

AMERICAN UNIVERSITY OF BEIRUT

FROM RANCH TO TABLE: AN EXPLORATORY MULTIPLE
CASE STUDY OF FOOD SECURITY IN SAUDI ARABIA

by

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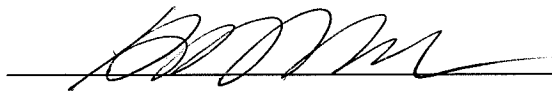
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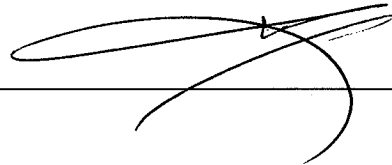


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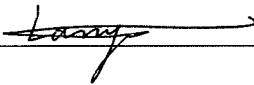
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AN ABSTRACT OF THE PROJECT OF

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The food security challenge has been and still is a concern for many countries. In Saudi Arabia, the food security situation can be observed through the food-energy-water nexus. Since these elements are interconnected, when one is affected it's evident that the remaining two will undoubtedly be affected. The arable land constitutes 2 percent of the country's huge land mass. Saudi Arabia provided intensive irrigation and advanced farming technology, yet the country's arid climate combined with previous mismanaged agricultural practices increased the desertification rate. In addition, Saudi Arabia has always been reliant on food imports, this dependency has been rising due to the growing population. By 2050, the country's population is expected to grow by 77 percent (Lippman, 2010).

Further, Saudi Arabia has depleted its water resources. The country's determination to reach self-sufficiency in crops such as wheat resulted in exhausting the water supplies in KSA. Thus, Saudi Arabia depends heavily on desalinated water to secure nation's demand. Desalinated water covers seventy percent of the kingdom's water demand, however this created other challenges for Saudi Arabia. For instance, the required energy input is accounted for more than 50 % of the domestic oil consumption. Thus, linking the desalination process to the stability of KSA's oil supply. Moreover, the government has supported investment projects abroad through King Abdullah Food Security Initiative. The initiative has encouraged Saudi investors to use their experience and resources abroad. Saudi food and agricultural companies have been benefiting from such funds.

This study gives an overview of the food security situation in Saudi Arabia and explores the strategies and investments of two cases, *Almarai* and *SALIC*, in order to comprehend their impact on the ongoing concern of food security. The research conducts two case studies, *SALIC* and *Almarai*, by using a comparative analysis approach to produce their capabilities under four themes. The themes embrace the food security pillars which are food availability, food accessibility, food utilization, and food stability. Each theme works as an umbrella to discuss different determinants that interacts with *SALIC* and *Almarai*'s strategic investments. Therefore, the study contributes to complement the ongoing literature of food security in Saudi Arabia and provides the necessary foundation for further research.

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ABBREVIATION

CFC	Chlorofluorocarbons
CFG	Continental Farmers Group
CPP	Central Processing Plant
FAO	Food and Agriculture Organization
G3	Global Grain Group
GCC	Gulf Cooperation Council
HADCO	Hail Agriculture Development Company
IBS	International Baking Service
IDJ	International Dairy and Juice Limited
IPNC	International Pediatric Nutrition Company
KSA	Kingdom of Saudi Arabia
MENA	Middle East, North Africa
MFI	Modern Food Industries
SALIC	Saudi Agricultural and Livestock Investment Company
SAR	Saudi Riyal (official currency of Saudi Arabia)
SGAF	Saudi Grains and Fodder Holding
SSB	Sugar-Sweetened Beverage
UFHC	United Farmers Holding Company
UHT	Ultra-High Temperature
USA	United States of America
USD	United States Dollar

CHAPTER 1

INTRODUCTION

Food is a fundamental part of people's lives and throughout history it's been considered the driving incentive for social change, development, and conflict. Virginia Woolf, expressed the importance of food on human life by saying "One cannot think well, love well, sleep well, if one has not dined well" (Reid, 2018). Securing food has been and still is a main objective of many countries. Key issues such as hunger and poverty continues to come up as themes in national and international discussions. The concept that evidently turned to be food security has emerged since the seventies. Ríos García, Alonso Palacio, Erazo-Coronado, and Pérez (2015) explained that food security was the umbrella covering food production and availability at the national level and also at the global level. In the eighties, this concept was expanded to include adequate access to food sources, and by reaching the nineties the food security concept introduced the element of accessing affordable and nutritional food along with insisting on cultural food preferences (Ríos García et al., 2015).

Moreover, Prosekov and Ivanova (2018) argued that population growth imposes a great concern on food security. They stated that by the year 2050 the world population is expected to be approximately between 8.3 billion and 10.9 billion people (Prosekov

and Ivanova, 2018). The rising world population will put pressure on natural resources and global food system. Similarly, Maye and Kirwan (2013) projected the challenges imposed on agri-food production, by discussing the crisis in a divertive aspect because the problem is not simply producing more food, but rather food production in a sustainable and less exploitative manner. Therefore, food security aims to advocate for self-sustainable practices and development by producing food of high value nutrients followed by cultural practices with the rational uses of resources (Ríos García et al., 2015).

1.1 Statement of the Problem

Food security is considered essential for Saudi Arabia for many years. However, the 2007-2008 shock that led grain producing countries to report lower harvest due to floods, insect infestations, and drought have shifted the Saudi's policies regarding agriculture. The alarming impact of the 2007-2008 crisis shock the Arab region, especially Saudi Arabia that used to supply themselves through international market. Thus, by considering the water-food-energy nexus it is evident that food security has been and still is an important part of Saudi Arabia's national agenda.

Moreover, water is the determining factor of whether a specific area can or

cannot be used for agriculture. Saudi Arabia is considered water stressed, and this was heavily due to the pursuit of a self-sufficiency policy that led the country to place huge pressure on renewable and nonrenewable water resources (Pieters & Swinnen, 2016). The production of certain agricultural products has used 88% of freshwater, therefore making such production crucially unsustainable (Pieters & Swinnen, 2016). In addition, Saudi Arabia has sufficient energy resources (oil, gas). The energy sector's revenue in Saudi Arabia constitutes 90% of the whole governmental fiscal revenues (Pieters & Swinnen, 2016). The relationship between water scarcity and energy availability is strong, and this can be illustrated by discussing water desalination in KSA. Saudi Arabia invested massively in water desalination which is a procedure that is considered energy intensive (Blanc & Brun, 2013).

