainability strategies namely ‘measuring the bottom-line or the profitability of businesses’ supports economic performance measurement as one of the dimensions of sustainability, it refuted literature which agreed upon the three dimensional performance measurement of the CS (Montiel & Delgado-Ceballos, 2014; Mc Williams et al., 2014; Hubbard, 2009).

Although measurements, such as ‘internal and external audits, risk management and adhering to HACAP guidelines’, ‘customer’s loyalty’, ‘performance and efficiency of people through the defined KPIs’, ‘measuring electricity consumption and water usage’ and ‘the social responsibility through quantifying the involvement in communities’, which emerged as second, third, and fourth constructs, supported the measurements of the elements of economic, social and environmental dimensions of sustainability, they did not address the three dimensional measurement method according to the literature (Jayachandran et al., 2013; Waddock & Graves, 1997; Montiel & Delgado-Ceballos, 2014; Bansal, 2005).

Interestingly, the fifth construct, mentioned by three informants from the non-profit sector, referred to triple bottom-line reporting, or sustainability measurements by corporates, which were not supported by the interviewed profit organisations. Sustainability reporting particularly supports GRI, as explained in the work of Montiel and Delgado-Ceballos (2014), and also the method defined by Bansal (2005). Surprisingly, the ranked construct, mentioned with similar frequency, emerged as ‘not measuring the impact as it is difficult to quantify’ which contradicts with literature.

The seventh ranked construct (‘measuring the environmental aspect’) was mentioned by only one informant. This construct, however, supports the literature (Walls et al., 2011; Delmas et al., 2013) whilst the other constructs (ranked the sixth and seventh, namely ‘milling extraction’, ‘stocks and handling losses’ and ‘yield or farming production output’) emerged as new themes and extended the literature to consider the context of the study in the grain industry.

6.2.4 Conclusion: Research Question 1

The research findings concluded that sustainability, corporate sustainability, sustainability strategies and the overarching concept of *corporate sustainability strategies* meant different things to different people and were interpreted differently in the different sectors of the grain value chain. Through an analysis of the data, a common understanding (which

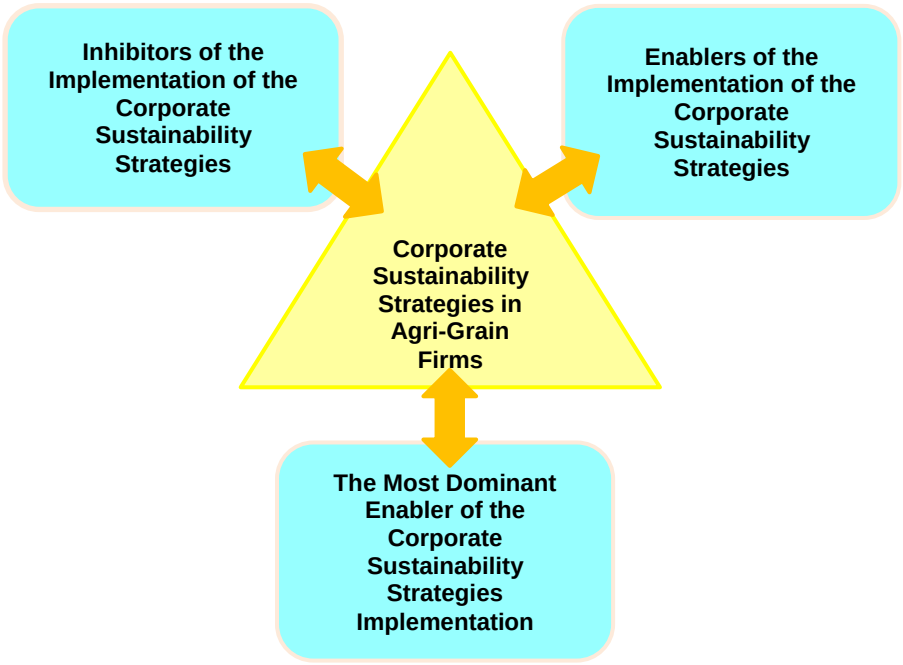
included the 3Ps) as to a notably large number of constructs emerged that illustrated a disagreement with individual interpretations. Furthermore, agri-grain corporates awarded little attention to certain focus areas and, in cases where the focused strategy dimension was clear, how precisely its impact was measured remained vague and unsettled to most informants.

Sustainability and particularly corporate sustainability strategies are complicated and somehow ambiguous concepts for agribusiness sectors. Often, corporate sustainability strategies are not clearly defined within agri-grain firms. This results in focus areas not being sufficiently identified or, if they are, not being persistently monitored and measured. The interviewed agri-grain corporates mainly measured the impact of profitability dimension and rarely payed attention to the accurate measurement of the two other dimensions, or their economic impacts. These findings for Research Question 1 once again stress the importance of this study, particularly within the chosen context, supporting the exploration of the interplay between sustainability practices and the profitability of agri-grain firms. In addition, the emergence of new themes relevant to the context of the study can initiate a new measurement model for corporate sustainability strategies in the grain industry.

6.3 DISCUSSION OF RESULTS FOR RESEARCH QUESTION 2

RESEARCH QUESTION 2: What are the enablers and inhibitors to implementing corporate sustainability strategies in the grain industry and what is the most dominant enabler?

Research question 2 sought to establish the enablers and inhibitors of the execution of corporate sustainability strategies within agri-grain firms the grain industry. Furthermore, it explored and established the most dominant enabler for the implementation of these strategies. The answer to this research question was attained through informants' determining which of the factors were perceived as enablers and which regarded inhibitors. The most dominant enabler for the execution of the sustainability strategies was also identified. Figure 11 demonstrate an overview of the structures for Research Question 2.



- Figure 11: Overview of the Structures for Research Question 2

(Source: Researcher)

6.3.1 The Enablers of the Execution of Corporate Sustainability Strategies

The fourth interview question aimed to establish enablers to the implementation of corporate sustainability strategies. The summary of the research findings is presented in Figure 12 which illustrates the 13 various constructs which were ranked in nine groups as the main enablers of the execution of the sustainability strategy.

- Figure 12: Summary Findings - Enablers of the Implementation of Corporate Sustainability Strategies
(Source: Researcher)

The first ranked construct, with a frequency count of 20, was ‘leadership, enabling people and developing the skills of people’ as the dominant enabler. The second ranked construct and execution enabler of CS strategies, with a frequency of 14, was ‘capital and having a sound balance sheet’. Accordingly the third, fourth and the fifth ranked constructs, with the frequency counts of ten, eight and six, respectively, referred to ‘the client-focused culture to understand and satisfy customers through providing quality services and completing value chain’, ‘access to technology, information and doing continuous improvement’ as well as ‘supporting farmers to stay on the land, increasing production and the importance of land ownership’ as CS execution enablers.

The six-ranked constructs, with a frequency count of five were, ‘market growth, competitiveness and the capacity to compete locally and internationally’ as well as ‘providing quality product and the capacity for food safety and food traceability’. The seventh ranked constructs, with a frequency count of three were, ‘the social responsibility and serving the community’ and ‘efficient local infrastructure’ as the enablers. ‘Integration of the value chain and more working together’ was mentioned twice and ranked as the eighth construct and enabler whilst the ninth ranked constructs, with the frequency count

of one were ‘the climate’, ‘care about environment’ and ‘ the Institutional capacity’ as the enablers of CS strategy implementation.

According to the reviewed literature, several elements were indicated which support one-, two-, or three-dimensional views of corporate sustainability strategies and which would ultimately enable, or inhibit, the execution of these strategies and influence the competitiveness of the CS. Shirvastana (1995) emphasised the significance of environmental management, while Starik and Rand (1995) highlighted the significance of institutional capacity to collaborate in the long-run. While the majority of scholars agreed on the balance required amongst the three dimensions of sustainability (Bansal, 2005; Szekely and Knirsch, 2005; Peloza et al., 2012; Aragon-Correa, 2013; Starik, 2013; Starik & Kanashiro, 2013; Mc Williams et al., 2014; Dyllick & Muff, 2015), most CS scholars refer to the stakeholder theory to substantiate and explain the drivers and enablers of CS strategies (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock et al., 2012; Peloza et al., 2012; Kang, 2013; Dyllick & Muff, 2015).

After the stakeholder theory, which encompassed most elements relevant to the three dimensions of sustainability (Freeman, 1984; Donaldson & Preston, 1995; Harrison & Freeman, 1999; Freeman et al., 2010; Hörisch et al., 2014), some scholars were also very specific regarding the elements that will drive sustainability. Gladwin et al., (1995) demonstrated the five main elements to achieve sustainable development in terms of human development and Szekely and Knirsch’s (2005) introduced a list of ten dimensions that should be addressed by corporate sustainability strategies. Markevich (2009) combined six views for the evolution of sustainability and Lloret (2016) developed a model which explicitly demonstrated the importance of sustainable leadership, stakeholder management and corporate governance in combination with resource-, market-, and institutional-based views.

The first ranked construct, namely ‘leadership, enabling people and developing the skills of people’ was identified as the dominant enabler and supports the sustainable leadership component of the CS model, as per Lloret (2016), as well as (in a certain sense) the stakeholder theory (Freeman, 1984; Donaldson & Preston, 1995; Harrison & Freeman, 1999; Freeman et al., 2010; Hörisch et al., 2014). As employees are the source of competitiveness, an investment in them, as well as the leadership structure, in corporates will foster integrity, trust and commitment whilst enhancing the success of organisations (Lyman, 2008). However, the emerged construct failed to agree with most scholars who confirm the balance amongst the three dimensions as an important enabler (Bansal, 2005;

Szekely & Knirsch, 2005; Peloza et al., 2012; Aragon-Correa, 2013; Starik, 2013; Starik & Kanashiro, 2013; Mc Williams et al., 2014; Dyllick & Muff, 2015).

Accordingly, the second and the third ranked constructs, namely 'capital' and 'fulfilling customers' needs' refer to improving the performance of the profitability dimension of the CS as well as addressing customer relationship management in the stakeholders' view but contradict with the holistic view of corporate sustainability and the importance of balance amongst the three dimensions of sustainable development (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Peloza et al., 2012; Kang, 2013; Dyllick & Muff, 2015). The emergence of the fourth construct, namely 'technology', agrees with Shirvastava's view (1995) regarding the importance of technology as one of the levers to drive CS. It should, however, be incorporated with the rest of the levers, or enablers, such as environmental management, ecological competitiveness, corporate social responsibility and economic prosperity.

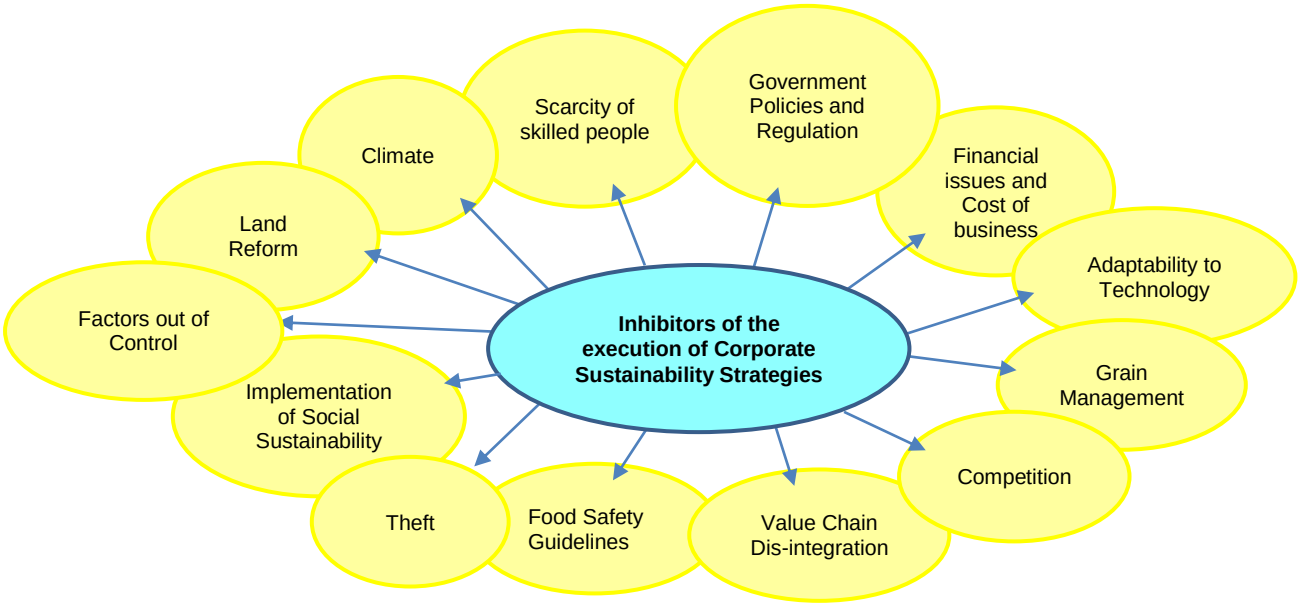
Consequently, the fifth, sixth and seventh ranked constructs include 'supporting farmers to stay on the land', 'market growth', 'providing quality product', 'social responsibility' and 'the importance of efficient local infrastructure'. These constructs drive one, or two, dimensions of CS and mainly agree with the stakeholder theory (Freeman, 1984; Donaldson & Preston, 1995; Harrison & Freeman, 1999; Freeman et al., 2010; Hörisch, et al., 2014). However, they contradict the three-dimensional view, as indicated.

Interestingly, the eighth ranked construct, 'integration of grain value chain and more working together' emerged as a new theme which could be further developed to extend to literature which relates to CS in the grain industry. Accordingly, ninth ranked constructs, such as 'the climate' and 'care about the environment' strongly supported Shirvastana (1995). However, this contradicts Hart and Dowell's views (2011) who call for an effective environmental management together with social upliftment, and economic accomplishments. Lastly, the construct of 'institutional capacity', as an enabler, agrees with Starik and Rand (1995), although it fails to address the rest of the dimensions to sustain long-term execution.

6.3.2 The inhibitors of the Execution of Corporate Sustainability Strategies

The fifth interview question required informants to identify inhibitors of the implementation of corporate sustainability strategies. A summary of the findings is presented in Figure 13

which illustrates the 13 various constructs, ranked in seven groups according to the frequency count.



- Figure 13: Summary Findings - Inhibitors to the Implementation of Corporate Sustainability Strategies
(Source: Researcher)

The first ranked construct, counting 23 times, was 'government regulations and policy uncertainty' followed by the second ranked construct, with a frequency count of 18 was 'the financial issues and the high cost of doing business'. 'The scarcity of skilled people', mentioned by 11 informants, was ranked as the third construct. This was followed by 'the challenge of keeping up with new technologies and adapting to new technologies' as well as 'the climate' as fourth ranked constructs being mentioned eight times.

The fifth and the sixth ranked constructs, with the frequency count of six and four, were 'land reform issue', 'the lack of proper grain management practices', 'increased competition' as well as 'the disintegration of the grain value chain' mentioned as inhibitors. Lastly, the seventh ranked constructs, with the frequency count of one, were 'too many food safety regulations', 'theft', 'difficulty of social sustainability implementation' and 'factors out of control', as mentioned by individual informants as inhibitors.

Whilst literature stresses the importance of balance amongst the three dimensions of the CS as an important enabler (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Peloza et al., 2012; Kang, 2013; Dyllick & Muff, 2015),

these inhibitors have not been covered explicitly. Surprisingly, the first ranked construct, 'government policies and regulations' emerged as the most dominant inhibitor to drive the CS strategies within the context of the study. Although some scholars such as Lloret (2016), indicate the significance of corporate governance, there are limited references in the literature, indicating government policies as the most dominant enabler or inhibitor.