Thus, by abandoning the previous self-sufficiency drive that led the country to use most of its water resources and energy intensive solutions, KSA has changed its model from traditional family agriculture to corporate farming (Pieters & Swinnen, 2016). Saudi Arabia understood that food security is no longer achieved through self-sufficiency, but rather via purchasing food stuff that are less costly through international markets (Pieters & Swinnen, 2016). The harm that came from the 2008 food crisis and

exhausting water resources have forced Saudi Arabia to reconsider its approach for meeting food security (Blanc & Brun, 2013).

Along these lines, looking to invest abroad became the new strategy, and this approach was the alternative in order to secure domestic demand and supply. In 2009, Saudi authorities introduced the king Abdullah initiative for investment in agriculture abroad. This project provided encouragements to many Saudi firms to start investing in farms in about 35 countries (Al Daffaa, 2017). Furthermore, the Saudi government supports the food industry by providing security and financing for their investments. Hence, this study was designed to look into and understand how agricultural and food companies direct their investments and strategies to help reach food security in Saudi Arabia.

1.2 The Study: Purpose & Significance

This study looks into food security in Saudi Arabia by conducting two case studies on two specific companies, *Almarai* and *SALIC*. Saudi Arabia was chosen because of recent agricultural policies that might have restrictive impact on the local and international level. Even though many developing countries and emerging countries of

the middle east do constitute a good example to comprehend the intensity of the situation, Saudi Arabia as a major Gulf country provides a better understanding and contribute as good example to conduct food security research as it plays a huge role in the oil market. The purpose of this study is to grasp the current situation in Saudi Arabia and provide better ways to limit the impact of food insecurity. Thus, by studying the two Saudi companies, *SALIC* and *Almarai*, the study introduces better knowledge on how redirecting strategies and investments can lead to certain outcome. This study may contribute to complement the ongoing literature of food security as a whole and provide the necessary foundation for further research.

Furthermore, this study answers the following main question: How can Saudi agricultural and food companies adapt their strategies and investments to deliver solutions for food security?

To answer the research question, a qualitative research design was chosen; therefore, a case study approach was selected in order to best explore agricultural and food companies' impact on food security in Saudi Arabia. Understanding the phenomenon is best executed through conducting case studies. The role of case studies considers to be crucial when the study at hand investigates a contemporary phenomenon in real life

context (Yin,2014). The two case studies focus on two Saudi companies, *SALIC* & *Almarai*. These two companies were selected to study their investments and strategies because of their strong and influential presence, locally and internationally. The intent of this study is to develop a better understanding of the capabilities of such investments and strategies in relation to the Saudi food security situation.

1.3 Organization of the Remainder of the Study

This research study includes seven chapters. Following the introduction, Chapter two discusses the research methodology which presents the design, data collection, reasons behind the selection. Also, it clarifies the encountered limitations of the study. Moreover, chapter three details the literature review which consist of two parts; the first part covers the relevant themes and concepts that relates to food security in general to form as the general foundation of the study. The second part lays out the food security situation in Saudi Arabia specifically, and this establishes the needed background of the situation. Chapter four is the first case study, *Almarai* company. This chapter gives the need background of the company and describes the nature of its investments and strategies. Chapter five represents the second case study, *SALIC*. This chapter provides the needed background of the company, in addition to the insights of its strategies and

investments. Furthermore, chapter six cover the comparative analysis and findings of both cases, which illustrates the capabilities of the companies' investments and strategies in dealing with Saudi Arabia's food security. Finally, chapter seven concludes the study by examining insightful remarks and suggesting further studies.

CHAPTER 2 METHODOLOGY

An exploratory case study was the method used to best answer the research question of this project. The project design establishes the selection of two cases. These two case studies, *Almarai Company* and *Saudi Agricultural and Livestock Investment Company (SALIC)*, were selected due to their recognizable presence along with their impact contribution in KSA and the region. The nature of this multiple case study is to explore the power and control these companies have in order to help reach food security in Saudi Arabia. The research question for this study aligns with the design as it proposes a clearer focus on the effect of certain investments carried by these companies in countering the issue of food security in KSA. Further, by describing the nature of the two companies' investments and strategies, the study has projected an in-depth discussion of how such companies operate in order to determine their position in line with the food security goal in Saudi Arabia.

The focus on the investments and strategies of these two cases was a necessary element. Therefore, to attempt to understand how agricultural and food companies navigate their investments to serve their interests along with benefiting their country's fulfillment of food security, a descriptive tactic was integrated to provide a clearer view

of how, what, and where such investments were targeted. To best explore the relationship, the study has identified criteria for the comparative analysis that was incorporated in the findings. These criteria were (i) supply and demand (import/export), (ii) economic factor, (iii) food safety and preference, (iiii) potential vulnerabilities. However, these criteria were themed as food availability, food accessibility, food utilization, and food stability.

The empirical case study of *Almarai* was based on qualitative secondary data. the data was collected from the official website of the company, online official reports, journals and newspapers. The second case study, *SALIC*, was also based on qualitative secondary data that was collected through the official website of the company along with newspapers & ProQuest documents. In addition, bibliographic databases such as google scholar, SpringerPlus, SpringerLink, Elsevier, Saudi General Authority for Statistics, Taylor & Francis Online, WorldBank and so on developed the opportunity to grasp different interrelated perspectives that circulated around the issue of food security. This study can be expected to be used as a trigger for further studies.

2.1 Limitations

In order to highlight the problems that surfaced while conducting this study it's better to start by stating that accessing information about Saudi Arabia can be known as difficult. The first limitation is that some of the ministries' websites lack an up-to-date information. This resulted in a more exhaustive research to obtain approximate numbers from different international sources. Second, there was so little details on companies' acquisition and joint ventures especially in the case of *SALIC*. Third, in exploring the two cases, *SALIC* and *Almarai*, there was an uneven access to information. Therefore, due to *SALIC* recent establishment, its website provides no official reports regarding the company. The official website of *SALIC* also includes very little explanation on its subsidiaries and investments. Therefore, resulted in extensive research in order to extract information from a great deal of newspaper websites. The company seems to maintain a conservative approach when it comes to publishing information. Also, the wholly owned subsidiaries of *SALIC* projected the same issues on their websites. This have imposed limitation in conducting the comparative analysis.

Thus, to demonstrate the capabilities of *SALIC*, the information was gathered from the companies that *SALIC* invested in while exploring *SALIC* as an investor. Unlike *Almarai*, where information about its investments was integrated with the company as a whole. Fourth, the huge difference between *SALIC* and *Almarai*, in terms

of years of experience, imposed another limitation when it comes to comparing. Yet, the study looked into what was established through *SALIC's* investments and strategies to illustrate its capabilities in relation to the themes' determinants.

Thus, these limitations created certain constrains in the findings of the study, however the findings produced the best possible outcome even with the tight access of information. Accordingly, this study will exclude paths that might lead to generalities and focus on these two cases specifically in order to illustrate their capabilities regarding food security.

CHAPTER 3

LITERATURE REVIEW

Food security is gaining populous attention in the past years especially after the 2007-2008 increase in food prices, many literatures have circulated around the concept and the impact of food security. The term food security has been defined in 1996 by the United Nations Food and Agriculture Organization (FAO) as *“food security exists when all people, at all times, have physical and economic access to sufficient, safe, nutritious food to meet their dietary needs and food preferences for an active and healthy life”*. This definition encounters four dimensions of food that are required to be applicable and these are: Availability, Accessibility, Utilization, and Stability (Bastian&Cveney,2013). In addition, in 2009 the world food summit renewed this definition by connecting it to a nutritional dimension which contribute as an indispensable part of food security (Bastian&Cveney,2013). The evolving domain of food security have represented many ways to illustrate the severity of the food issue, therefore tackling food security should come across many concepts that’s related in one way or the other to the whole dilemma. The physical and economic access, availability, utilization dimensions of food security was used in the Fault Tree model to explain the failure of the food system (Chodur, Zhao, Bieh, Reiser, & Neff, 2018). The stability

dimension was separated in order to make it a determinate factor of the outcome (Chodur et al, 2018). The model that was conduct by Chodur et al. (2018) was termed as “fault tree”, and it was designed in a way which includes an overall food system failure at the top with sub-factors that contribute to the failure underneath.

When discussing the first dimension (*accessibility*) Chodur et al. (2018) consider both the economic barriers and the physical barriers that resulted in food being inaccessible. The economic factor which is the amount of income available to buy food can be determined through adjustments in wages, unemployment, or the lack of safety nets that supplement earned income. Godfray et al. (2010) explain how in some functioning state there is an imbalance between investing in the overall economic growth or agriculture. Even though economic growth and agriculture are connected, investing in income growth might be the suitable answer to allow food purchases from different countries that hold better production capabilities. Chodur et.al (2018) projected the challenges that contributes to affording food, for example high food prices adding to it decreased net income expands the magnitude of the food issue which results in a system failure. Woertz (2011) revealed in his paper that food prices threatens the security of food in many countries and specially gulf countries. He explained the effect of the global food crisis on gulf countries and how they were able to avoid the impact

with oil prices at that time being 100\$ per barrel. However, he argues that these gulf countries in the future won't have the ability to absorb raising food prices and import food even if their oil dollars are still secure (Woertz, 2011). Woertz (2011) explains how food prices were the driving force behind the Arab Spring protests, for example in Algeria high food prices was the actual cause for the protest.

Moreover, physical barriers such as insufficient infrastructure renders the ability to access food. Godfray et al. (2010) emphasize on the imbalance issue of putting resources into national and regional infrastructure such as transportation and social and economic capital. They state that prices of fertilizers and water may increase when there is poor transportation. Woertz (2011) agrees with Chodur et al. (2018), by emphasizing on investments in infrastructure as they increase agricultural production and provides channels to access food. However, Woertz (2011) point out that such action may cause intensive implication on land rights for small-scale farmers and pastoralists.

The second dimension of food security is *availability*. Chodur et al. (2018) argue that there are two major causes behind food unavailability, they state that supply chain and food donation system are both required in order to guarantee food availability and avoid a system failure. Food supply chain can fail if there was a decline in production, distribution, or food donation. Any event that can render these subparts whether climate

events, labor deficiency, or poor resources can affect the food supply because they all depend on the same support system such as infrastructure, energy, or work force availability. Therefore, when discussing availability, the need to trace previous policies is important. During 1960s and 1970s Import Substituting Industrialization (ISI) strategies became the new wave for industrialization (Mendes, Bertella,& Teixeira, 2014), making self-sufficiency the central goal in many countries to boost economic growth (Harrigan, 2014). From the early 1970s, there was great support for agricultural sector to ensure domestic food production in a lot of Arab countries, therefore investments in agricultural sector increased along with the use of tractors and fertilizers not to mention the rapid increase of irrigation of arable land (Harrigan, 2014). However, ISI resulted in significant drawbacks and unfairness towards the agricultural sector as a whole. Mendes et al. (2014) explained how the industrial and economic development failed to occur even with the support of the agricultural sector. Harrigan (2014) argues that the agricultural sector was undervalued, due to fragile institutions and incoherent policies.

Along these lines, previous food self-sufficiency policies have caused an ecological unsustainability in many Arab countries (Woertz, 2011). Recent food price volatility has pushed food self-sufficiency back to the top priority in the policy agenda.

The term “food self-sufficiency” has different definitions. Clapp (2017) described the FAO definition of food self-sufficiency, which is “the extent to which a country can satisfy its food needs from its own domestic production”, as vague. She highlights how it’s still unclear if a country that reaches food self-sufficiency would still engage in trade with other countries (Clapp, 2017). The foregoing argument is echoed in Andersen (2009), the term food self-sufficiency doesn’t show clarity in terms of all citizens accessing enough food to meet their requirements or whether meeting economic demands. However, self-sufficiency doesn’t necessary mean food security, for example Hong Kong is not a self-sufficient country yet their population are food secured (Schmidhuber & Tubiello, 2007). Therefore, the lack of water resources among many environmental and political reasons have led countries to invest abroad in order to secure food production for their population and absorb any future food price shocks (Woertz, 2011).