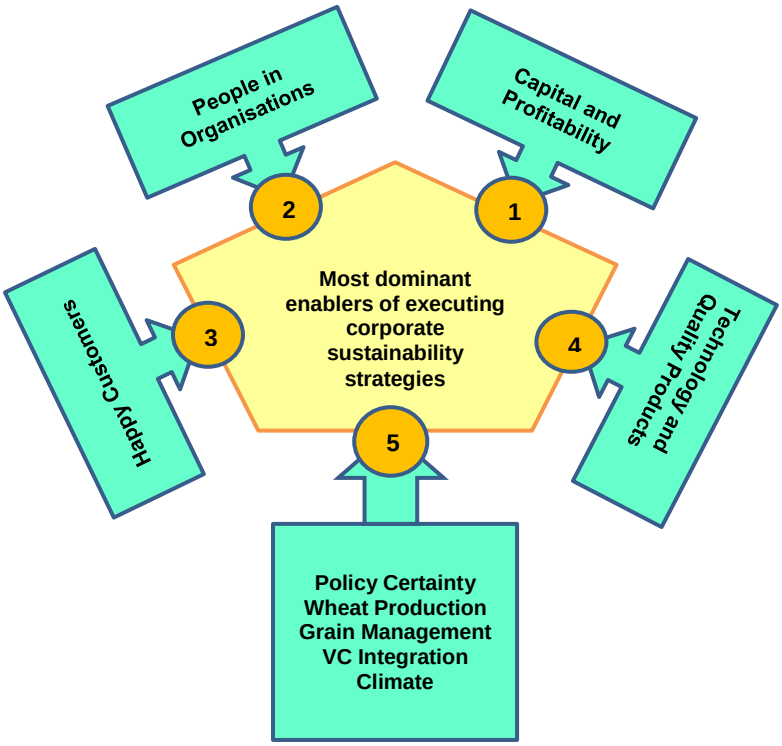
In addition, the second, third, and fourth ranked constructs, consisting of 'financial issues', 'scarcity of skilled people', 'access to technology' and 'the climate' refer to only one, or two, dimensions of sustainability and does not necessarily cover the challenges of three dimensions (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Peloza et al., 2012; Kang, 2013; Dyllick & Muff, 2015; Lloret, 2016). Interestingly, the fifth ranked constructs, including 'land reform' and 'grain management', is supported by literature which addresses the context of this study (Kumar & Kalita, 2016; Pingali, 2015; Dercon, 2002; Fafchamps, 2009), and can thus be extended further to develop CS in the grain industry.

'Competition' and 'the disintegration of the grain value chain', as the sixth ranked constructs, also extend to the literature which contextualises of the study. However, they partially support Porter and Kramer's views (2011) regarding the competitiveness and creation of shared value. 'Too many food safety guidelines', as an inhibitor, contradicts those scholars emphasising the importance of food safety and traceability (Dyllick and Muff, 2015; Sgarbossa & Russo, 2016). Surprisingly, the emergence of 'theft' as an inhibitor to sustainability, extends the literature context of this study. Furthermore, the rest of the seventh ranked constructs, consisting of 'difficulty of social sustainability execution' and 'factors that are not under control' as inhibitors, have been identified as ambiguous and contradict with the reviewed literature.

6.3.3. The Most Dominant Enabler to the Execution of Corporate Sustainability Strategies within Agri-grain Firms

The sixth interview question encouraged informants to identify the most dominant enabler which helped them to execute sustainability strategies within their corporates or organisations. Figure 14 presents the summary of findings which indicate that the most dominant enabler of CS strategy execution within agri-grain firms was 'the capital and a sound balance sheet or the firm profitability'. This enabler was also ranked as the first

construct with a frequency count of nine. Overall, 12 different constructs emerged which were ranked in five groups, according to the frequency count.



- Figure 14: Summary Findings - Most Dominant Enabler to Execution of Corporate Sustainability Strategies
(Source: Researcher)

The second ranked construct in terms of most dominant enabler, with a frequency count of seven, was ‘people or the employees in the organization’ whilst the third ranked construct was ‘nurturing trust in your relationships with customers’ with a frequency count of three. The fourth ranked construct, mentioned twice, was ‘providing a quality product’ and the constructs ranked fifth, with a frequency count of one, referred to ‘policy certainty and land safety’, ‘getting wheat farmers back on the farm’, ‘grain management’, ‘integration of the grain value chain’, ‘optimising the route planning and transportation’, and, lastly, ‘the climate’ as the most dominant enabler.

Surprisingly, the first ranked construct, ‘capital and profitability’ emerged as the most dominant enabler of corporate sustainability strategies with the interviewed agri-grain firms. The reasoning mentioned by interviewees was mainly the importance of profitability to also drive the other dimensions of sustainability. Although, this notion supports the economic sustainability, it contradicts with scholars who agreed on the importance of

balance in driving the 3Ps (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock et al., 2012; Peloza, 2012; Kang, 2013; Dyllick & Muff, 2015; Lloret, 2016). The second, third and fourth constructs, which include 'people', 'customers', technology', and 'providing quality' also support the stakeholders' views (Freeman, 1984). As indicated, they cover the performance improvement of the one, or two, dimensions of the CS.

With the exception of 'the climate' being the most dominant enabler and, as such, contradicts with the reviewed literature (Freeman, 1984; Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock et al., 2012; Peloza 2012; Kang, 2013; Dyllick & Muff, 2015; Lloret, 2016), the rest of the emerged themes, consisting of 'competitiveness', 'policy certainty and land safety', 'getting the wheat farmers back', 'grain management', 'integration of the grain value chain' and 'the optimisation of the grain transportation' extend the reviewed literature to embrace the context of the study and could be developed to establish a model for corporate sustainability of the grain industry.

6.3.4 Conclusion: Research Question 2

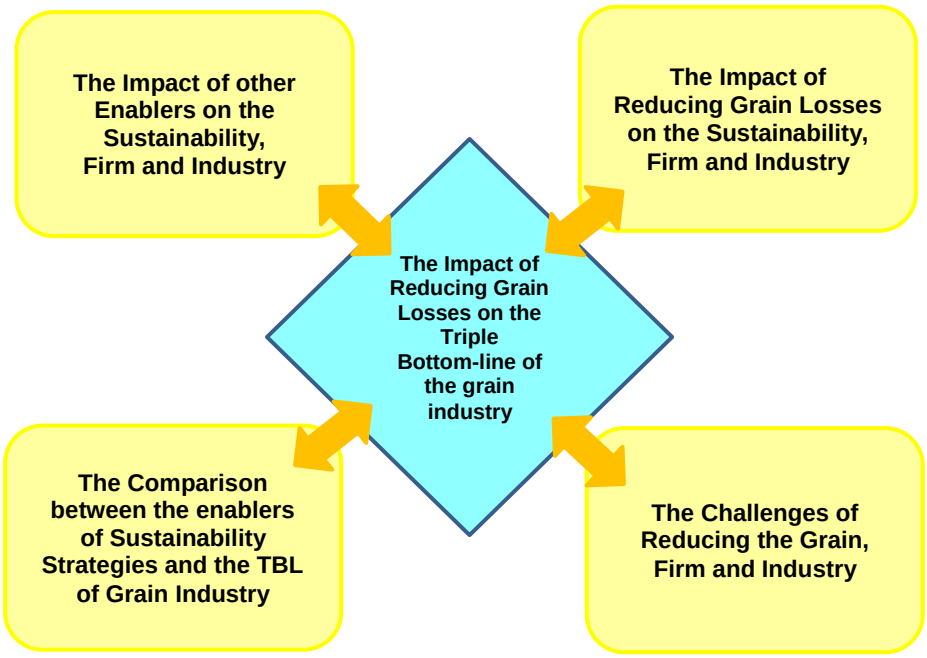
The findings of this research indicate that the *most dominant enabler* amongst interviewed agri-grain firms was 'capital and profitability' whilst the *most dominant inhibitor* was 'government policies and regulations as well as the issue of land reform and the lack of proper infrastructure in the country'. Although both results fail to fully support the reviewed literature, they are a clear indication as to the significant impact of dominant macro-political issues in the country on the grain industry.

Furthermore, most informants referred to the importance of having skilled people in organisations, leadership and the culture of an organisation as the main drivers which assist them in executing their strategies. The construct emerged as the second dominant enabler and as the first ranked enabler when interviewees were challenged twice with the question in two different formats. Moreover, a greater emphasis was placed on fulfilling customers' needs and adopting technology to executing the CS strategies which is also an indication of the importance of stakeholder management and the willingness to compete nationally and globally. This finding, once more, highlights the influence of macro-economic issues on the grain industry in the country.

6.4 DISCUSSION OF RESULTS FOR RESEARCH QUESTION 3

RESEARCH QUESTION 3: What is the interplay between reducing post-harvest grain losses and the sustainability of the grain industry and how can this be compared to other enablers which impact on the implementation of corporate sustainability strategies to support the TBL of the grain industry.

Research question 3 sought to explore and determine the relationship between the reduction of grain losses with the other enablers of corporate sustainability strategies within agri-grain firms and, furthermore, to understand the challenges which are being faced in reducing said losses in the grain industry. Informants were asked whether, or not, the reduction of grain losses significantly impacted them. They were further asked to elaborate on enablers and why these were considered as priority. It thus transpired that enablers were working together, and these combinations were enhancing the sustainability of the firm. Informants were also asked to establish the interplay between the enablers. Figure 15 illustrates the structure followed in the interview questions for Research Question 3.



- Figure 15: Summary Findings regarding the Impact of Reducing Grain Losses on The Triple Bottom-Line of the Grain Industry
  (Source: Researcher)

Although the literature reviewed, in relation to Research Question 3, confirms the positive impact of reducing post-harvest grain losses on agribusiness economics, management,

and sustainability, which also includes the grain management sector, as per Lipinski, et al. (2013), the correlation between the strategies to reduce the food-grain losses and the corporate sustainability strategies has not been explicitly established. This is clearly a gap and a further motivation to conduct this study. While Ge et al., (2014) confirmed the need to optimise agricultural supply chains and effective management strategies, Sgarbossa and Russo (2016) emphasised the significance of maintaining the balance amongst the three dimensions of sustainability strategies and proposed not only the closing of loops in current food supply chains but the activation of new loops to enhance sustainability development.

Dyllick and Muff (2015) stressed the importance of transparency in supply chain management and named the contributing factors "*the rule-changing strategies*" to create a sustainable agriculture. Accordingly, Kumar and Kalita (2016), concerned with the global issue of food losses, indicated that reducing post-harvest losses will significantly impact on enhancing food security since investing in this will facilitate a higher return in comparison to yield optimisation and thus result in the increase of food productions for 2050. Banson et al. (2014), previoulsy supported the same result in their study, based in the African continnet. The emergence of Zero Hunger as Sustainable Development Goal 2 (GOAL2: ZERO HUNGER, 2018), confirmed the importance of this notion.

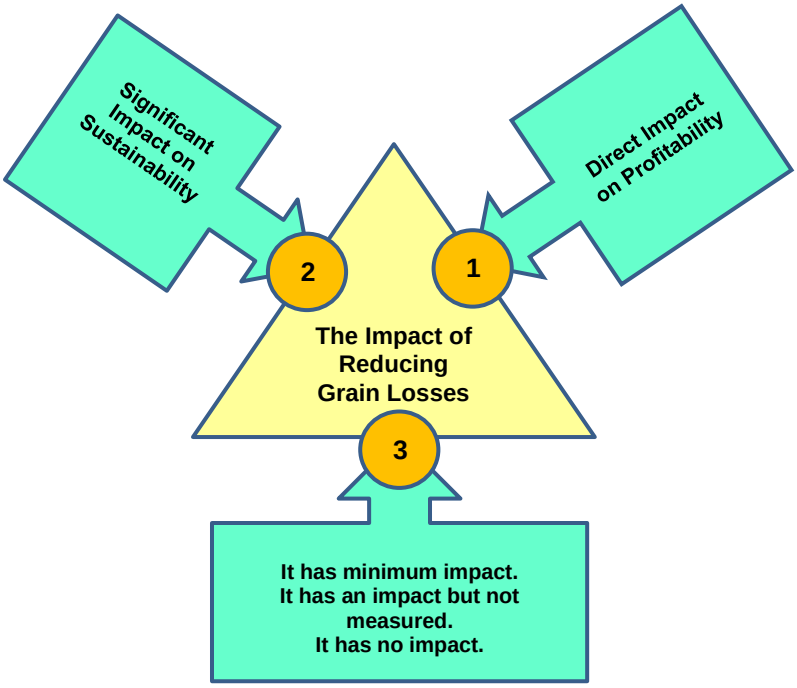
The commencement of agribusiness in 1956 and the development of agribusiness economics and management (Davis, 1956; Davis & Goldberg, 1957; Cook and Chaddad, 2000) were followed by the emergence of agricultural supply chain management. Agribusiness economics, quality analysis, food safety, traceability and other socio-economic and environmental objectives, relevant to agribusiness economics and management, developed as micro-analysis tools. This was supported by the adoption of resource-based theory in agriculture and diversification to overcome the impact of food losses (Cook & Chaddad, 2000). Lloret (2016) supported this idea by emphasising the incorporation of competitive strategies with firm-specific resources and capacities.

Kumar and Kalita (2016) confirmed that post-harvest losses formed the majority of food losses in developing countries and underlined the importance of optimum grain management practices, as well as the adoption of technological solutions to reduce post-harvest grain losses. Pingali (2015), Fafchamps, (2009) and Dercon, (2002) emphasised the importance of institutional capacities, government policies and investments in establishing property rights, including farming lands, to secure agricultural profitability and to motivate diversification. Olukunle (2017) proposed that an integrated approach is

required to involve various stakeholders to overcome food security challenges and enhance the fulfilment of the economic, social and environmental needs for agribusiness sustainable development.

6.4.1 The Impact of Reducing Grain Losses on the Sustainability of Agri-grain Firms and the Sustainability of the Grain Industry

The seventh interview question sought to establish a common understanding as to the impact of the reduction of grain losses on sustainability strategies within agri-grain firms. Figure 16 presents the summary of findings which indicates the significant impact of reducing grain losses on the profitability and/or sustainability of agri-grain firms who participated in the study and contributed to the emergence of this theme.



- Figure 16: Summary Findings regarding the Impact of Reducing Grain Losses on The Triple Bottom-Line of the Grain Industry
(Source: Researcher)

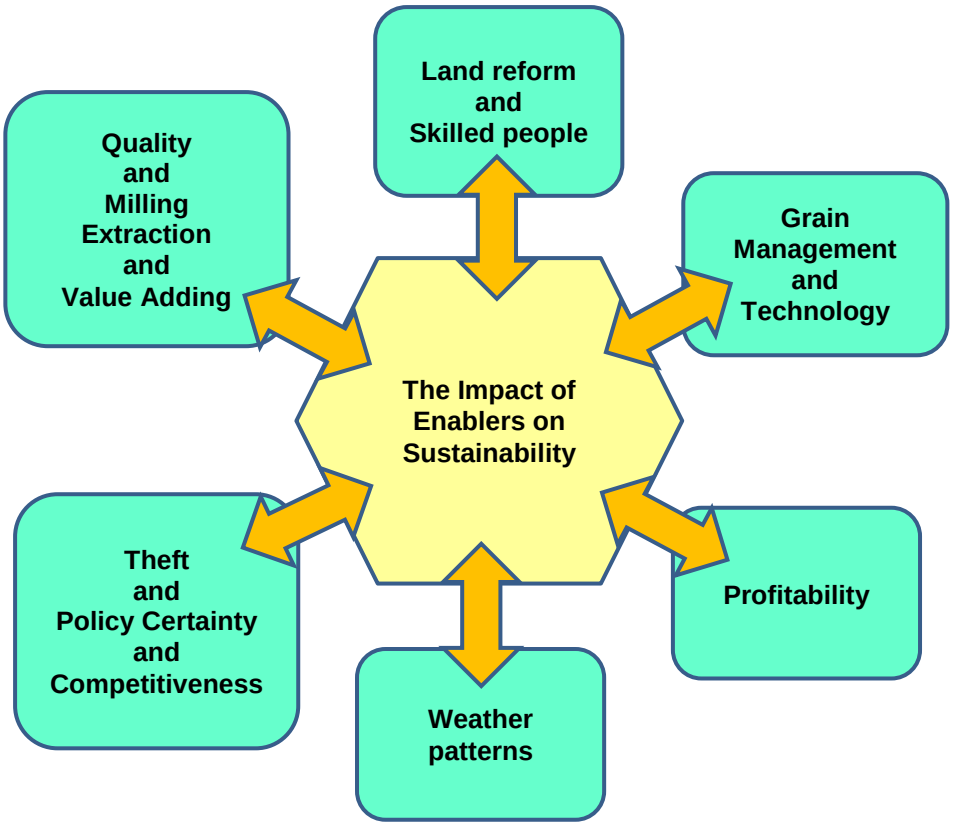
The first ranked construct, with a frequency count of 11, refers to 'the direct impact on the bottom-line and profitability of the firm' followed by the second ranked construct, with a frequency count of 10, which refers to 'the significant impact on the sustainability of firms'. Interestingly, the third construct consisted of 'reducing grain losses having minimum

impact', 'should have an impact but has not been measured yet' as well as 'having no impact' with a frequency count of three.