However, policies that are connect to food self-sufficiency such as subsidies, tariffs, or export bans are considered by economists as costly and dangerous (Clapp, 2017). Woertz (2011) gave examples of Gulf countries that used subsidies when the Arab Spring was set in motion. Kuwait initiated a 14-month free staple food as part of a greater subsidy package (Woertz, 2011). Also, Saudi Arabia introduced a mixture of

subsidies to stop any future unrest (Woertz, 2011). Clapp (2017) however, ensures the need for food self-sufficiency, she gave an example of poor countries who rank high in food insecurity charts such as sub Saharan African countries and how these populations will benefit if they reduce their dependence on global markets. The availability of food can be seriously threatened if food prices increase on world markets (Clapp, 2017). Food self-sufficiency can be beneficial if each country pursued different policies regarding agriculture when considering their development trajectories, however they should take into consideration what resources are available to them (Harrigan, 2014). Thus, the wheat production in Saudi Arabia constitute a good example. Shetty (2006) discussed Saudi Arabia's program to achieve food self-sufficiency on wheat. She explains how Saudi Arabia used price support along with input subsidies and other incentives which resulted in agricultural growth exceeding 70% in the year between 1985 and 1991 (Shetty, 2006). This initiative has made Saudi Arabia an important wheat exporter which resulted in 2.5 million ton in 1992 and 1993 (Shetty, 2006). Later on, the government disregarded its vigorous campaign for self-sufficiency and the support of wheat due to its high consumption of water (Lippman, 2010). Lippman (2010) explained how Saudi Arabia have noticed their mismanagement of water usage, he illustrates how wheat exports have stopped along with production being reduced by 12.5% a year.

Millar& Roots (2012) discussed the availability of resources by highlighting the alarming numbers of skilled and resourced individuals that work in the agricultural and food industries in Australia. They pointed out the need for a better workforce that requires right skills and training in order to achieve growth and productivity (Millar& Roots, 2012). Moreover, food donation whether from private donors or government donors is an integral part to sustain food availability (Chodur et al., 2018). Food donations rely heavily on funding for organizations that would assist and support food purchases. Diriye et al. (2013) criticized food donations by stating that it encourages a dependency syndrome. These food assistances do more harm than good by generating the dependency effect which impacts agricultural production and market prices resulting in extreme food insecurity (Diriye et al., 2013). Regardless of the positive impact of food donations which increases food availability, yet these donations mostly rely heavily on the private sector participation which leaves the government role to only facilitate, enable, and encourage these donations (Tarasuk, Dachner & Loopstra, 2014). Large food companies share the big amount of food donations and these companies are encouraged when there are tax policies designed to motivate for such collaborative action (Chodur et al., 2018). Chodur et al. (2018) illustrate the connection between food donations and food supply chain failure as the latter may affect donations and efforts to reduce food waste. Porkka et al. (2013) used a study done by Gustavsson and

Kummu and concluded that food waste is roughly 12% of food supply and this number differ between countries as the percentage varies from 5-21%. In addition, Chodur et al. (2018) show the consequences of the failure of food donation as it may also impact small sites where food is distributed. Porkka et al. (2013) argue that even on a universal scale food supply have the potential to feed the entire population but the unequal distribution will leave a noticeable size of the population as food insecure and therefore gives an abundant amount of food to others.

The third dimension was termed by Chodur et al. (2018) as *acceptability* which shares the same concept as utilization. Acceptability encompasses the biological use of the nutrients contained in food along with the cultural influence on food. If food availability or accessibility is accomplished that doesn't necessarily guarantee acceptability. In Chodur et al. (2018) "fault tree" model, acceptability might be considered failing if nutrition is not an essential part of food supply; food is not culturally or religiously convenient, or distasteful to those who are consuming it. Andersen (2009) recognized the additional parts of the FAO definition of food security when it included two compositions: safety& nutrition and food preferences. He stated that the concept of food preference changed the perception of food security from absolute access of adequate food to access to food preferred. Chodur et al. (2018)

highlight the influence of religious and cultural identity as a force that can frame what kind of food is edible and what is not which may alter what people consume even in emergency situations. Andersen (2009) mentions that those who have equal access to food but share different preference of food can project different levels of food security. Andersen (2009) supports Chodur et al. (2018) conclusion of acceptability in terms of food preferences that are linked to religion and culture. He emphasizes on the interpretation of preferences when it's connected to food that is culturally and socially acceptable rather than a wide interpretation that connects food to households or individual preference.

Stability as the last dimension of food security was considered in Chodur et al. (2018) "fault tree" model as an outcome of a more flexible food system rather than a factor that contribute to the failure of a food system after disasters. *Stability* as the fourth dimension focuses on the preservation of food security when disruptive events occur (Chodur et al., 2018). In the "fault tree" model, Chodur et al. (2018) present potential vulnerabilities as a component to understand stability. They demonstrate how vulnerabilities such as acute weather or even continuing climate event within the food system can trigger different parts of the system which could lead to a system failure. Schmidhuber & Tubiello (2007) argue the impact of climate change on the stability of

food. Climate change have affect the world at present and it's expected to increase its severity in the future, thus making extreme events such as droughts or floods more frequent. The regional and global weather conditions are expected to bring considerable fluctuations in crop yields and local food supplies, therefore impacting the stability and food security around the world (Schmidhuber & Tubiello, 2007). For example, sub-Saharan Africa might face sever instability in food production due to the climate fluctuations that are becoming more pronounced and widely spread.

On another note, the future impact on food security can be seen through many challenges but more importantly through *climate change*. Climate change which can be observed as a fifth dimension of food security has evolved recently as a serious threat to food security. This has demonstrated serious impact on the original four dimensions of food security. Gregory et al. (2005) mentioned in their paper that climate change was proven to be one of several factors that affects food security. They stated that in a study done in southern Africa, environment was shown as one important driver by householders (Gregory et al., 2005). When discussing food production and food availability, climate change disturbs agricultural production directly and indirectly and that can be seen through changes in agro-ecological conditions along with growth rates and income distributions (Schmidhuber & Tubiello, 2007). Schmidhuber & Tubiello

(2007) revealed that changes in land suitability and crop yields are associated with changes in temperature and precipitation along with continued greenhouse emissions. Wheeler & Von Braun (2013) examined Rosenzweig and Parry's global assessment of the possible impacts of climate change on crops. Rosenzweig and Parry's simulations proved that a large scale of spatial variation among crop yields occurred across the globe. It was shown that crop yields increased in Northern Europe, however decreased in Africa and South America (Wheeler & Von Braun, 2013). Therefore, one of the biggest losses in suitable cropland due to climate change are likely to take place in Africa (Schmidhuber & Tubiello, 2007). Hanjra & Qureshi (2010) argued that repercussions on food availability may be severe in poor countries that don't demonstrate strong capacity to adapt to climate change. Climate change shows high potential of disrupting food production which leads to uneven distribution, and that is mostly feasible in arid and sub-humid tropics in Africa (Hanjra & Qureshi, 2010). Wheeler & Von Braun (2013) agree by proving that crop productivity that is likely to decline under climate change is expected to be in countries that already have high burden of hunger, thus exacerbating the problem of food availability.

Moreover, climate change has impacted food stability and food supplies, because it is considered an important determinant for future price trends. The whole food

system's stability can be triggered by climate change, as food market volatility for supply and production is expected to rise (Wheeler & Von Braun, 2013). Climate fluctuations that results in droughts and floods can be more sever and frequent in the future, which may result in reducing crop yields and the number of livestock along with productivity (Schmidhuber & Tubiello, 2007). Furthermore, climate change has affected food utilization and access to food. The ability of people to use food effectively can be threaten by environmental changes, for example changing climate conditions can launch a dangerous circle of infectious disease (Schmidhuber & Tubiello, 2007). This can result in a crucial decline of labor and productivity thus increasing poverty and mortality. Wheeler & Von Braun (2013) stressed on the importance of hygiene, as extreme weather conditions for instance droughts, floods, and high temperature can cause severe medical complications. In addition, access to sufficient food is connected to climate change in a way that when utilization is affected, which renders productivity and might increase diseases, income is effected thus compromising accessibility to food (Schmidhuber & Tubiello, 2007). Economic output is viewed by Schmidhuber & Tubiello (2007) as the strongest impact of climate vulnerability, therefore in poor countries where food is insecure potential suffering is likely to take place in their income. Therefore, accessing food is a matter of household income and of capabilities and rights (Wheeler & Von Braun, 2013).

Furthermore, agriculture is considered a source of *energy* due to its biomass production. This can be treated as a sixth dimension of food security due to the conflicting uses of biofuel as a renewable resource with food production. Securing energy has proven to exacerbate the food security problem. For example, in Asian countries, the increasing demand for biofuel creates problematic and competing situation with food and feed; this might create social unrest (Koizumi & Ohga, 2007). Wheeler & Von Braun (2013) stated that food stabilizations is challenged by demand shocks, for example bioenergy subsidies that are motivated due to energy concerns. Koizumi (2015) explained this competition of biofuel production with food and food use resources in two parts, the competition with food demands and the competition with natural and agricultural resources (Koizumi, 2015). Biofuel requires feedstock, therefore calls for the need of more land. The uses of land which reflects the demand for fiber and food is diverted due to production of biofuel (Searchinger et al., 2008). Searchinger et al. (2008) stated that the increasing demand for biofuel will increase greenhouse gases through emissions due to the land-use change. For example, corn ethanol is consuming a great deal of the U.S corn land that are harvest for grain and livestock (Searchinger et al., 2008). The emergence of flex crops has introduced a mix of concerns and interests regarding food security. The relationship between food security and biofuel was explained by Koizumi (2015) in the case of U.S. when

bioethanol demand rose, the prices of corn increased. Borrás et al. (2015) argued that this rise of flex crops has introduced a series of complications regarding land-use change.

Indeed, former discussions relating to biofuel is connected to land-use change, and farmers that were devoted to food shifted to biofuel production. However, Borrás et al. (2015) illustrated that the serious part is actually connected to crop-use change rather than land-use change, yet they are both connected. Thus, when you change the use of crop you change the use of land because it changes the objectives of cultivating the land. Distinguishing between crop-use and land-use can provide better understanding, Borrás et al. (2015) state that when the U.S changed their corn harvest land from food to ethanol their soya cultivation dropped. To fill this gap Brazilian soya cultivation increased, therefore this crop-use change in the U.S stimulated land-use change in Brazil. Yet, social and environmental harm can arise, for example Searchinger et al. (2008) state that greenhouse gases emissions resulting from corn ethanol doubled those of gasoline. Therefore, the land converted determines the intensity level of greenhouse emissions. Godfray et al. (2010) emphasized on policy decisions that were initiated to produce biofuels on agricultural lands which increased the pressure on food competition. It has been stated that around 14 million hectares of farmland is used for

biofuel purposes (Escobar et al., 2008). Koizumi (2015) argues that when demands of biofuel rise feedstock demands increase as well, thus competing with food use which can impact the national food consumption. He also states that this agricultural competition can have an unfavorable effect on agricultural commodity markets which threatens the stability of the food system. Escobar et al. (2008) give a clear statement regarding biofuel production, they state that even though biofuel production can come with many advantages however there are many concerns. These concerns will result in negative environmental impact and these include excessive use of water, forest destruction, and decreasing food production.

Nevertheless, *water shortage* is a serious complication that hinders crop production and food security. Water scarcity wasn't a serious problem back in 1955, in fact only seven countries were listed as water stressed countries (Misra, 2014). However, Misra (2014) stated that by 1990 this number increased to twenty countries and by 2025 an additional ten to fifteen countries will be expected to be water stressed. Further, one of the most affected areas of water shortage is the Middle East and North Africa region (Shetty, 2006). Misra (2014) argues that most of the Arab countries don't have any primary source of water, as they lean on the international water bodies for their needs. The MENA area is described by great population growth, high food

deficits, inconsistent income levels, and constrained natural resources (Shetty, 2006). Misra (2014) projects how these Arab countries rely on natural precipitations and water conservations, therefore by obtaining the least natural water resources these areas will be severely affected. In addition to water being scarce, the rivers are highly inconsistent and hard to manage. For example, the Nile river Basin where 190 million people live in countries such as Egypt, Uganda, Sudan etc. are among the leading poorest countries which makes it hard for them to comply any strategy of water management (Misra, 2014).