Referring to the reviewed literature, with regard to the impact of reducing food losses, Kumar and Kalita (2016), Olukunle (2017), Banson et al. (2014) and Lipinski et al. (2013) all agreed on the positive impact that reducing grain losses will have on the profitability of agricultural sectors, and hence sustainability, mainly from an economic point of view. The emergenec of the constructs 'having a direct impact on profitability' and 'having an impact on sustainability' fully support the literature. However, the emergance of constructs such as 'having minimum impact' or 'having no impact' contradict literature. Furthermore, the emergence of the construct 'should have an impact but has not been measured yet' highlights the significance of the study in raising awareness as to future research studied in this context.

6.4.2 The Impact of Other Enablers on the Sustainability of Agri-grain Firms and the Sustainability of the Grain Industry

The eighths interview question reminded informants of the enablers they mentioned in the second part of the study and requested them to elaborate on the interplay between these enablers and the sustainability of their firms. The intention was that informants compare the enablers which facilitate the execution of corporate sustainability strategies in the last question. Figure 17 illustrates the impact of 12 various enablers, ranked from one to six, based on number of times they were mentioned.



- Figure 17: Summary of Findings – Impact of Enablers on The Triple Bottom-line of the Grain Industry (Source: Researcher)

The first ranked constructs, with a frequency count of eight, were the impact of 'land reform, land ownership and the importance of the local production' as well as the impact of 'having skilled people and the expert resources'. These displayed the same frequency count compared to the impact of reducing grain losses on the CS of the interviewed firms. Consequently, the second constructs, with a frequency count of six, referred to the influence of 'grain management and practices' and 'the technology' on the sustainability of the agri-grain firms.

The third and the fourth ranked constructs, with frequency counts of five and three, namely the impact of 'economic sustainability' and 'weather patterns or climate' were appraised by the interviewed informants. The informants indicated the importance of 'theft and crime', 'policy certainty' and 'competitiveness or the capacity to compete locally and internationally' as the fifth ranked constructs with a frequency count of two. Lastly, the sixth ranked group of constructs, with a frequency count of one, were taking the impact of 'receiving and processing quality seed', 'extraction and moisture in milling' and 'value

adding and creating niche markets' into account mentioned by informants from mainly the processing sectors.

The emergence of 'land reform issue' as more important than reducing grain losses in the industry, supports the literature (Pingali, 2015; Fafchamps, 2009; Dercon, 2002) which confirmed the importance of property rights and land registration in the sustainability of agriculture and farming businesses. This is a clear demonstration of the dominance of macro-political issues on the grain industry at the time of the study. The same ranked construct as 'the importance of skilled people' compared to reducing the PHL, supports the relevant literature (Lyman, 2008; Lloret, 2016), however, and as indicated previously, it does not cover the performance improvement of all the three sustainability dimensions.

The second ranked constructs indicated as enablers to reduce grain losses ('grain management' and 'technology') fully support the literature (Olukunle, 2017; Kumar & Kalita, 2016; Pingali, 2015; Banson et al., 2014; Lipinski et al., 2013). However, the emergance of 'economic sustainability' as the third ranked construct only covers the performance improvement of the CS economic dimension. The fourth ranked construct, 'the climate', only supports the environmental dimension. Accordingly, the fifth ranked constructs ('theft and crime', 'policy certainly' and 'competitiveness') rather than 'reduction of grain losses', is in agreement with some scholars (Lloret, 2016; Pingali, 2015; Fafchamps, 2009; Dercon, 2002). This once more indicates that the governance of politics and crime issues in the country are impacting on the sustainability of the grain industry.

The sixth ranked constructs (impacts of 'receiving and processing quality seed', 'milling extraction and moisture' and 'value adding') were very segment oriented. They did, however, agree with literature which confirmed the importance of adding value and diversification (Lloret, 2016; Pingali, 2015; Cook & Chaddad, 2000). This did not necessarily cover the other CS dimensions and could be developed further to expand the literature in relevant sectors.

6.4.3 The Challenges of Reducing Post-harvest Grain Losses

The ninth interview question intended to explore and understand the challenges that agri-grain firms face regarding the reduction of grain losses within their organisations and industry. Furthermore, the intention was to raise awareness as to the reduction of grain losses happening in the grain industry in the country. Findings, presented in Table 13,

indicated the emergence of nine different constructs, ranked from one to eight, with most informants confirming that the dominant challenge for them was their 'grain management and practices'. This first ranked construct displayed the most counts namely 30.

The second ranked constructs, with frequency counts of 17, were 'theft and the financial investment in security technology' as well as 'access to new technology and investment in technology' with the same frequency count. Accordingly, the third and the fourth ranked constructs, with frequency counts of seven and six, were the challenges presented by a 'lack of skilled people' and 'cost of doing business and the cost of reducing the grain losses'. The fifth, sixth, and seventh constructs, with the frequency count of five, four and three, respectively, included the challenges of 'grain logistics and transportation', 'government policies and legislation and the lack of strong local infrastructure' and 'the weather patterns or the climate'. Surprisingly, the eight ranked construct, with the frequency count of one, raised the challenge of 'the recognition of the problem that there are grain losses happening'.

The emergence of 'grain management practices' as the dominant challenge of the grain industry supports the literature (Olukunle, 2017; Kumar & Kalita, 2016; Pingali, 2015; Banson et al., 2014; Lipinski et al., 2013) which highlights the significance of established management practices to reduce food-grain losses. Moreover, the studies around agribusiness management (Davis & Goldberg, 1957; Sonka and Hudson, 1989; Cook & Chaddad, 2000; King et al., 2010) confirm that strategic managers in agribusiness sectors need to adopt and develop agribusiness management strategies to overcome socio-economic, environmental and governance challenges and so cope with technological developments to restructure food systems. The emergence of the second ranked construct, 'access to technology and investment in technology', supports this notion. However, the emergence of the construct 'theft', as the second important challenge over the post-harvest grain losses, as the indication of the security issue in the country, extends the reviewed literature with regards to grain management.

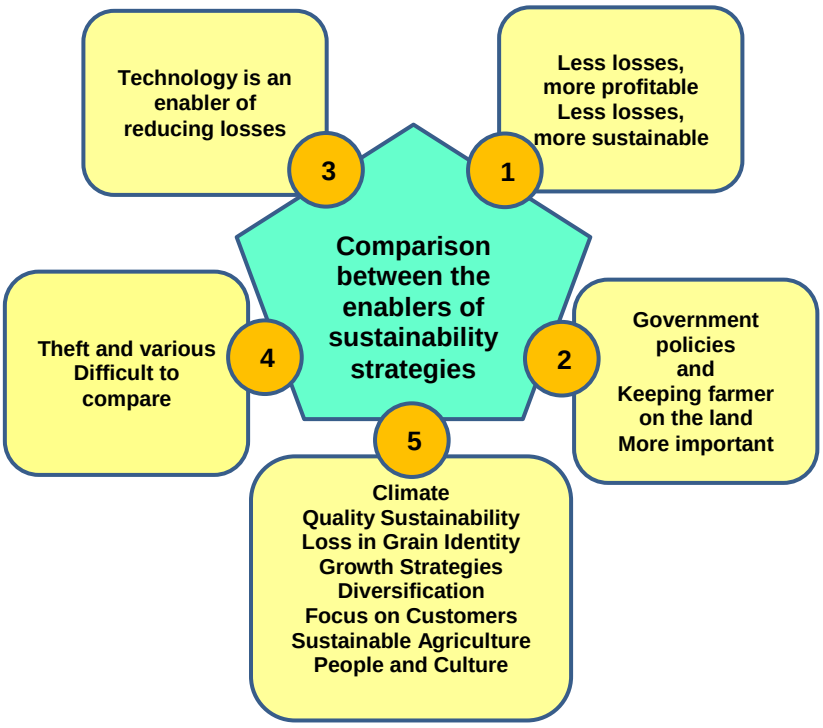
The third ranked construct, 'lack of skilled people' is in agreement with the reviewed literature (Lyman, 2008). However, the fourth ranked construct, 'the challenge of cost-effective ways to reduce the grain losses', requires more research to experiment and introduce innovative and affordable means and ways to reduce the post-harvest losses in the grain industry. Furthermore, the emergence of the challenges of 'grain transportation' and 'government policies and legislations' extend the reviewed literature within the context

of the study and regarding the significance of established structures and policies to create an enabling environment for the sustainability of the grain sectors.

The seventh ranked construct, 'the climate', contradicts with the reviewed literature, however, it can be studied further to explore and establish interplays. Lastly, the emergence of the eights ranked construct, 'recognition of the problem that there are grain losses happening', is very context driven and does not necessarily support the reviewed literature, although it was the first step considered to conduct this study.

6.4.4 The Comparison between Enablers in the Execution of Corporate Sustainability Strategies and the Triple Bottom-line of the Grain Industry

The tenth interview question sought to compare the enablers of corporate sustainability strategies implementation within agri-grain firms. Figure 18 presents the summary of findings, illustrating 14 comparisons articulated in 14 constructs which were ranked in five groups.



- Figure 18: Summary of Findings - Comparison between the Enablers of Sustainability Strategies Execution
  (Source: Researcher)

The first ranked construct with the most frequency count of nine was ‘less losses, more profitable and less losses, more sustainable’. This construct was followed by the second ranked construct with the frequency count of eight referring to the importance of ‘government policies and the land reform’ compared to the importance of reducing the grain losses in the country. The third ranked construct, with the frequency count of five, indicated the importance of ‘technology’ as an enabler that will also help in the reduction of grain losses.

Accordingly, the fourth ranked constructs, with a frequency count of two were ‘theft’ and ‘difficulty to compare the impact of other enablers with grain losses however the reduction of grain losses should have an impact’. The fifth ranked constructs, with a frequency count of one were comparison between ‘climate’, ‘quality sustainability’, ‘loss in grain identity than the grain volume’, ‘growth strategies’, ‘diversification and doing more value adding’, ‘focus on customers ‘needs’, ‘shortening the supply chain’, ‘sustainable agricultural model for future’ and the ‘people and the culture of organisation’. All these constructs were a higher priority to the informants than the focus on reducing grain losses.

The emergence of ‘less losses, more profitable and less losses, more sustainable’ once again supports the reviewed literature (Olukunle, 2017; Kumar & Kalita, 2016; Pingali, 2015; Banson et al., 2014; Lipinski, et al., 2013), confirming the positive impact of reducing the postharvest losses on the profitability and sustainability of agribusiness sectors. However, the emregence of the second construct as ‘governmnet policies, land reform, and the importance of keeping farmers on the land’ demonstartes the policy issues in the country and supports the reviewed lietarure (Pingali, 2015; Dercon, 2002; Fafchamps, 2009). The emergence of ‘technology and grain losses are two sides of the same coin’ fully supports the reviewed literature as regards the importance of technology to reduce the post-harvest losses (King et al., 2010; Lipinski, et al., 2013; Pingali, 2015; Kumar & Kalita, 2016) in a well-articulated manner.

Once more, the importance of ‘theft as the main source of grain losses’ as the fourth ranked construct, demonstrates the security issue in the country that threatens the sustainability of the grain industry. However, the emergence of ‘difficult to compare’, also as a fourth ranked construct, does not support the literature and once more highlights the importance of this study to investigate the enablers of the CS strategies within this context. ‘Climate as the biggest driver’ contradicts with the reviewed literature, whilst ‘quality sustainability’ that emerged within the processing sector’ is supported in the literature (Cook & Chaddad,

2000), with regards to emergence of food safety to support supply chain management in agribusiness economics and management.

Interestingly, the emergence of ‘loss in grain identity is more important than volumetric grain losses’ was a new theme and can extend the relevant literature as regards the main sources of post-harvest grain losses. Furthermore, ‘the importance of diversification and doing more value adding in the grain supply chain’ supports the literature (Lloret, 2016; Pingali, 2015; Cook & Chaddad, 2000) which emphasised the importance of diversification and utilisation of resources for value adding through the supply chain.

Accordingly, the emergence of ‘ focusing on clients ‘needs’, ‘shortening the grain supply chain’ and the importance of ‘people and organisational culture’ supports the reviewed literature with regards to the stakeholder theory and the significance of people in strategy execution (Freeman, 1984; Donaldson & Preston, 1995; Harrison & Freeman, 1999; Sharma & Henriques, 2005; Lyman, 2008; Lloret, 2016). Lastly, and somewhat surprisingly, the emergence of the importance to develop a ‘sustainable agricultural model for the future’ supports the reason for this study and the significance of the development of a CS model for the grain industry.

6.4.5 Conclusion: Research Question 3

In summary, the positive impact of the reduction of post-harvest grain losses on agribusiness economics, management and sustainability was well-perceived, understood and mostly agreed by the interviewed agri-grain firms, but was not necessarily on top of the developed and executed strategies due to macro-politics as well as macro-economic issues in the country.

In addition, increased concerns regarding government policies, lack of local infrastructure, land reform issues and, interestingly, theft, security of the farming sectors and the mount of investment this requires, were demonstrated as massive issues within the studied firms. This, once again, clearly highlighted the negative influence of macro-political challenges and the security in the country on the grain industry. However, the significance of grain supply chain optimisation and grain management practices which emerged as dominant themes when informants were asked about the challenges in reducing grain losses, supports the reasoning for the study to contribute to the development of the strategies and

establishment of means that will support the sustainability of agri-grain firms and the sustainable development of the grain industry.

6.5 CONCLUSION

This chapter compared the findings drawn from the gathered data from the face-to-face and in-depth interviews done with 26 informants from agri-grain firms with the reviewed literature in Chapter 2. Whilst a common understanding was established with regards to CS sustainability, the emergence of notably large numbers of various constructs demonstrated that sustainability, corporate sustainability and sustainability strategies meant different things to individuals in different sectors. The same finding was applicable to the focused dimensions, and the measurement of their impact which was ambiguous to informants, except the economic measurement which, of course, is the norm of every business.

The results for the Research Question 2, clearly demonstrated the macro-political and macro-economic issues in the country which influence the sustainability of the grain industry, and hence the inhibitors and enablers for the execution of the relevant strategies. The findings were supported further by the significance of people in organisations and the attention to fulfilling customers' needs in agreement with the stakeholder theory. Moreover, the results for Research Question 3 supported the same challenges within the studied industry and confirmed the reasoning for this study within the chosen context, aiming to explore and establish an interplay between the corporate sustainability practices and profitability of agri-grain firms as well as the triple bottom-line of the grain industry. The findings will be developed and concluded further in the next chapter.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 INTRODUCTION

This study aimed to firstly establish whether there is a common understanding of the corporate sustainability strategies within agri-grain firms as well as the focus dimensions and how the impact of these strategies are measured. Furthermore, the study examined the interplay between the enablers and the inhibitors of sustainability strategies with the reduction of post-harvest grain losses in the grain industry. The objective was to contribute to the development of a meaningful system for the sustainability of the grain industry.

This chapter presents the conclusions by consolidating the findings and discussion in a cohesive manner to meet the research objective. Accordingly, the implications for the study stakeholders will be highlighted and the research limitations will be presented. The chapter will conclude with recommendations for future research.

7.2 RESEARCH CONCLUSION

The research findings have successfully answered the formulated research questions, as per Chapter 3, meaning: understanding the corporate sustainability strategies, the focus dimensions of these strategies and how the impact of these strategies are measured in the chosen sectors of the grain industry. Furthermore, enablers and inhibitors of the CS strategy execution, and their interplay between the reduction of post-harvest grain losses and the sustainability of the grain industry, were presented. The reduction of post-harvest grain losses was considered as an enabler in Research Question 3 of this study.