Besides, even though water is crucial for agricultural purposes yet the increased demand of water by non-agricultural uses such as biofuel uses or urban and industrial uses have put great pressure on water availability to secure the demands of food (Hanjra & Qureshi, 2010). For instance, Australia is considered to be one of the biggest food producing countries, however recent droughts declined its food production and agriculture (Hanjra & Qureshi, 2010). Around seventy percent of Australia's water is directed to agricultural and food processing uses, yet due to water scarcity the management of water has been examined as a huge issue in Australia in last 20 years (Millar & Roots, 2012). In 1920, the agricultural sector in Australia was at its prime, however due to over allocation of water specially in the Murray Darling Basin to uses in

town, industry, and irrigation there was severe water loss (Millar & Roots, 2012). Thus, resulting in a forty percent decline in agricultural production such as rice and cereals (Hanjra & Qureshi, 2010). Furthermore, with the impact of climate change, water is under more pressure particularly because climate change puts huge stress on the hydrological cycle along with possible precipitation decline in many parts of the world (Kang et al., 2009). Thus, Gulf countries are reorienting their domestic agriculture toward saving water technologies so that they get more crops for less water usage (Woertz, 2011).

On the other hand, the food crisis that has been and still is affecting the globe, initiated an agro-investment or *land grabbing* approach by countries to secure a bilateral access to food production abroad. Acquiring lands, or as some refer to as land deals, are considered a major part of most states in the past (Boamah, 2013). However, because of the emergence of modern sovereign states the controversy of land deals have been buried, yet during the twenty first century the concept surfaced again but with greater intensity which was represented as land grabbing or land transaction (Boamah, 2013). Rulli et al. (2013) argue that due to the increasing population growth and enormous demands on food, some corporations and governments are pushing for intensive investments in agricultural land. Since 2005, land deals have seen dramatic

increase resulting in a peak by the year of 2009 (Rulli et al., 2013). This peak was a result of the 2007-2008 food crisis, where food prices increased leading to a new form of colonialism that was termed as “land grabbing” (Rulli et al., 2013). Land grabbing is noticeable in underdeveloped or developing countries, yet regardless of their impoverished needs these investments are exploiting the population’s environment not alone their capital (Carroccio et al., 2016). Yet, gulf countries were highly supportive of foreign- agro investment, as they promise to provide the capital in the targeted countries that hold land and labor (Woertz, 2011).

In fact, 47% of African land is being grabbed and 33% of Asian land as well (Rulli et al., 2013). Woertz (2011) highlighted how small scaled farmers are affected by these investments, he explains the rights that these people lose by the unfair deals that large projects provide in terms of small compensations. Martin-prével (2014) criticizes the World Bank stand in promoting private investments. She illustrates how these promotions targeting investments in agriculture have caused millions of hectares of land grabbing in the South (Martin-prével, 2014). Regardless of this, land deals are considered inherently positive as they can provide benefited outcomes for the host countries, thus establishing development opportunities and creating a win-win result (Boamah, 2013). This narrative of a win-win scenario that all major actors involved can

have mutual benefits is neglecting local communities from their fundamental assets (Martin-prével, 2014). In fact, in Sudan and Ethiopia where numbers of gulf countries reported their agro-investments proves a clear example of media hype and not enough developments on real grounds (Woertz, 2011). Thus, taking away local's customary land rights, jobs, and opportunities (Woertz, 2011).

3.1 Setting the Context: The Green Desert (KSA)

In order to understand the food security situation in Saudi Arabia, this section illustrates the issue under four pillars. These pillars are food availability, accessibility, utilization, and stability.

Food availability in Saudi Arabia is connected to different factors. These factors comprise of domestic production or importation, and stock levels. Yet, these two factors are linked to different elements such as water & energy availability, agricultural policies, and investments abroad. The agricultural sector in Saudi Arabia noticed an incredible boom from 1970 till 1990. Saudi agriculture reached its highest production in 1993, this is due to the country's increased GDP which was associated with high oil revenues. Kim and van der Beek (2018) explained how, at that time, the agricultural

strategy was focused on self- sufficiency. Thus, the Saudi government started backing wheat and barley production through high subsidies. The wheat production increased incredibly from 1980 till 1990, by reaching approximately 4.1B tons in 1992 (Pieters and Swinnen, 2016). Similarly, the production of barley had grown from 0.4B tons to 1.4B tons (Pieters and Swinnen, 2016). Even though KSA became an exporter of grain, the repercussions have resulted in pressuring the country's water resources. Saudi Arabia is considered one of the driest and water stressed countries in the world (Selvanathan, Selvanathan, Albalawi, & Hossain, 2015). Pieters and Swinnen (2016) discussed how Saudi Arabia fulfills its water demands through renewable and non-renewable water sources. The production of agricultural products such as, but not exclusively, wheat and barley have depleted the country's non-renewable water resources. Therefore, Saudi Arabia have phased out the subsidies for these two crops. Yet, this resulted in farmers switching to produce animal feed crops such as alfalfa.

Further, the replacement of wheat and barley to alfalfa have increased the water consumption to three times more. Kim and van der Beek (2018) stated that the production of alfalfa turns out to be, in recent years, the largest in KSA. In 2015, alfalfa accounted for 75 % of the agriculture water resources. However, the governments have also revised the animal feed production and decided to stop producing forage by 2019.

Thus, the previous push of agriculture production has led the country to a water shortage challenge. Saudi Arabia is considered a water stressed country. KSA have been heavily dependent on desalinated water due to intensive extraction of groundwater. Yet, this have imposed great pressure on energy input. The process of desalination requires high energy consumption, thus high cost. Grindle, Siddiqi and Anadon (2015) explained the mismanagement of water, especially ground water, which resulted in constructing irrigation systems which also necessitated the use of energy input. The inseparable link between consumption of energy and water have impacted the food production in Saudi Arabia.

Consequently, the country is now highly reliant on food importation. This dependency on agricultural and international food markets puts KSA in a vulnerable position when it comes to price shocks. Pieters and Swinnen (2016) stated that 90 percent of Saudi Arabia's cereal consumption is imported. The 2007-2008 crisis, which resulted in high agriculture commodity prices, have led the country to strategically approach different solutions to deal with such shocks. Saudi Arabia, in order to enhance its food availability, have diversified its import sources through trade agreements as well as investments in agricultural land abroad (Kim and van der Beek, 2018). Thus, by recognizing the scare resources, Saudi Arabia have initiated the King Abdullah Food

Security Initiative in order to assist Saudi investors with their overseas investments (Grindle et al., 2015). The operations of agriculture investments abroad, through this initiative, are associated with restrictions regarding exportation to Saudi Arabia (Pieters and Swinnen, 2016). Approximately 50 percent is required to be shipped back to the home country (Pieters and Swinnen, 2016). Food and agricultural companies such as Almarai, SALIC, and AlSafi have invested in foreign countries to re-export back to KSA water-intensive crops such as wheat, forage, barley and so on (Pieters and Swinnen, 2016). Moreover, Al Daffaa (2017) explained how Saudi Arabia in order to accomplish a specific level of food security, a strategic stockpile of food was necessary to meet the demand for a minimum of six months. Stock levels are achieved, in case of emergency situations, through domestic production, foreign investments and imports (Al Daffaa, 2017). KSA started securing food stocks due to witnessing disturbing events in the Middle East which displayed the region as unstable.

Additionally, food accessibility encounters the physical and socio-economic access to food. The World Bank has estimated the Saudi population to be approximately 35 million in 2020 (WorldBank, 2020). The General Authority for Statistics (2018) have stated that the average income per household in 2018 increased by 8.9% since 2013, reaching approximately 14,823 SAR. However, the average expenditure is around

16,125 SAR. Therefore, the income factor demonstrates a great feature when discussing food accessibility. Bashir and Schilizzi (2013) illustrated the importance of income; high income households indicate high chances of being food secure. Furthermore, Lovelle (2015) explained the link between income and urbanization. Saudi Arabia's population is highly concentrated in urban cities constituting 83% in 2014, due to better living standards (Lovelle, 2015). Urbanization combined with higher income imposes increasing demands on food products (Lovelle, 2015). However, this attracts large retail outlets which increases access to import supplies. On the contrary, food prices always face the threat of high global commodity prices. Saudi Arabia have witnessed the increase of food prices in years such as 2007, 2013, 2014, and 2018. Jadwa Investment (2019) reported that such increase in prices over the years is due to changes in consumption patterns around the world, such as China and India, higher income as well as higher global commodity prices. Also, the implementation of VAT and reforms in prices of fuel and water have triggered the rise of food prices (Jadwa Investment, 2019).

Further, KSA's economic development noticed a rapid change since 1970. Madhi and Barrientos (2003) explained how Saudi government proceeded with development plans which was directed to all aspects of the economy. When KSA

started gaining huge revenues from oil exportation; the government increased its investments in infrastructure projects and public services (Madhi and Barrientos, 2003). The government development approach was necessary in order to connect markets, internal and external, by creating the needed agencies to administer the process. However, this resulted, now, in creating the dilemma in the Saudi labor market. Alotaibi (2017) discussed how this dilemma is connected to high employment of foreign labor force. Madhi and Barrientos (2003) explained the inflow of foreign labor was facilitated by Saudi's development approach. Since foreign labor assisted the private sector in help building the Saudi infrastructure; Saudi citizens were filling the governmental jobs. Hence, at that time, government job's wages were recognized to be inadequate. Thus, subsidies in the form of free health care, housing loans, and education were provided by the government (Alotaibi, 2017).

Besides, the labor force has witnessed an annual growth rate, in the public and private sector, of 6.9 percent between 2000 and 2015 (Madhi and Barrientos, 2003). Alotaibi (2017) discussed the private and public sectors' labor force, which increased from 5.1M to 11.6 M in the period of 2000 and 2015. However, the unemployment rate in Saudi Arabia is still relatively high. In 2018, the General Authority for Statistics in Saudi Arabia declared a 12.9% unemployment rate, however in 2019 Saudi Arabia

managed to lower the percentage to 12% (General Authority for Statistics, 2019). Additionally, two important tactics helped in dealing with the unemployment challenges, and these are Saudisation and Nitaqat. Saudisation was illustrated by Madhi and Barrientos (2003), the policy insures an annual commitment by private companies who are hiring more than 20 workers to lower their foreign labor by a minimum of 5%. On the other hand, Nitaqat is a program under the Saudisation policy. This program classifies companies into 4 categories using a rating system. The four categories are associated with colors such as platinum, green, yellow, and red. The aim was to increase the employment of Saudis in the private sector (MLSD, 2011). The platinum and green categories demonstrate compliance, while the yellow and red demonstrate non-compliance (MLSD, 2011). Non-compliant companies will face limitations on their business operations. Therefore, the government's respond to deal with such challenge have pushed the unemployment rate to decline, yet the aim is to reach 7% unemployment rate by 2030 (MLSD, 2011).

Furthermore, food utilization combines sufficient diet, clean water, and nutritional safety. These interconnected elements demonstrated the non-food contribution to food security. Moradi-Lakeh et al. (2016) conducted a multilevel survey in Saudi Arabia, in 2013, on people aged 15 years or above. This survey explains food

consumption patterns due to the lack of dietary patterns for Saudi Arabia. Moradi-Lakeh et al. (2016) explained that the dietary practices are demonstrated to be poor; only a small percent of Saudi Arabia's population met the dietary guideline recommendations. Selvanathan et al. (2015) illustrated the changes that took place in KSA in terms of dietary habits. They clarified that these changes were associated to urbanization and socio-economic conditions (Selvanathan et al., 2015). The adoption of global practices in terms of food consumption led to the switch of the previously accepted dietary habits of low-fat and high fiber to higher fat and protein. Moradi-Lakeh et al. (2016) express great concerns regarding young adults', merely the age of 15 to 24, consuming patterns of processed foods and sugar-sweetened beverages (SSB). Therefore, the consumption of SSB and processed meat were demonstrated to be higher while fruit, vegetables, and nuts are lower than the dietary guideline recommendations (Moradi-Lakeh et al., 2016). Musaiger (1993) stressed on the fact that consumption of rice, wheat, meat, sugar, and fat was highly influenced by policies that are related to food subsidies. This has resulted in higher intake of certain food type that is much greater than what the FAO considers to be healthy (Selvanathan et al., 2015). However, older people show better dietary behavior in terms of more consumption of vegetables and fruit along with lower consumption of processed foods (Moradi-Lakeh et al., 2016). This can be correlated to their perception of being more vulnerable to risks of disease and death. Selvanathan et

al. (2015) illustrated the additional health risks associated to higher food intake. They stated that the changes in consumer behaviors towards pre-prepared food is due to high income and high food purchases. Darwish et al. (2014) further discussed pre-prepared food, by illustrating how their study of 300 mothers in the Saudi Eastern province area resulted in 60.3 percent of mothers being overweight or obese.