7.2.1 Understanding Corporate Sustainability Strategies, the Focus Dimensions and Measurement Tools

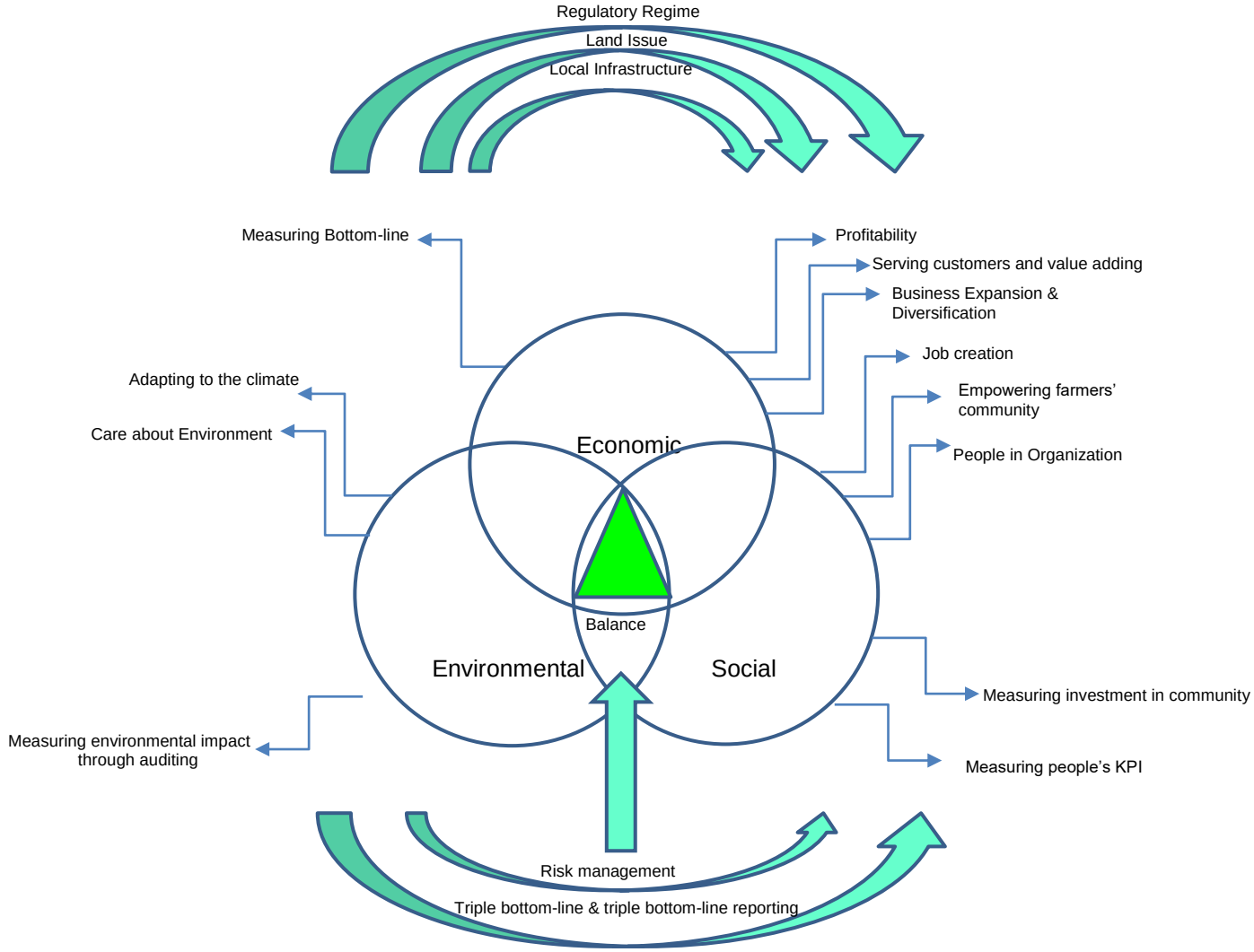
This study observed that corporate sustainability strategies meant different things to different people and in different sectors. In addition, the sustainability term, itself, had different meanings in different contexts. Although most informants confirmed that corporate sustainability strategies are focused on the social, economic and environmental dimension, there was a lack of comprehensive understanding of these strategies. The

other definitions of the CS strategies only covered one or two dimensions and mostly the economic aspect, rather than considering it as a three-dimensional model. Through observing informants' responses, it became clear that several macro-economic factors were influencing the industry as a whole. The definitions and understandings mostly demonstrated that stakeholders' management could not be fully controlled by business managers who formed part of the industry due to various external and internal factors.

Although Bansal (2005), and accordingly Dyllick and Muff (2015) as well as Lloret (2016), agreed on the three-dimensional view to corporate sustainability, other scholars such as Hart and Milstein (2003), Hart and Dowell (2011), and Montiel and Delgado-Ceballos (2014), confirmed that the definition of the CS strategies is ambiguous. Therefore, and considering the consolidated findings for Research Question 1, it can be concluded that profitability, serving customers and value adding to customers, as well as the business growth, or footprint expansion and the diversification, were the main elements addressed by the economic dimension of corporate sustainability. The impact of strategies to cover and fulfil the achievement of these elements were predominantly ascertained by measuring the bottom-line, or profitability, of studied firms.

Secondly, elements covered in the social dimension, either in the definition of the informants' understandings or the explanation of focused dimensions, mainly consisted empowering the community of farmers, or the farmers themselves, the importance of people in their organisations and, lastly, job creation. The impact of strategies, as regards these elements, was measured through evaluation of the investment in societies as well as the performance evaluation of the people in the studied firms.

Lastly, adapting to the climate and care for the environment was covered to fulfil environmental sustainability which was measured mainly through various internal and external audits. Furthermore, and while triple bottom-line reporting and the risk management emerged as the approaches to measure the CS strategies' impact, the overarching macro-economic issues that influenced the understanding of CS strategies and the focused dimensions were: the regulatory regime, the land issue in the country and the lack of established local infrastructure. Figure 19 presents a model illustrating a summary of Research Question 1's findings.



- Figure 19: Model of findings' summary for Research Question 1 (Source: Researcher)

7.2.2 Enablers and Inhibitors of the Corporate Sustainability Strategies' Execution

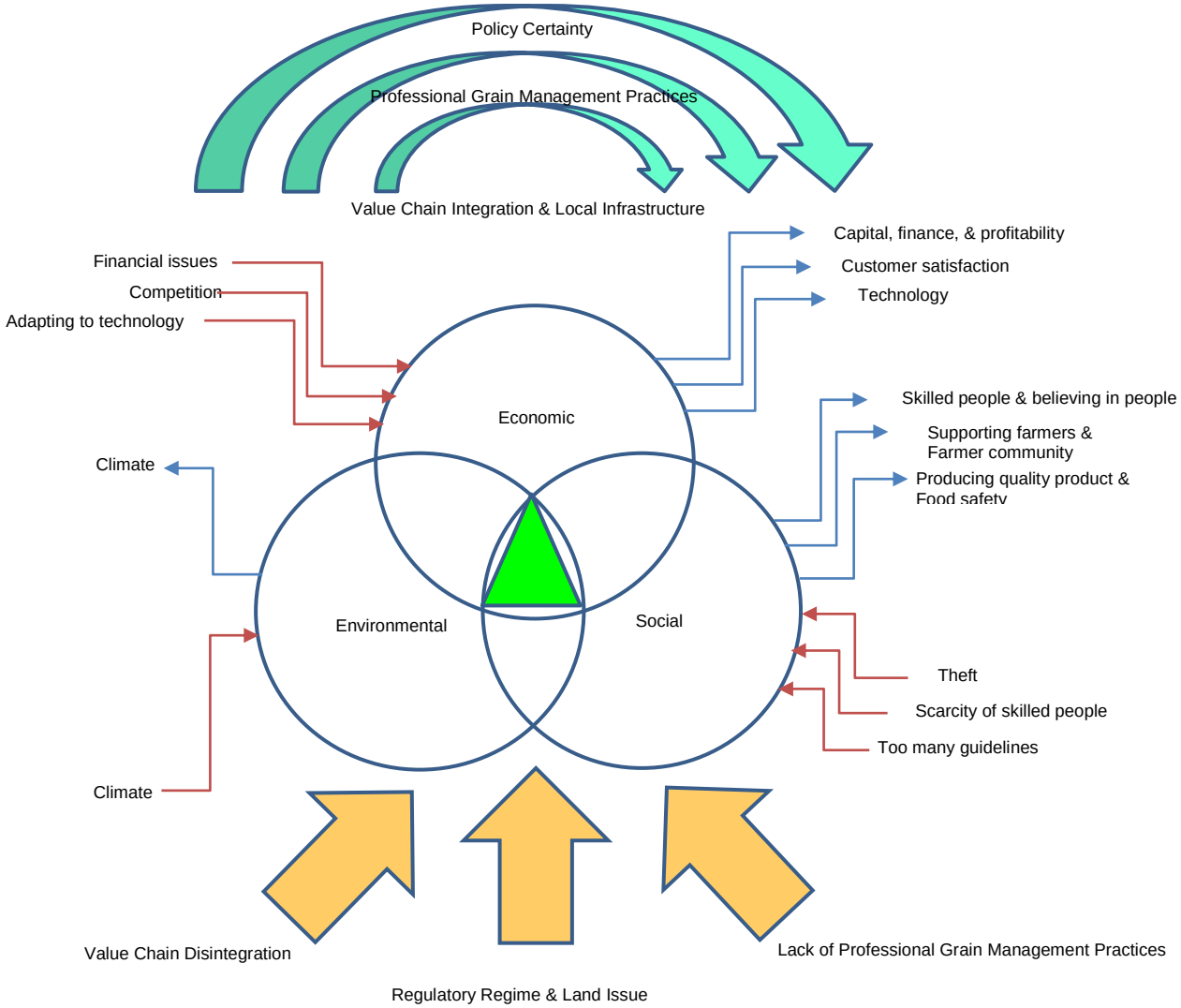
As indicated in Chapter 6, many scholars agreed on the three-dimensional focus of the CS strategies and the importance of the 3Ps (Dyllick & Muff, 2015; Montiel & Delgado-Ceballos, 2014; Aragon-Correa, 2013; Starik, 2013; Bansal, 2005; Szekely & Knirsch's, 2005; Epstein & Roy, 2001; Shirvastava, 1995). There is a lack of clarity regarding how the three dimensions should be balanced. This finding is particularly highlighted in the grain industry as the context of the study. While the majority of CS scholars referred to the stakeholder theory to substantiate the enablers of CS strategies (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Peloza et al., 2012;

Kang, 2013; Dyllick & Muff, 2015), which was supported by the findings for Research Question 2, the rest of the mentioned enablers, or inhibitors, of the CS strategies' execution did not cover the confirmed three-dimensional view.

From the other perspective, whilst scholars stress the importance of balance amongst the 3Ps (Brammer & Millington, 2004; Sharma & Henriques, 2005; Kock, Santaló & Diestre, 2012; Poleza, et al.,2012; Kang, 2013; Dyllick & Muff, 2015), the inhibitors have not been indicated explicitly. However, the findings of this study covered the inhibitors of the CS strategies execution within agri-grain firms although the mentioned inhibitors also did not cover the 3Ps, completely. The interesting finding in studying the inhibitors was 'theft' which was very specific to the context of this research.

Considering the discussion of the findings for Research Question 2, it can be concluded that the main dominant enablers, with regard to economic sustainability included: capital, finance and profitability of the firms, customers' satisfaction and the significance of technology. The inhibitors of the execution of economic strategies were: financial issues, the increase in competition and the adaptability to new technologies. With a similar comprehension, having skilled people, believing in people as well as the importance of leadership and the culture of the firms, supporting farmers and uplifting the community of farmers and producing a quality product considering the food safety were considered the dominant enablers of societal sustainability. Moreover, the inhibitors of the social sustainability strategy execution were theft, scarcity of skilled people and the difficulty of adhering to too many rules and regulations.

Whilst both the *enabler* and the *inhibitor* in the environmental dimension was climate, the overarching enablers with the impact on the 3Ps consisted of: policy certainty, professional grain management practices and the integration of the value chain as well as the established local infrastructure. As a result, the overarching inhibitors were: the regulatory regime, specifically the land issue in the country, followed by the lack of professional grain management practices and the value chain disintegration. Figure 20 presents the model illustrating a summary of finding for Research Question 2.



- Figure 20: Model presenting summary of findings for Research Question 2 (Source: Researcher)

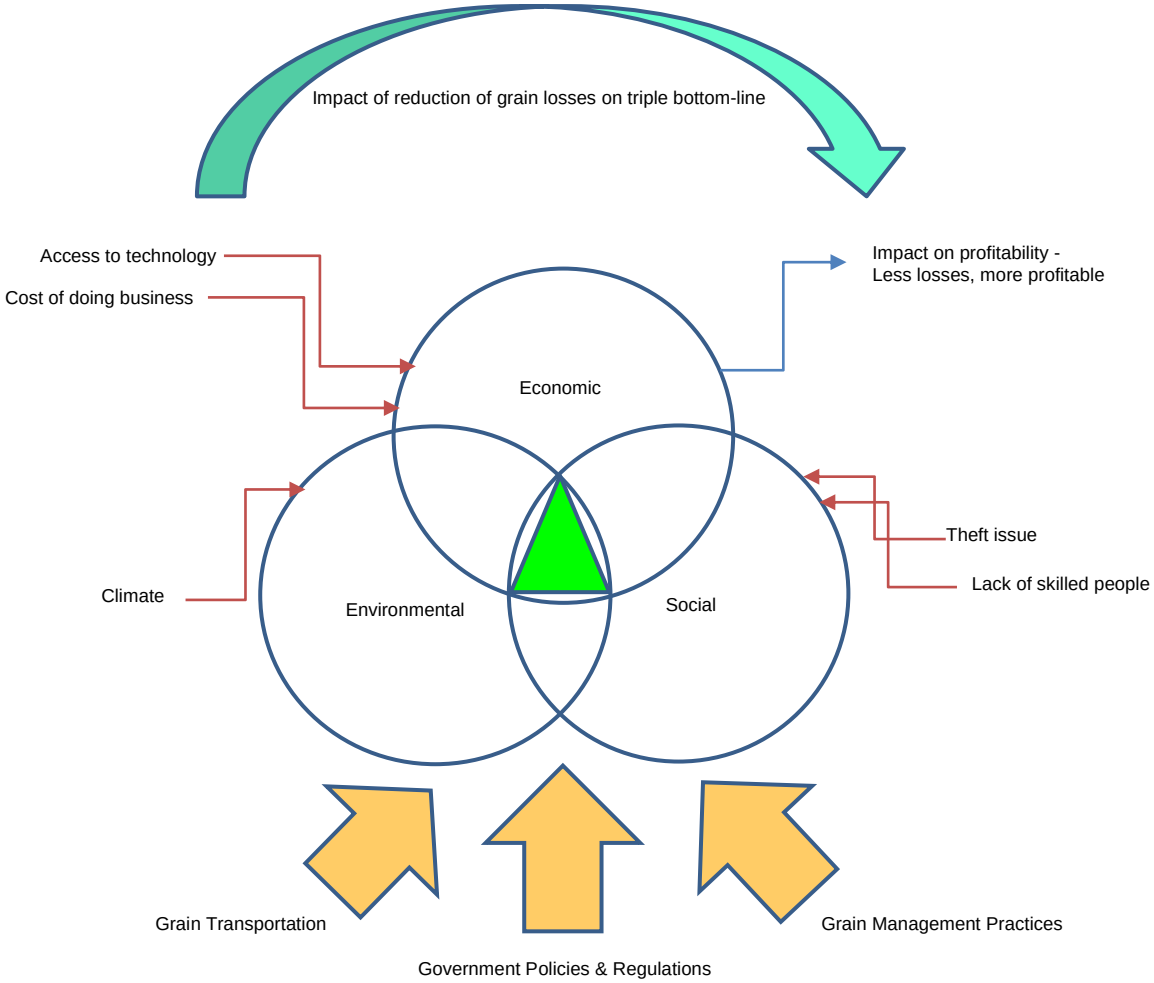
7.2.3 The Impact of Reducing Grain Losses on the Sustainability of the Grain Industry

The findings of Research Question 3 will be summarised in two sections to provide a clear idea of, firstly, the impact of reducing post-harvest grain losses on sustainability and the challenges involved with that process and, secondly, the comparison with the impact of other enablers. Whilst most scholars confirm the positive impact of reducing post-harvest grain losses on the sustainability of agribusiness sectors (Kumar & Kalita; 2016, Olukunle, 2017; Banson, et al., 2014; Lipinski, et. al., 2013), the findings of this study demonstrated various results from supporting literature fully to having no impact, which refuted the

literature. Similarly, the finding for the challenge of reducing grain losses varied in various studied sectors. However, the dominant challenge fully supported the literature as regards the importance of grain management practices (Cook & Chaddad, 2000; King et al., 2010; Banson et al., 2014; Olukunle, 2017; Kumar & Kalita, 2016).

All in all, it can be concluded that the most dominant impact of reducing post-harvest grain losses was the impact on the profitability of the studied firms while the most overarching impact was the influence on the triple bottom-line of the grain industry which supported the proposition of this study. The most dominant challenges, with regards to the reduction of post-harvest grain losses were: the issue of theft and the lack of skilled people on the social side, as well as the climate on the environmental side.

Moreover, the challenges on the economic side were mainly the cost of doing business and the access to technologies. Lastly, the overarching challenges for reducing post-harvest grain losses were: government policies and regulations, lack of professional grain management practices and, lastly, difficulties with regards to grain transportation. Figure 20 presents the model which illustrates a summary of the findings for the impact of reducing post-harvest grain losses and the challenges. Figure 21 illustrates a model presenting the summary of findings regarding the impact of grain losses and the challenges to reducing post-harvest grain losses.

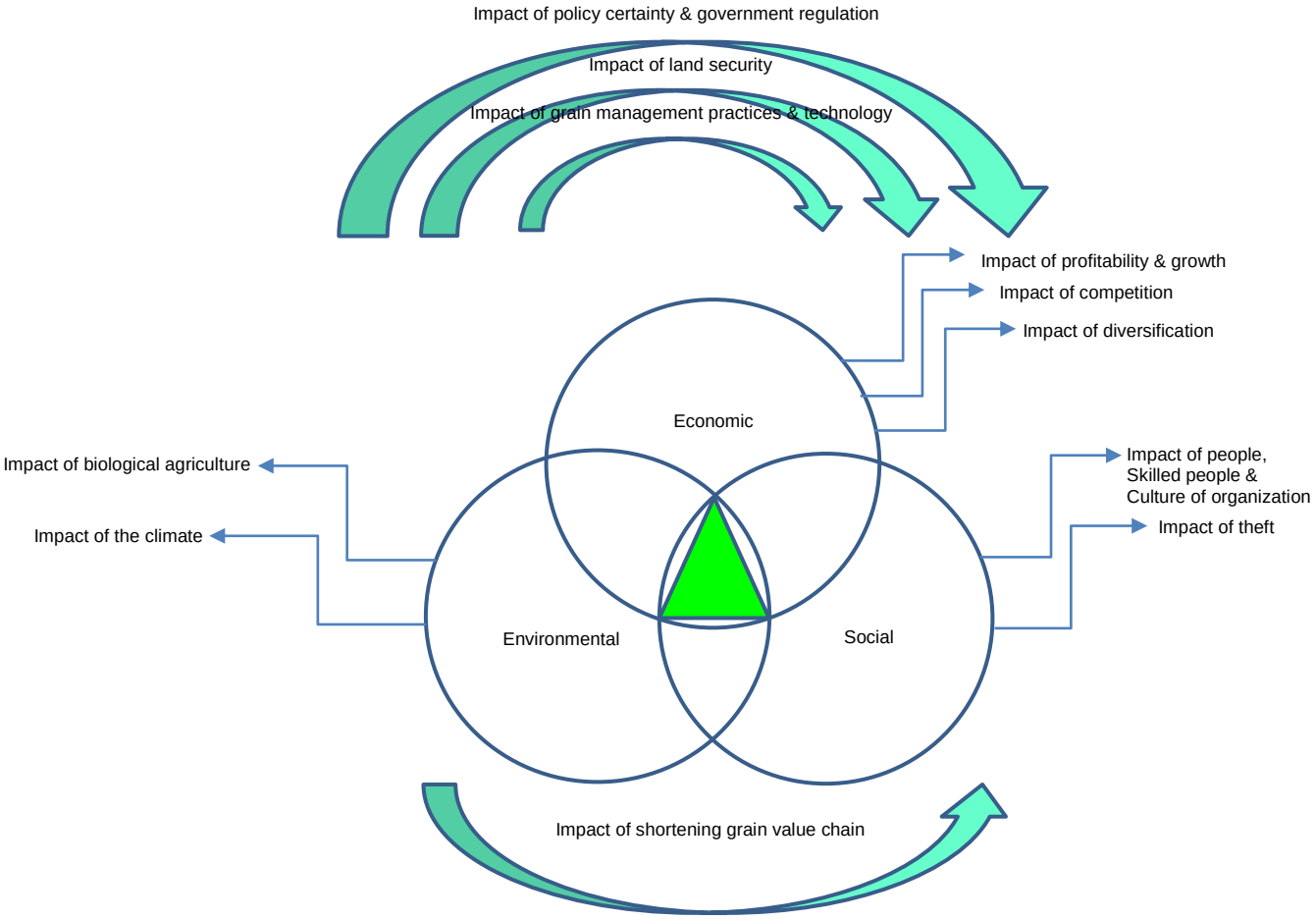


- Figure 21: Model presenting summary of findings regarding the impact of grain losses and the challenges to reducing post-harvest grain losses
(Source: Researcher)

The findings of the study, with regard to the comparison between the impact of reducing post-harvest grain losses on the sustainability of agri-grain firms as well as the grain industry with other enablers, answered the Research Question 3 of this study. The results confirmed the less losses, more profitable and less losses, more sustainable. It also demonstrated a clear dominance over the other enablers in the South African grain industry context comparatively. This notion became explicit when informants expressed their concerns regarding the land issue in the country, mentioning that if there is no land, and no agricultural production, how the sustainability of the value chain could be looked after. Their concerns also supported scholars (Pingali, 2015; Fafchamps, 2009; Dercon, 2002) who supported the importance of property rights.

In some interviews, the researcher found it difficult to justify why the reduction of post-harvest grain losses was chosen as the proposition to support the implementation of sustainability strategies in the grain industry since some informants were much more concerned about the macro-economic issues in the country. The significance of the theft and crime in the grain industry was another prohibiting reason and, in many instances, it was mentioned as the main source of grain losses in the country. The emergence of technology as an important enabler to reduce post-harvest grain losses was also supported by scholars (King et al., 2010; Lipinski et al., 2013; Pingali, 2015; Kumar & Kalita, 2016). This manifested one of the important challenges regarding the reduction of post-harvest grain losses in the country. However, it was not one of the top strategies.

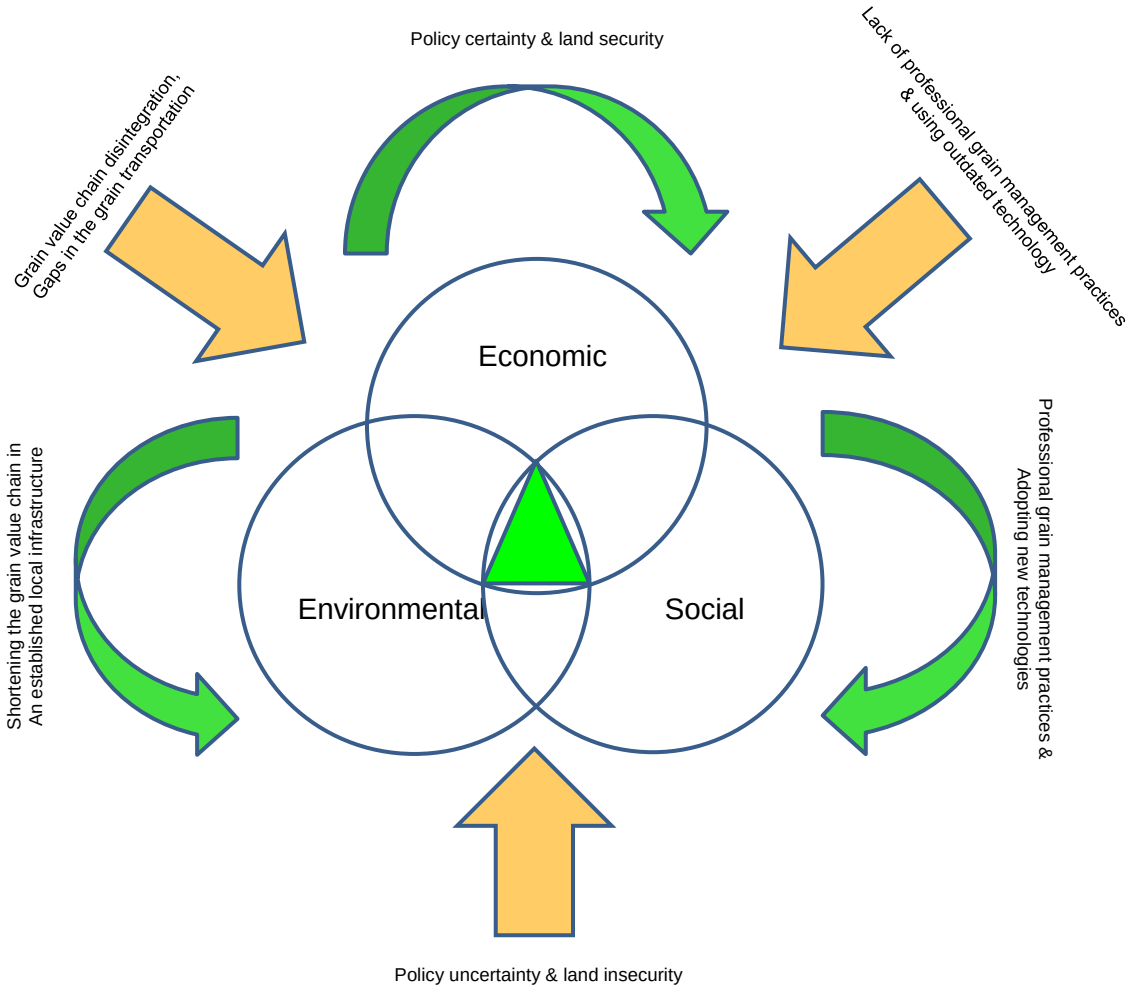
All in all, it can be concluded that the impact of profitability and market growth, as well as competition and diversification, were more important than the reduction of grain losses under economic sustainability. Whilst the impact of skilled people and the culture of the organisation as well as theft with regards to the social dimension, was more significant, the impact of the climate and biological agricultural were considered more important under the environmental dimension compared to the reduction of post-harvest grain losses. Moreover, the overarching impacts consisted of: government regulation and policy certainty, land security, grain management practices and technology and, lastly, the impact of the shortening the grain value chain appraised as being more important comparatively. Figure 22 presents a model to summarize the findings for the impact of other enablers and the comparison with the impact of reducing post-harvest grain losses.



- Figure 22: Model presenting summary of findings for the impact of other enablers and the comparison with the impact of reducing post-harvest grain losses (Source: Researcher)

7.3 CONTRIBUTION TO A MEANINGFUL SUSTAINABILITY MODEL FOR THE GRAIN INDUSTRY

This section proposes a model to contribute to the development of a meaningful system for sustainability in the grain industry. The competitive advantage of the corporate sustainability strategies is proposed as the intersection of the three-dimensional model which ensures benefits for people, profit and the planet. The model proposes that if corporate sustainability strategies find a balanced positioning to facilitate the interplay between the three dimensions in the grain industry, profitability will be boosted, social equity will be achieved and environmental sustainability will be ensured. Figure 23 illustrates the proposed model for sustainability in the grain industry.



- Figure 23: The proposed model for sustainability in the grain industry (Source: Researcher)

The sustainability model for the grain industry has been developed in consideration of the findings of the study and the researcher's proposal as to the overarching enablers and inhibitors of the implementation of the corporate sustainability strategies within the studied context. The overarching enablers and inhibitors impact the balance of the sustainability dimensions, or the core competence of the CS strategies, which has been demonstrated as a green triangular in the centre of the model. Therefore, the balance attained at the intersection of the dimensions is the main driver of sustainability within the industry which is assumed to be positively interrelated to the reduction of post-harvest grain losses and other enablers.

Consequently, the three dominant enablers of sustainability in the grain industry, within the studied context, demonstrated as green arrows consisted of policy certainty and land

security, professional grain management practices and adopting new technologies, and lastly, the integration of the grain value chain in an established local infrastructure. In contrary, the dominant inhibitors are depicted by grey arrows which illustrate forces, include policy uncertainty and land insecurity, lack of professional grain management practices and using outdates technologies. In addition, the disintegration of the grain value chain, which causes gaps and issues, such as theft in the grain transportation, is also depicted in this way.

7.4 RECOMMENDATIONS FOR STAKEHOLDERS

It is recommended that managers and practitioners in the grain industry, as well as all the other stakeholders including policy makers and the relevant NGOs, utilise the proposed sustainability model for the grain industry in their strategic decision making and sustainability strategy developments. As a result of this study, the following recommendations have been incorporated for managers, practitioners and policy makers involved in the grain industry, either strategically, or practically. It is suggested that following these recommendations by agri-grain business managers, practitioners and policy makers in the grain industry will reduce post-harvest grain losses in the country and thus contribute to food safety.

7.4.1 Recommendations to Business Managers in Agri-grain firms

In order to ensure the sustainability of agri-grain firms as part of the grain industry, it is recommended that managers should ensure:

- consideration of the three dimensions of sustainability including: economic, societal and environmental in their strategic decision making within their corporates.
- utilisation of sustainability measurement tools to measure the impact of their strategies on each dimension.
- balanced position of the three dimensions in the implementation of their strategies.
- increased integration of the grain value chain by closing the loop and the diversification.
- establishment of a culture in their organisation that ensures the significance of leadership, responsible relationship with communities and care for the environment.

7.4.2 Recommendations to Agri-grain Practitioners

It is recommended that in order to contribute to the sustainability of the grain industry, agri-grain practitioners should:

- consider people, profit and the planet when executing the strategies in the grain practices, including utilisation of the local resources.
- adopt new technologies or the regular maintenance of the outdated technologies as well as acquiring the skilled human resources to implement the strategies in the grain management.
- ensure minimum post-harvest grain losses while executing the strategies to address serving their customer in a more responsible manner with the care for communities and the environment to contribute to the sustainability of the grain industry.
- ensure producing quality products by adhering to food safety and traceability regulations.

7.4.3 Recommendations to Policy Makers

In order to contribute to the sustainability of the grain industry, grain industry policy makers should ensure:

- certainty of the grain regulation and the security of the land, or property rights.
- an established local infrastructure, including access to water, electricity and roads, or rail.
- safety rules and regulation to protect the grain industry sectors from theft and crimes.
- establishment of rules that facilitate the integration of the grain value chain and close the supply chain loops.
- to facilitate access to new technologies by private sectors and local communities to contribute to the sustainability of the grain industry.
- establishment of simplified rules and policies regarding food safety and the care for the environment to contribute to the sustainability of the grain industry.

7.5 RESEARCH LIMITATIONS

The limitations of this research are presented as three main limitations namely: the researcher's limitations, sampling limitations and overall study limitations.

7.5.1 Researcher's limitations

As indicated by Creswell (2013), an exploratory research is subjective in nature and it might thus be influenced by the researcher's biases, or perspectives and how the findings are interpreted by the researcher. Choy (2014), explained further that the researcher's interpretations are limited and hence the gathered date might not be objectively justified. In other words, with the qualitative research being highly dependent on the researcher's skills, the interpretations might be subject to the researcher's biases. In addition, Golafshani (2003), emphasised the role of the researcher to record and present the events, before and after they happen.

Therefore, the efforts of the researcher could impact on the credibility of the study, specifically because validity and reliability are not separate topics. Due to the extensive volume data that should be recorded, transcribed, coded, categorised and analysed, qualitative research is a time-consuming and a labour-intensive process which makes it prone to errors or unconscious biases by the researcher who might overlook a certain topic specifically because the researcher is not an expert interviewer (Agee, 2009).

7.5.2 Sampling limitations

This study was limited to the selected sectors of agri-grain firms who were mainly situated at the upstream side of the value chain, thus between farms and processing plants, and hence included: grain handling, grain storage, grain trading and logistics, grain processing or grain milling, seed processing and also grain related non-profit organisations only in South Africa. The intention was to include the sectors that are involved with post-harvest grain losses, as per the purpose of this study, which in fact limits the generalisability of the results. The sample size was relatively small to be the representative of the population. Furthermore, the selected sample only included strategic managers and other levels in the company were thus not involved. Therefore, the sample size was relatively small to be considered as the representative of the population.

As indicated by Saunders and Lewis (2012), informant's biases in the interpretation of their firms' strategies and approaches could also impact the results of the study. In addition, the confidentiality constraints could also present an obstacle to presenting the results and thus they can be considered a research limitation. Although a limited sample size was chosen for the purpose of the study, met the explorative research standards, the findings, as a

result, cannot be generalised to other sectors or even the chosen sectors within the grain value chain, other geographical contexts, or other industries. Since the use of purposive non-probability sampling does not represent the population entirely, it could limit the extent to which the conclusions were made on the sample generalisation to the entire population, or to other contexts (Creswell, 2009).

In addition, although this study tried to involve various agri-grain firms from various geographic locations, meaning the seven provinces, the size of the sample taken from each province was not equal, and as indicated, findings from the downstream sectors of the grain value chain (meaning food processing, packaging, and retail) might be different. Moreover, adopting purposive sampling resulted in the selection of executive and top managers from specific sectors who might be influenced by similar experiences in their fields. Thus the reasoning that the responses from the similar sectors are alike.

7.5.3 Study limitations

Since the data gathering process required the researcher to travel across the country and the entire data was collected over a period of one month, not all provinces in the country and not all sectors in each province, could be covered within the time frame of this study. All in all, and since the qualitative research findings can be influenced by various biases (Zikmund et al., 2013), the generalisability of findings is often not possible. In addition, qualitative research is labour-intensive because of the extensive volume of data that should be managed and thus it is prone to errors and unconscious biases.

7.6 RECOMMENDATIONS FOR FUTURE RESEARCH

Considering the limited studies with regards to the impact of enablers and inhibitors on the corporate sustainability of agri-grain firms, and hence the sustainability of the grain industry, the following recommendations for the future research will be influential on the existing literature and will add value to future researches.

- Since the definition of corporate sustainability in agribusinesses, and particularly in the grain sectors which largely provides the staple food in the most countries, is significantly under researched, more researches on the sustainability of these fields will be helpful and of importance.

- Since there is a lack of understanding regarding the focus areas, and the explicit elements of each dimension of sustainability in the grain industry, more researches would have a significant impact on establishing the understanding of sustainability within agribusiness firms.
- There is an immense need to establish a tool, within agribusiness and agricultural firms, to measure the sustainability of their firms and the industry. Future researches are recommended in which a collaboration with policy makers could lead to the establishment of an agricultural sustainability measurement tool.
- Since this study was limited to the grain industry, and specific sectors to target post-harvest grain losses, sustainability in the other sectors, and their relevance to other agricultural commodities, are areas which require further research.
- Inhibitors and enablers of sustainability strategies with agribusiness firms in other agricultural and geographical contexts are almost an unexplored area. Further researches are recommended to inform strategic decision makers, policymakers and the academia in his field.
- A quantitative study should be conducted to quantify the amount of post-harvest grain losses beyond the studied agri-grain firms, thus involving more firms from each province in the country to explore the relationship with the sustainability of those firms.
- A qualitative, or quantitative, study should be conducted to explore the interplay between the various sustainability enablers and the strategic advantage of firms resulting from balancing the three dimensions.
- A qualitative, or quantitative, study should be conducted to explore the interplay between the various sustainability inhibitors and the strategic advantage of firms as a result of the balancing the three dimensions.
- An in-depth study, wider scoped study, should be conducted to establish a method to balance the three-dimensional sustainability approach within the grain industry sectors.
- This study used post-harvest grain losses as an enabler to the sustainability of agri-grain firms, as part of Research Question 3, to explore the other enablers, inhibitors and the focus areas of the CS strategies. Other propositions are recommended to further explore the enablers and inhibitors of agribusiness corporate sustainability within other sectors, or other contexts, to develop the proposed model.
- Lastly, the proposed model of sustainability for the grain industry could be further validated quantitatively within firms, or corporates, who are pursuing the sustainability as their main strategy.

7.7 CONCLUSION

This study intended to address and help close the gap in the existing literature regarding corporate sustainability within agri-grain firms whilst also contributing to the reduction of post-harvest grain losses in support of the Sustainable Development Goal of the Zero Hunger, worldwide. Although the literature emphasises that sustainability is a core competence of the strategies, there is a significant ambiguity in the understanding of corporate sustainability, the development of strategies and the establishment of measurement tools that ensure the sustainability within agribusiness firms. The study used post-harvest grain losses to explore the focus dimensions of the studied firms, the other enablers and the inhibitors and, in addition, the challenges that the firms are facing to reduce their grain losses. The findings that emerged as a result of interviews with 26 top business managers of agri-grain firms resulted in the development of a model to support the sustainability of the grain industry.

This research contributes to literature through an empirical study that clarifies the elements under each dimension of the corporate sustainability explicitly and provides key insights into the various enablers and inhibitors that drive sustainability within agri-grain firms. Moreover, the interplay between the reduction of post-harvest grain losses and the strategies of the studied firms are demonstrated which helped in the clarification of overarching enablers and inhibitors comparatively, in the studied industry. In the end, it is hoped that the proposed model will further contribute to sustainability management and development by the involved business leaders, managers and the stakeholders as they pursue the sustainability of their corporates and the grain industry.

REFERENCES

Agee, J. (2009). Developing qualitative research questions: a reflective process. *International Journal of Qualitative Studies in Education, 22(4),* 431 – 447. Retrieved from https://doi.org/10.1080/09518390902736512

Aragon-Correa, J. A. (1998). Strategic proactivity and firm approach to the natural environment. *Academy of Journal Management, 41(5),* 558 – 567. Retrieved from https://doi.org/10.5465/256942

Banerjee, S. B. (2003). Who sustains whose development? Sustainable development and the reinvention of nature. *Organization Studies, 24,* 143 – 180. Retrieved from https://doi.org/10.1177/0170840603024001341

Bansal, P., & Gao, J. (2006). Building the future by looking to the past: Examining research published on organisations and environment. *Organisation & Environment, 19,* 458 – 478. doi: 10.1177/1086026606294957.

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal, 26(3),* 197-218. doi: 10.1002/smj.441.

Bansal, P. (2002). The corporate challenges of sustainable development. *Academy of Management Executive, 16(2),* 122 – 131. Retrieved from https://doi.org/10.5465/ame.2002.7173572

Banson, K. E., Nguyen, N.C, Bosch O.J. H., & Nguyen, T. V. (2014). A system thinking approach to address the complexity of agribusiness for sustainable development in Africa: A case study in Ghana. *System Research and Behavioural Science, 32,* 672 – 688. doi: 10.1002/sres.2270.

Beckmann, M., Hielscher, S., & Pies, I. (2014). Commitment strategies for sustainability: How business firms can transform trade-offs into win-win outcomes. *Business Strategy and the Environment, 23,* 18 – 37. doi: 10.1002/bse.1758.

Bloomberg, L. D., & Volpe, M. (2012). *Completing your qualitative dissertation: A road map from beginning to end.* Los Angeles: SAGE.

Boehlje, M., Roucan-Kane, M., & Bröring, S. (2011) Future agribusiness challenges: Strategic uncertainty, innovation, and structural change. *International Food and Agribusiness Management Review, 14(5),* 53-84. Retrieved from https://library.wur.nl/WebQuery/wurpubs/fulltext/194716

Brammer, S., & Millington, A. (2004). The development of corporate charitable contributions in the UK: A stakeholder analysis. *Journal of Management Studies, 41(8),* 1411- 1434. Retrieved from https://doi.org/10.1111/j.1467-6486.2004.00480.x

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research In Psychology*, 3 (2), 77-101. Retrieved from http://dx.doi.org/10.1191/1478088706qp063oa

Cassell, C., & Symon, G. (2001). Assessing 'good' qualitative research in the work psychology field: a narrative analysis. *Journal of Occupational and Organizational Psychology, 84(4),* 633-650. Retrieved from https://doi.org/10.1111/j.2044-8325.2011.02009.x

Chang, R., Zuo, J., Zhao, Zh. Zillante, G., Gan, X., Soebarto, V. (2017). Evolving theories of sustainability and firms: History, future directions and implications for renewable energy research. *Renewable and Sustainable Energy Reviews, 72,* 48-56. Retrieved from https://doi.org/10.1016/j.rser.2017.01.029

Choy, L. T. (2014). The Strengths and weaknesses of research methodology: Comparison and complimentary between qualitative and quantitative approaches. *Journal of Humanities and Social Science, 19(4),* 99-104.

Cochran, W.G. (2007). *Sampling techniques.* New Delhi: John Wiley & Sons.

Cook, M. L., Chaddad, F. R. (2000). Agro industrialization of the global agri-food economy: bridging development economics and agribusiness research. *Agricultural Economics, 23,* 207-218. Retrieved from https://doi.org/10.1111/j.1574-0862.2000.tb00273.x

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd Ed.). London: Sage.

Creswell, J.W. (2009). *Research Design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage.

Creswell, J.W., Hanson, W. E., Plano Clark, V. L., & Morales, A. (2007). Qualitative research design: Selection and implementation. *The Counselling Psychologist, 35(2),* 236-264. Retrieved from https://doi.org/10.1177/0011000006287390

Creswell, J.W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory Into Practice, 39(3),* 124 – 130. Retrieved from https://doi.org/10.1207/s15430421tip3903_2

Davis, J. H. (1956). From agriculture to agribusiness. *Harvard Business Review, 34,* 107-115.

Davis, J. H., & Goldberg, R. A. (1957). *A concept of agribusiness.* Boston: Division of Research, Graduate School of Business Administration, Harvard University.

Delgado-Ceballos, J., Montiel, J., & Antolin – Lopez, R. (2014). What falls under the corporate sustainability umbrella? Definitions and measures. *Sustainability & Sustainable Development, 25,* 226 – 237. doi: 10.5840/iabsproc20142525.

Delmas, M., Etzion, D., & Nairn-Birch, N. (2013). Triangulating environmental performance: What do corporate social responsibility ratings really capture? *Academy of Management Perspectives, 12,* 255 – 267. Retrieved from https://doi.org/10.5465/amp.2012.0123

Delams, M., & Montes-Sancho, M. J. (2011). An institutional perspective on the diffusion of international management system standards: The case of the environmental management standard ISO 14001. *Business Ethics Quarterly, 21,* 103 – 132. Retrieved from https://doi.org/10.5840/beq20112115

Dercon. S. (2002) Income risk, coping strategies and safety nets. World Bank Research Observer, 17(2), 141 – 166.

Donaldson, L., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review, 20(1),* 65 – 91. Retrieved from https://doi.org/10.5465/amr.1995.9503271992

Dyllick, T., & Muff, K. (2015). Clarifying the meaning of sustainable business: Introducing a typology from business-as-usual to true business sustainability. *Organization & Environment,* 1 –19. doi: 10.1177/1086026615575176.

Elkington, J. (1998). Partnerships from cannibals with forks: the triple bottom line of 21st. century. *Environmental Quality Management.* 37-51. Retrieved from https://doi.org/10.1002/tqem.3310080106

Epstein, M. J., & Roy, M. J., (2001). Sustainability in action: identifying and measuring the key performance drivers. *Long Range Planning, 34(5),* 585 – 604.

Etzion, D. (2007). Research on organisations and the natural environment, 1992-present: A review. *Journal of Management, 33,* 637 – 644. Retrieved from https://doi.org/10.1177/0149206307302553

Fafchamps. M. (2009). B vulnerability, risk management, and agricultural development. *Agricultural for development.* Paper no. Afd-0904. Berkeley: Centre for Evaluation for Global Action, University of California.

Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. (2002). The sustainability balanced scorecard - Linking sustainability management to business strategy. *Business Strategy and the Environment, 11,* 269–284. doi: 10.1002/bse.339.

Figge, F., Hahn, T., Schaltegger, S., & Wagner, M. (2001b). The sustainability balanced scorecard – a tool for value-oriented sustainability management in strategy-focused organisations. *Conference Proceedings of the 2001 Eco-Management and Auditing Conference.* ERP Environment: Shipley; 83 – 90.

Frater, P., & Franks, J. (2013). Measuring agricultural sustainability at the farm-level: A pragmatic approach. *International Journal of Agricultural Management, 4(2),* 207-225. Retrieved from https://doi.org/10.5836/ijam/2013-04-04

Freeman, R. E. (1984). *Strategic management: A stakeholder approach.* Boston, MA: Pitman.

Freeman, R. E., Harrison, J.S., Wicks, A. C., Parmar, B. L., & de Colle, S. (2010). *Stakeholder theory: The state of the art.* New York, NY: Cambridge University Press.

Friedrich, N., Heyder, M., & Theuvsen, L. (2012). Sustainability management in agribusiness: Challenges, concepts, responsibilities and performance. *International Journal on Food System Dynamics, 3(2),* 123 – 135. Retrieved from https://doi.org/10.18461/ijfsd.v3i2.323

Garriga, E., & Melé, D. (2004). Corporate social responsibility theories: mapping the territory. *Business Ethics, 53 (1/2),* 51-71. Retrieved from https://link.springer.com/article/10.1023/B:BUSI.0000039399.90587.34

Garvare, R., & Johansson, P. (2010). Management for sustainability: a stakeholder theory. *Total Quality Management & Business Excellence, 21,* 737-744. Retrieved from https://doi.org/10.1080/14783363.2010.483095

Ge, H., Gray, R., & Nolan, J. (2014). Agricultural supply chain optimization and complexity: Agricultural supply chain optimization and complexity: A comparison of analytics vs simulated solutions and policies. *International Journal Production Economics, 159,* 208–220. Retrieved from https://doi.org/10.1016/j.ijpe.2014.09.023

Gladwin, T.N., Kennelly, J.J., & Krause, T.S. (1995). Shifting paradigms for sustainable development: Implications for management theory and research: *Academy of Management Review, 20,* 874 – 907. Retrieved from https://doi.org/10.5465/amr.1995.9512280024

GOAL2 TARGETS. (2018) Retrieved from http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-2-zero-hunger/targets/

GOAL2: ZERO HUNGER. (2018). Retrieved from http://www.undp.org/content/undp/en/home/sustainable-development-goals/goal-2-zero-hunger.html

Golafshani, N. (2003) Understanding reliability and validity in qualitative research. *The Qualitative Report, 8(4),* 597-607. Retrieved from https://nsuworks.nova.edu/tqr/vol8/iss4/6

Hall, J., & Vredenburg, H. (2003). The challenge of innovating for sustainable development. *MIT Sloan Management Review, 45 (1),* 61 – 68.

Hammer, J., & Pivo, G. (2016). The triple bottom line and sustainable economic development theory and practice. *Economic Development Quarterly.* 1- 12. doi: 10.1177/0891242416674808.

Harrison, J., & Freeman, R.E. (1999). Stakeholders, social responsibility, and performance: Empirical evidence and theoretical perspectives. *Academy of Management Journal, 42(5),* 479 – 485. Retrieved from https://doi.org/10.5465/256971

Hart, S., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management, 37(5),* 1464 – 1479. doi: 10.1177/0149206310390219.

Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Executive, 17(2),* 56 – 67. Retrieved from https://doi.org/10.5465/ame.2003.10025194

Hoffman, A., & Georg, S. (2012). A history of research on business and the natural environment: Conversations from the field. *Ross School of Business Working Paper, 1158,* 1 – 70. Retrieved from https://deepblue.lib.umich.edu/bitstream/handle/2027.42/90852/1174_Hoffman.pdf?sequence=1&isAllowed=y

Holsti, O.R. (1969). *Content analysis for the social sciences and humanities.* Reading, MA: Addison – Wesley.

Hörisch, J., Freeman, R. E., & Schaltegger, S. (2014). Applying stakeholder theory in sustainability management: links, similarities, dissimilarities, and a conceptual framework. *Organization & Environment, 27(4),* 328 – 346. doi: 10.1177/1086026614535786.

Hsieh. H. F., & Shannon. S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15(9),* 1277 – 1288. doi:10.1177/1049732305276687.

Hubbard, G. (2009). Measuring organizational performance: Beyond the triple bottom line. *Business Strategy and the Environment, 19,* 177-191. doi: 10.1002/bse.564.

Jayachandrand, S., Kalaignanam, K., & Eilert, M. (2013). Product and environmental social

performance: Varying effect on firm performance. *Strategic Management Journal, 34,* 1255 – 1264. Retrieved from https://doi.org/10.1002/smj.2054

Jeurissen, R. (2000). Cannibals with forks: The triple bottom line of 21st century business. *Journal of Business Ethics, 23,* 229 – 231. Retrieved from https://doi.org/10.1023/A:1006129603978

Kang, J. (2013). The relationship between corporate diversification and corporate social performance. *Strategic Management Journal, 34,* 94 – 109. Retrieved from https://doi.org/10.1002/smj.2005

King, R. P., Boehlje, M., Cook, M. L., & Sonka, S. S. (2010). Agribusiness economics and management. *American Journal of Agricultural Economics, 92(2),* 554–570. doi:10.1093/ajae/aaq009.

Kock, C. J., Santalo, J., & Diestre, L. (2012). Corporate governance and environment: What type of governance creates greener companies. *Journal of Management Studies, 49,* 492 – 514. Retrieved from https://doi.org/10.1111/j.1467-6486.2010.00993.x

Kumar, D., & Kalita, P. (2016). Reducing post-harvest losses during storage of grain crops to strengthen food security in developing countries. *Foods, 6 (1),* 1-22. *doi: 10.3390/foods6010008.*

Kvale, S. (2007). *Doing Interviews.* Thousand Oaks, CA: Sage.

Lipinski, B., Hanson, C., Lomax, J., Kitinoja, L., Waite, R., & Searchinger, T. (2013). *Reducing food losses and waste.* Washington DC. World Resource Institute. Retrieved from http://science.sciencemag.org/content/327/5967/812

Lloret, A. (2016) Modelling corporate sustainability strategy. *Journal of Business Strategy, 65,* 418-425. Retrieved from http://dx.doi.org/10.1016/j.jbusres.2015.06.047 0

Lyman, A. (2008). *Creating trust: It's worth the effort a great place to work.* San Francisco, CA: Great Place to Work Institute Inc., 18.

Malterud, K. (2001). Qualitative research: standards, challenges, and guideline.

Qualitative Research Series, 358, 483-488. Retrieved from https://doi.org/10.1016/S0140-6736(01)05627-6

Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quarterly, 48,* 268 – 305. Retrieved from http://journals.sagepub.com/doi/abs/10.2307/3556659

Markevich, A. (2009). The evolution of sustainability. *MIT Sloan Management Review, 51(1),* 13 – 14.

Marshall, R. S., & Brown, D. (2003). The strategy of sustainability: A systems perspective on environmental initiatives. *California Management Review, 46(1),* 101 – 126. Retrieved from https://doi.org/10.2307/41166234

Maxwell, J.A. (2010). Using numbers in qualitative research. *Qualitative Inquiry, 16(6),* 475 – 482. doi: 10.1177/1077800410364740.

Mc Williams, A., Parhankangas, A., Coupet, J., Welch, E., & Barnum, D.T. (2014). Strategic decision making for the triple bottom line. *Business Strategy and the Environment,* 1-12. doi: 10.1002/ bse.1867.

Mc Williams, A. & Siegel, D. (2011). Creating and capturing value: Corporate social responsibility, resource-based theory, and sustainable competitive advantage. *Journal of Management, 37,* 1480 – 1495. Retrieved from https://doi.org/10.1177/0149206310385696

Montiel, I. & Delgado-Ceballos, J. (2014). Defining and measuring corporate sustainability: are we there yet? *Organization & Environment,* 1-27. doi: 10.1177/1086026614526413.

Network for Business Sustainability. (2012). *Definition of business sustainability.* Retrieved from http://nBST.net/about/what-we-do/

Neubaum, D. O., & Zahra, S. A. (2006). Institutional ownership and corporate social performance: The moderating effects of investment horizon, activism, and coordination. *Journal of Management, 32,* 108 – 131.doi: 10.1177/0149206305277797.

Olukunle, O. T. (2017). Determinants of post-harvest losses in Nigeria. *International Journal of Current Research, 12(9),* 63533-63540.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta – analysis. *Organization Studies, 24(3),* 403 – 411. Retrieved from https://doi.org/10.1177/0170840603024003910

Ozanne, K. L., Phipps, M., Weaver, T., Carrington, M., Luchs, M., Catlin, J., Gupta, Sh., Santos, N., Scott, K., & Williams, J. (2016). Managing the tensions at the intersection of the triple bottom line: A paradox theory approach to sustainability management. *Journal of Public Policy and Marketing, 35 (2),* 249–261. doi: 10.1509/jppm.15.143.

Peloza, J., Loock, M., Cerruti, J., & Muyot, M. (2012). Sustainability: How stakeholder perceptions differ from corporate reality. *California Management Review, 55(1),* 74 –97. Retrieved from https://doi.org/10.1525/cmr.2012.55.1.74

Peng, M. W., Sun, S. L., Pinkham, B., & Chen, H. (2009). The institution-based view as a third leg for a strategy tripod. *Academy of Management Perspectives, 23(3),* 63 – 81. Retrieved from https://doi.org/10.5465/amp.2009.43479264

Pfeffer, J. (2010). Building sustainable organizations: The human factor. *Academy of Management Perspective, 24(1),* 34 – 45. Retrieved from https://doi.org/10.5465/amp.24.1.34

Phillips, R. A., Freeman, R. E., & Wicks, A. C. (2003). What stakeholder theory is not. *Business Ethics Quarterly, 13(4),* 479 – 502. Retrieved from https://doi.org/10.5840/beq200313434

Pingali, P. (2015). Agricultural policy and nutrition outcomes – getting beyond the preoccupation with staple grain. *Food Security,7,* 583 – 591. doi: 10.1007/s12571-015 0461-x.

Pogutz, S., & I. Winn, M. (2016). Cultivating ecological knowledge for corporate sustainability: Barilla's innovative approach to sustainable farming. *Business Strategy and the Environment*, *25*, 435–448. doi: 10.1002/bse.1916.

Ponterotto, J. G. (2005). Qualitative research in counselling psychology: A primer on

Research paradigms and philosophy of science. *Journal of Counselling Psychology, 52(2),* 126–136. doi: 10.1037/0022-0167.52.2.126.

Porter, M. E. (1996). What is strategy? *Harvard Business Review.*

Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review.* 1- 17.

Reineeke, J., Manning, S., & von Hagen, O. (2012). The emergence of a standard market: Multiplicity of sustainability standards in the global coffee industry. *Organization Studies, 33,* 791 – 814. Retrieved from https://doi.org/10.1177/0170840612443629

Salzmann, O., Ionescu-somers, A., & Steger, U. (2004). The business case for corporate sustainability: Literature review and research options. *European Management Journal, 23(1),* 27 – 36. doi: 10.1016/j.emj.2004.12.007.

Saunders, M., & Lewis, P. (2012). Doing research in business & management. England: Pearson.

Schaltegger, S., & Wagner, M. (2011). Sustainable entrepreneurship and sustainability innovation: Categories and interaction. *Business Strategy and the Environment, 20,* 222- 237. doi:10.1002/bse.682.

Sebastiani, R., Gorsaro, D., Montagnini, F., & Caruana, A. (2014). Corporate sustainability in action. *Service Industries Journal*, *34(7),* 584–603. doi: 10.1080/02642069.2014.886191.

Sgarbossa, F., & Russo, I. (2016). A proactive model in sustainable food supply chain: insight from a case study. *International Journal Production Economics, 184,* 596–606. Retrieved from https://doi.org/10.1016/j.ijpe.2016.07.022

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

Shirvastava, P. (1995). Environmental technologies and competitive advantage. *Strategic Management Journal, 16,* 183 – 200. Retrieved from

https://doi.org/10.1002/smj.4250160923

Snedden, Ch., Howarth, R.B., Norgaard, R.B. (2006). Sustainable development in a post-Brundtland world. *Ecological Economics,* 57, 253–268. Retrieved from https://doi.org/10.1016/j.ecolecon.2005.04.013

Sonka, S. T., & Hudson, M. A. (1989). Why agribusiness anyway? *Agribusiness, 5(4),* 305- 314. Retrieved from https://doi.org/10.1002/1520-6297(198907)5:4<305::AID-AGR2720050402>3.0.CO;2-3

Starik, M. (2013). Organisation and environment: Present, past and future. *Organization & Environment, 26(3),* 239 – 240. doi: 10.1177/1086026613499233.

Starik, M., & Kanashiro, P. (2013). Toward a theory of sustainability management: uncovering and integrating the nearly obvious. *Organization & Environment, 26(1),* 7-30. Retrieved from https://doi.org/10.1177/1086026612474958

Starik, M., & Rands, G. P. (1995). The role of corporations in achieving ecological sustainability. *Academy of Management Review, 20(4),* 908 – 935. Retrieved from https://doi.org/10.5465/amr.1995.9512280026

Sustainable Development Goals. (2018). Retrieved from http://www.undp.org/content/undp/en/home/sustainable-development-goals.html

Szekely, F., & Knirsch, M. (2005). Responsible leadership and corporate social responsibility: Metrics for sustainable performance. *European Management Journal, 23,* 628 – 647. Retrieved from https://doi.org/10.1016/j.emj.2005.10.009

Thompson, A. A., Peteraf, M. A., Gamble, J. E., & Strickland, A. J. (2012). *Crafting & executing strategy: The quest for competitive advantage: Concepts and cases* (18th. Ed.). New York: McGraw Hill.

Touboulic, A., Chicksand, D., Walker, H. (2014). Managing imbalanced supply chain relationships for sustainability: A power perspective. *Decision Sciences, 45(4)*, 577-619. Retrieved from https://doi.org/10.1111/deci.12087

Turner III, D. W. (2010). Qualitative interview design: A practical guide for novice

investigators. *The Qualitative Report, 15(3),* 754-760. Retrieved from https://nsuworks.nova.edu/tqr/vol15/iss3/19

Valente, M. (2012). Theorizing firm adoption of sustaincentrism. *Organization Studies, 33(4),* 563 – 591. doi: 10.1177/0170840612443455.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal, 18,* 303 – 319. Retrieved from https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G

Walls, J., Phan, P., & Berrone, P. (2011). Measuring environmental strategy: Construct development, reliability, and validity. *Business & Society, 50(1),* 71 – 115. doi: 10.1177/0007650310394427.

Whiteman, G., Walker, B., & Perego, P. M. (2013). Planetary boundaries: ecological foundations for corporate sustainability. *Journal of Management Studies, 50(2),* 307-336. Retrieved from https://doi.org/10.1111/j.1467-6486.2012.01073.x

World Commission on Environment and Development (WCED). 1987. *Our common future (The Brundtland Report).* North-Holland: Elsevier Science Publishers.

Yin, K. R. (2009). *Case study research design and methods.* USA: Sage.

Zikmund, W., Babin, B., Carr, J., Griffin, M. (2013). *Business research methods.* USA, South Western: Cengage Learning.

APPENDIX A: CONSISTENCY MATRIX

Research Questions	**Q1:** To what extent are corporate sustainability strategies understood and measured?	**Q2**: What are the enablers and inhibitors to implementing corporate sustainability strategies? And what is the most dominant enabler?	**Q3**: What is the interplay between reducing post-harvest grain losses and the sustainability of the grain industry and how can this be compared to other enablers which impact on the implementation of corporate sustainability strategies to support the TBL of the grain industry.
Literature Review Sections	Corporate Sustainability Strategy: sustainability and triple bottom-line. Corporate sustainability. Business sustainability and sustainability measurement.	Sustainability Management: Sustainability Strategies, enablers and inhibitors. Stakeholder theory.	Supply Chain Management in Agribusiness: Agricultural supply chain management. Agribusiness and grain industry sustainability.
Data Collection Tools	Semi-structured, in-depth, face-to-face interviews. Website information and publically available data.	Semi-structured, in-depth, face-to-face interviews. Website information and publically available data.	Semi-structured, in-depth, face-to-face interviews. Website information and publically available data.
Analysis Technique	Phase I: Content Analysis. Phase II: Thematic Analysis.	Phase I: Content Analysis. Phase II: Thematic Analysis.	Phase I: Content Analysis. Phase II: Thematic Analysis.

APPENDIX B: ETHICAL CLEARNACE APPROVAL

Dear Somayeh

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

Please note that approval is granted based on the methodology and research instruments provided in the application. If there is any deviation change or addition to the research method or tools, a supplementary application for approval must be obtained

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

APPENDIX C: INFORMED CONSENT LETTER

Dear Participant,

Globally, one out of every four food calories is lost or wasted from farm to fork, never to be consumed by a human. The monetary value of these losses in Sub-Saharan Africa is bUS$ 4, which could be used to feed 48 million people. In addition to the loss of economic value that could be saved to grow the economy, the resources used in the production of the lost food are wasted. When one narrows this global issue down to the South Africa agribusiness context and focuses on grains as the staple food of the country, it is clear that developing appropriate corporate sustainability strategies that focus on contributing to the reduction of grain losses to impact the triple bottom-line, is of high importance. The purpose of this study is thus to firstly explore the dimensions of corporate sustainability strategies within agri-grain companies in South Africa, and secondly, to understand the impact of these strategies with respect to the reduction of grain losses on the triple bottom-line in the grain industry.

The nature of the interview is exploratory and conversational and is expected to last not more than an hour. Please note that to capture the interview contents in details, the session will be recorded. However, your permission is requested prior to the commencement of the session.

Your participation is voluntary and you can withdraw at any time without penalty. The recorded data will be kept confidential and will be reported without identifiers assuring your anonymity. Your participation in this study is highly appreciated. In case of any concern, please contact me or my supervisor. Our contact details are provided below:

Participant Signature Consent: _____ Date: _____

Researcher: Somayeh Mohammadiatedresi
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0798900864

Supervisor: Professor Tracey McKay
mckaytjm@unisa.ac.za
0732649496

Signature _____

Signature _____

APPENDIX D: INTERVIEW GUIDE

Respondent No ☐

Name: Date:

Organization: Place:

Job title: Time:

Corporate Sustainability Strategies followed by South African Agri-grain Firms.
1. What is your understanding of corporate sustainability strategies? 2. What aspects or dimensions of sustainability strategies does your firm focus on? 3. How is the impact of the sustainability strategies' dimensions measured?
The Enablers and Inhibitors of Corporate Sustainability Strategies in Agri-grain Firms.
1. What are the enablers of the implementation of corporate sustainability strategies? 2. What are the inhibitors or challenges of the implementation of corporate sustainability strategies? 3. What is the most dominant enabler to implement the corporate sustainability strategies?
The Impact of Reduction of Grain Losses in Implementation of Corporate Sustainability Strategies and the triple bottom-line in South African Agri-grain Industry.
1. What is the impact of reducing grain losses on the sustainability of your firm and the sustainability of the grain industry? 2. What is the impact of other enablers on the sustainability of your firm and the sustainability of the grain industry? 3. What are the challenges associated with reducing the grain losses? 4. How do you compare the impact of reducing the grain losses and the other enablers on corporate sustainability of your firm as well as the TBL in grain industry?

APPENDIX E: PRESENTATION OF CODES, SUB-CATEGORIES AND CATEGORIES

No		Construct	Frequency
A	Major	Corporate Strategy & Strategy Execution.	**227**
		Strategy, Corporate Strategy, Implement Strategy, Implementation, Implement, Strategy Implementation, Strategy Execution, Execution.	91
		Co-op, Cooperative, Cooperative Structure, Corporate, Corporately, Corporate Will (3). (JSE, Listed, Not-Listed (16)).	69
		Vision, View(s), Mission, Motto, Target, Priority, Slogan.	25
		Plan, Planning, Strategic Plan, Projection, Strategic Decision, Projection, Guideline, Policy, Goal, Purpose, Harmony (2).	9
		Business Model, Model, Modelled, Business Strategy.	7
		Position, Positioning, Repositioning, Balance, Balancing, Strategizing.	5
B		Sustainability, Corporate Sustainability, Corporate Sustainability Strategy and Sustaining over a long run.	271
		Sustainability, Sustainability Strategy, Corporate Sustainability, Corporate Sustainability Strategy (4), Corporate (1).	108
		Future, Sustainable Future, Future Generations, Next Generations, Tomorrow (meaning future).	25
		Triple bottom-line.	20
		Impact, Influence.	2
		Transformation, Sustainable Transformation, Transform, Change Management, Manage Change.	8
		Sustainability Reporting, 3P Reporting, Sustainability Report.	4

		Long-term, Long Period, Overtime, Sustainable, Sustainably, Sustaining.	99
C		Profitability, Profit(s), Profitable, Profitably, Making Profit, Adding Profit, Adding-up Profit.	117
		Money, Making Money, Monetary, Monetary Value, Value, Spend Money, Spend, Earn Money, Lose Money, Pay, to Pay, Paying, Payment, Fee, Cash, Cash flow, Positive Cash flow, Amount, Volume, Volume Game, Paying Penalty, Loss, Loss-making, Lost.	139
		Price, Pricing, Affordable Pricing, Afford, Price Taker, Price Maker, Discount, Commodity Price (3).	90
		Report, Reporting, Annual Reporting, Annual Report, Annual basis, Annual Statement.	20
		Bottom-line.	21
		Benefit, Margin, low-margin, high-margin, Incentive, Incentive Scheme, Incentivise, Subsidies, Subsidy, Subsidize, Levy, Commission.	56
		Income, Income Stream, Revenue, Result, Figure (1), Outcome, Output, Turnover, Facts, Factual Info.	46
		Asset, Asset-base, Assets.	20
		Balance sheet.	2
		Dividend, paying a Dividend.	2
		Cost, Costing, Incurring Cost, Cost-base, Cost-effective, Fixed-Cost, Input Cost, Cost Structure, Cost-cutting, Cost Reduction, Costly, Cheap (1), Expensive, higher Value, Valuable, Affordable.	100
		Save, Saving(s), Credit, Credit Account, Production Credit, Bank(s), Commercial Banks, Commercial, Transaction(s), Bank Balance, Credit Rate, Interest Rate, Rate, Interest, Debt (1), Reserve.	33

		Return, Return on Investment, ROI, Profit on Investment, Growth on Investment, Effectiveness, Efficiency, Efficient, Inefficiency, Return on Equity (1).	38
		Investment, Invest, Investor (2), Financial Investment, Investment Confidence.	53
		Finance, Financially, Financial, Finance Institution, Finance Model, Financial Year, Financial Input, Financial Measurement, Financial Transaction, Finance Department, Finance Solution, Financing, Financeable, International Financial Reporting, Reporting.	84
		Financial Sustainability.	1
		Economy, Economics, Economic, Economically, Economic Growth, Economy-wide.	42
		Economic Sustainability.	3
		Growth, Business Growth, Long-term Growth, Grow, Growing the Business, Organic Growth (1).	24
		Expanding, Expansion, Footprint, Expanding Footprint, Merger & Acquisition, Acquisition.	33
		Agricultural Economy, Agricultural Economic, Agricultural Economist.	3
		Economies of Scale.	8
		Budget, Budgeting, Fund, Funding, Trust Fund (1), Development Fund (1), Budget Planning, Objective, Target.	24
		Capital, Raising Capital, fixed-Capital, Capital Expenditure, Expenditure, Expenses, Monthly Expenses, Capex.	32
		Rand, Rand Value, Value, Bucks.	44
		Tax, Tax Responsibility.	1
		Fluctuation, Inflation, Currency, Currencies, Exchange Rate.	14
		Audit, Internal audit, External audit, Comply to (1), Survey, Recording, Keep Record(s).	16

		Market, Marketing, Advertising, Marketability, Free Market, Market share, Market Size, Market Growth, Market Price, Market Player, Market Leader, Market Shaper, Market Trends, World Trends, World (21), Trends, Market Opportunity, Opportunity, Global Market (1), Local Market, Market forces, Forces, Internal & External Forces.	140
		Supply, Demand, Seasonal Demand, Supply and Demand.	6
		Compete, Competitive, Competitiveness, Competitively, Competitive Advantage, Competitive edge, Competitive Position, Competition, and Competition Commission.	78
		Brand, Trusted Brand, Reputation, Credibility (2).	8
		Africa (28), Continent (1), Population (9).	
		Inequality.	2
		Benchmarking.	1
	Total	**Profitability and the sub-categories**	**1 375**
D		Stakeholder Management	6
		Shareholder, Share Value, Share, shared value (2).	15
		Owner, Trust, Trustee.	11
		Partner, Partnership.	7
		Supplier, Supply, Provider, Procurement, Procure.	36
		Seller, Buyer, Shopping, Shopper, Trading, Trader (2), Selling & Buying, Purchasing.	51
		Retail, Retail Business, Retail Shop, Convenience Business.	10
		Contract, Contractor.	15
		Competitor, Guy next door.	4
		Client, Customer, User, Loyalty System (1), Handling Customer Complaints, Customer Expectation, Bargain (1).	126

		Service, Quality Service, Advisory Service, Customer Service, Service Agreement.	39
		Consumer, Consumption, Consumption Trends, Consumption Patterns.	27
	Total	**Stakeholder Management**	**353**
E		People & Corporate Culture	200
		Employee, Employ, Overhead, Staff, Work force, Labour Employer (1), to Lay off (4).	77
		Employment, Unemployment, Working, not Working, Job, Job Creation.	18
		Personnel, guy, Person, Everyone.	3
		Performance, People's Performance, KPI, Evaluation, Performance Evaluation, Accelerating Performance, Productivity, Effectiveness, Objective, Target, Principles, Enforcing (2).	15
		Skilled People, Skill(s), Skill Development, Capability, Capable, Capacity.	28
		Training, Education, Training & Education, to Educate, to Enable, Teaching, Educated People, Learning, Empowering People, Empower, Empowerment, Learner ship.	33
		Knowledge, Knowledge-Transfer, Expertise, Experience, Experienced person.	33
		Qualifications, Qualified, Qualified Workforce.	1
		Leadership.	9
		Leader, Visionary.	9
		Board, Board Member, Member, Member of Co-op, Board of Directors, Non-executive directors, Directors, CEO, Ex-Co, Chairman, Top, Top Management, Management Support, Management Team, Management, Senior Management, Line Management, Chairman, MD, Managing Director, Line Manager, Manger.	82

		Silo Manager, Silo Operator, Supervisor(s), Middle Manager(s), Technician, Operator, Engineer, Maintenance Manager.	21
		Management Skills, Management Practices, Practices, Management, Control, Controlling, Managing, Monitoring.	83
		Specialist, Quality Assurance Specialist/ Person, Expert.	8
		Safety, Occupational Health & Safety, Safety Audit, Work Environment, Safe Work Environment, Continuous Improvement, Work Environment (8), Housekeeping (1), Illness & Strike (2).	14
		Salary, Remuneration, Bonus, Pension (1).	6
		Culture, Cultural, Organizational Culture, Client-Care Culture, Organizational Purpose, People Culture.	17
		Ethical Business, Ethical, Ethics	4
		Value(s), Accountability, Integrity, Transparency, Honesty, Trust (8), Loyalty (1), Reliability, Awareness, Golden Rule (1), Harmony (1).	30
		Team, Team effort, Energy & Excitement at work.	7
		Concerned about South Africa, Country.	79
	Total	**People & Corporate Culture**	**807**
F		Community	27
		People, Locals.	34
		Agricultural Community, Farming Community.	2
		Disadvantaged Community.	2
		Rural Area, Township, Town, Local areas, Small Areas.	29
		Leaving Conditions.	1
		Social, Societal, Social Responsibility, Social Program, Social Project(s), Society, Responsibility, Corporate Social Investment,	55

		CSI (3), Corporate Social Responsibility, CSR, Social Contribution.	
		Upliftment, Social Upliftment.	5
		Social Sustainability.	1
	Total	**Community and the sub-categories**	**159**
G		Food Security, Food Safety	24
		Food, Food Quality, Quality, Staple Food, Nutrition.	52
		Traceability.	8
		(Fumigation, Fumigate, Grain Fumigation (5)) (Infest, Infestation, Insects, Quality Deterioration (8)) (Pest Control, Plant diseases, Insects Chemical(s), 5) (Spray, Spraying (2)) Chemical (6), (Fungal Infection, Fungi, Infection, Microorganism (4)) Disease, Disease Control (3).	
		Food Trends, Food Availability (3), Food Affordability (1).	
		Food Companies, Food Industry, Food Business, Food production.	5
		HACAP, HACAP Guidelines, Food Standards, Food Test, Sanity, Stipulations (1), Specifications, Quality Parameters, Quality Specifications, Parameters, Quality Assurance Policy, Grading Regulations (5).	14
		Accreditation, Accredited.	2
		Aflatoxin, Mycotoxin, Toxins, Cross-Contamination (1).	3
		Biological Practices, Chemical-free.	5
	Total	**Food Safety & Food Security**	**157**
H		Supply Chain Management	
		Food Value Chain, Food Chain, Value Chain, Chain, Agricultural Value Chain.	95
		Integrate, Integration, Integrated.	5

		Value, Value Adding, Add Value, Offering Solution (4).	27
		Transport, Transportation, Logistics, Shipment (7), Shipping, Port of Loading & off-loading.	61
		Production Cycle, Production Process.	1
		Farm, Field, Ground, Farming, Profitable Farming, Farming Process, Farming Practices, Practices.	78
		Fertilization, Fertilizers, Fertilizing.	10
		Farming Industry, Agri-Industry, Agri-company, Farmer Business, Farm Business, and Farming Business.	42
		Agriculture, Agricultural, Agricultural Department, Agricultural Company, Agri-Company.	42
		Agronomy, Agronomist (2).	2
		Agribusiness.	4
		Farmer, Producer, Planter, Upcoming Farmer, Emerging Farmer, Commercial Farmer, Subsistence Farmer.	332
		Grain Buyer, Grain Trader, Exporter (2).	3
		Storage Facilities, Grain Depos, Terminal (12).	50
		Silo(s), Bin(s), Grain Silo(s), Silo Facilities.	140
		Silo Bag.	29
		Bunker.	13
		On-farm Storage, On-farm Silo.	10
		Facility, Premises, Structure, Infrastructure - belonging to firm or organization.	33
		Method(s), Process(s), System(s), Operation(s).	51
	Total	**Supply Chain Management**	**1 060**
I		Planet, Environment, Environmental, Environmentally, Environmentally Friendly, Environmental Issues.	54
		Energy.	1
		Pollution, Noise.	4

		Climate, Climate Change, Weather, Weather Patterns, Season, Seasonal, Forecast(1), Cycle, Cyclical (1), Global warming, Weather extremes, Flood, Heat, Storm.	57
		Rain, Rainfall.	13
		Irrigation, Irrigation Area, Soil (7).	3
		Carbon Footprint, Green, Co2 emission, Recycling (2).	3
		Nature, Naturally, Natural Resources, Resources.	10
		Drought, Drought Area.	14
		Dust, Dusty, Dust Pollution, Air Quality.	36
		Environmental Sustainability.	3
	Total	**Environment, Planet**	**209**
J		Grain Management, Manging Grain, Grain Practices, (Best) Practices, Discipline(s), Checks & Balances, Grain, Maize (95), Wheat (41), Commodity, Product, Crop.	216 188
		Seed, Seed Processing (1), Seed Processing Plant (3), Cultivation, Cultivar, Seed Quality (2).	42
		Grain Losses, Losses, Physical Losses, Seed Losses (1), Harvesting Loss, Post-Harvest Losses, Handling Losses, Yield Losses, Reducing or Minimizing Losses.	323
		Wastage (8), Spillage, Leakage, Breakage, Defects.	38
		Production, Grain Production, Optimizing Production, Productive, Producing Grain, Planting, Growing, Productivity/ Yield (45).	174
		Harvest, Grain Harvest, Harvesting.	36
		Grain Industry (32), Wheat Industry (8), Maize Industry, Industry (76), Industrial, Seed Industry (1), Milling Industry (3).	
		Agri-grain firm, Agri-company, Grain firm, Grain Company/ Silo Company, Grain handling	8

		company, Grain Department, Division, Grain Division.	
		Grain Volume, Grain Weight, Grain Quantity, Grain Load.	30
		Grain Handling, Grain Handling Industry, Handling, Handling Procedures, Seed Handling (1), Loading, Unloading, Off-loading, Intake.	127
		Sieving, Cleaning, Screening, Separating, Sorting, Grading.	19
		Storage Practices, Grain Storing, Storing, Storage.	102
		Grain Trading, Grain Trading Companies, Commodity Trading, Safex (4).	17
		Grain Milling, Milling, Mill, Processing, Processing Plant, Plant, Off-taker, (Flour) Producing, Operations, Operating, Extraction Facility, Producer, Agri-Processor, Agri-processing and Miller.	162
		Grain Stock, Stock, Stock Management, Stock Control, Stock Losses, Stock balance, Safe guarding Stock, Inventory, Inventory System, Stock Book, Recording, Grain Weighing, Grain Deliveries, Checks & Balances.	82
		Moisture, Moisture Management, Moisture Losses, Water, Temperature, hot spot, Drying Grain, Getting Wet.	79
		Quality, Grain Quality, Output Quality, Good Quality Grain, Seed Quality (17).	45
		Flour, Flour Quality, Maize Mill.	2
	Total	**Grain & Grain Management**	**2 028**
K		Regulatory Regime	
		Policies, Legislation, Policies & Legislations, Practices, Guideline, Act, Licenses (1), Permit, Rules & Legislations, Law, Rules, Obeying Rules, Red-Tapes, Red-Taped, Regulations,	76

		Regulating, Comply, Compliance(s) Adherence, Legislation Implementation (3), BBBEE (1).	
		Government, Government Industries, Government Legislation, Government Responsibility, Local Government, Government Support, Government Structure, Support Structure, Governance.	50
		Government Policy.	3
		Governor, Legislator, Port Authority (1).	2
		KING IV.	1
		Political, Political Issues, Politics.	8
		Policy Certainty, Certainty, Business Certainty.	4
		Policy Uncertainty, Instability.	4
		Trade Issues, Import, Export, Trade Environment, Importer, Exporter.	40
		Safety, Farm Safety, Safeguarding Farms, Hi jacking Farmers, Farm Murder.	6
		National, National Body (1), International, Local, Nationally & Internationally, Locally & Internationally, Locally, Global, Globally, Global Best Practices (3).	9
		First-world, Third World, Third World Rules, First Countries.	12
		Land, Land Reform, Agricultural Land, Farming Land, Expropriation without Compensation, Land ownership, Land Distribution, Hectares, Soil.	89
		Constitution.	1
		Institution, Institutional, Institutional Capacity, Institutional Collapse, Association, Committee, Committees.	11
		Private, Private Sector.	6
		Informal Sector.	4
		Property, Property Right, Real-estate, Lease.	11

		Business Environment, Environment for Business, Environment for Industry, Corporate Environment.	14
		Apartheid Era, New Era, Race-based Change.	3
		Bribery, Corruption.	5
	Total	**Regulatory Regime**	**369**
L		Local Government, Infrastructure	24
		Water, Water quality, Water Structure, Water Infrastructure, Water Resources, Water meter, Water Management.	52
		Irrigation, Irrigated land.	8
		Fuel, Fuel Consumption, Fuel Project, Diesel.	17
		Electricity, Electricity Usage, Account Usage, Electricity Cost, Electricity Consumption, ESKOM, Electricity Generation, Solar Energy (1).	32
		Rail, Road.	38
		Municipal, Municipality, Regional Responsibility (1).	7
		Location, Geographical, Geographical Area, Region, Geographic Region, Area, Agri-Region (1), Boundaries (8).	25
	Total	**Local Government & Infrastructure**	**214**
M		Technology (ies), Technological, Technology Execution, Technology Efficiency.	137
		Equipment, Sieve, Cleaner, Screen, Sorter, Grader Oven (dryer), Conveyor.	66
		Information, Data, IT, Computer(s), Software Technology, Automisation,	34
		Technology Support, Tech Adaption.	1
		Farm Technology, Precision farming, Combine, Harvester, Tractor, Trailer.	26
		Mechanisation, Machinery, Machine(s), Mechanical, support, Upgrade.	12
		Weighbridge, Weighing, Scale, Weight cell(s).	21
		Safety Equipment.	1

		Industry 04.	2
		Innovation, Innovative, World-Class.	2
		Genetics, Genetically Modified Organism, GM Development, GMO.	10
		Project, Aeration Project, Aeration, Capital Project (1).	12
		Dust aspiration, Dust Extraction, Extractive Fan(s), Fan (s).	2
		Solution, Opportunity (1).	2
		Means, Tool(s), Maintenance, Maintaining, Replacement.	17
		Research & Development, Agricultural Research, Methodology (2).	5
	Total	Technology	**354**
N		Risk, Risky, Risk Register,	55
		Risk Mitigation, Effect Mitigation.	4
		Risk Management, Manage Risk.	7
		Audit, Risk Committee, Risk Reporting.	3
		Diversity, Diversification, Diversity of Risk.	2
	Total	**Risk**	**71**
O		Theft, thieves, Syndicate	73
		Crime, Criminal.	5
		Steal, Stealing, Stolen (grain), and Industry (1).	16
		Fraud.	4
		Court, Case.	6
		Security, Security Expenses, Safety (3), Policing, Investigating.	18
		Precautionary Measures & Measurements.	1
		Camera(s), CCTV, Electrical Fence, Fence(s), Beam(s), Car guard(s), Gates, Finger prints, Alarm system, Investment, Security Technologies & Tools.	24
	Total	**Theft**	**151**