Further, water demands, as mentioned earlier, are fulfilled through non-renewable and renewable water sources. Chowdhury and Al-Zahrani (2015) stated that 90 percent of the desalinated water satisfies the demand of cities such as Makkah, Madina, Riyadh, and the Eastern province. The desalinated water is merely mixed with groundwater before being delivered to the consumer (Chowdhury and Al-Zahrani, 2015). Also, Elhadj (2004) discussed how 50 percent of the desalinated water satisfied the needs of the Saudi population, leaving the country to cover the shortage with groundwater. Chowdhury and Al-Zahrani (2015) stressed on the risk of groundwater contamination, they stated that discharge of waste water contribute significantly to ground water quality. Thus, treatments of waste water can reduce such risks. KSA uses a fraction of its treated waste water for agricultural and industrial purposes, however maximizing treated waste water may contribute as a potential source for supply

(Chowdhury and Al-Zahrani , 2015). Therefore, a more sustainable water management can alleviate the pressure of generating desalinated water to secure supply.

Food stability concentrates on the availability and accessibility side of food security. Meaning, that the population should always have adequate access to food. Saudi Arabia has reconsidered its concerns about food security after global food prices increased in 2007-2008 and 2010-2011. The country's arid climate and water scarcity affected the production of agriculture to supply food for its population. Therefore, Saudi Arabia is heavily dependent on import, this was further explained by Selvanathan et al. (2015). They stated that imports of rice, wheat, and barley reached approximately 1.3M tones, 3.5M tones, 8.5M tones respectively (Selvanathan et al., 2015). Also, in 2013, Brazilian meat constitutes 79 percent of Saudi imports (Selvanathan et al., 2015). The rising dependency is justified by the need to alleviate Saudi Arabia's scarce resources.

Besides, dry land countries such as KSA, which demonstrate diminishing precipitation, are predicted to get worse due to climate change (Berdikeeva, 2018). Thus, the government support of overseas' investments have inspired the goal of achieving food security. Hanieh (2018) discussed AlRajhi Group and how it operates thousands of acres of global farmland. He stated that the company is deeply integrated in the value chain, which provides it with great control when it comes to exporting its

product back to KSA. Hanieh (2018) argued that the presence of vertically integrated businesses, in agriculture, is firmly associated with Saudi Arabia's obvious decision to put such agribusinesses at the core of its food security approach. However, this have raised global concerns regarding the issue of land-grabbing. The issue of food security against food sovereignty circulated around the proliferation of offshore acquisitions made by Saudi companies (Selvanathan et al., 2015). Grindle et al. (2015) illustrated the violent protest that was linked to a Saudi company. This violent unrest was a result of excluding the Ethiopians from long term leasing decisions. Such problems occur due to lack of proper laws or agreements in the hosting country in relation to foreign investment. The encountered mistrust and challenging security and infrastructure have shifted Saudi's foreign agri-investments from poor to rich countries such as Australia, USA, Canada and so on (Berdikeeva, 2018). Grindle et al. (2015) also explained that the benefits of such investments cannot be undermined, because in some cases they do boost the economy of the hosting country.

Besides, recently KSA have started implementing changes in the agricultural sector in order to adopt a sustainable agriculture approach. Baig & Straquadine (2014) explained that measures such as reduction of losses in irrigation water, enhancing water uses, and employing good agronomic practices have been adopted. They also stressed

on the fact that additional training programs and encouragement to acquired higher education in agricultural fields can also contribute to the environmental and social sustainability (Baig & Straquadine, 2014). Therefore, the present situation of securing food, whether through limited production or imports, seems to some extent feeding the Saudi population. Yet, a combination of alternative agricultural practices to produce food with less water, private initiatives, and policies is needed in order to continue supplying its food demand.

In conclusion, this chapter of the literature review provided the needed background on the situation of global food security issues and specifically in Saudi Arabia. The themes revolving the issue of food security are considered relevant to the study; they provide the necessary space to discuss *Almarai* and *SALIC*'s capabilities.

CHAPTER 4

CASE STUDY ONE: ALMARAI

The Saudi dairy company Almarai is prominent in Saudi Arabia and the GCC. Their headquarters are based in the capital city Riyadh. The company started in 1976 under the leadership of His Highness Prince Sultan Al Kabeer as a joint venture between him, the Savola group and the Muhanna family (Sadi & Henderson, 2007). His Highness Sultan Al Kabeer notice the potential of transforming the traditional dairy farming in KSA so that it can meet the demand of the domestic market. Along this line, many projects were developed, thus turning what started as processing of fresh laban and milk into state-of-the-art processing facilities and modern dairy farms (Singh & Hagahmoodi, 2017).

in the 1990s, the company entered a restructuring phase by switching from a decentralized to a centralized structure (Sadi, 2014). Reinvestments in the company also was redirected due to the recognition of its strategic competitive advantage, which resulted in undertaking a major investment program with a total capital expenditure of 1100 million SAR (Almarai, 2012). Almarai is one of the largest vertically integrated dairy company in the world, its reputation exceeds by the unmatched quality they offer. Thus, by 1991 the company was considered a liability among many reasons but

specially for being the source of half of KSA's fresh milk and the largest food exporter (Sadi & Henderson, 2007).

Furthermore, in 2005 Almarai floated 30% of its shares making it a joint stock company, after which the company was listed in Saudi's stock exchange (Sadi, 2014). In addition, since 2007, the company embarked on a series of acquisitions and joint ventures to expand its product portfolio, thus creating the bakery, poultry, and infant nutrition segments. At present, Almarai owns six farms across KSA with approximately 110000 cows resulting in 674 million liters of milk production (Almarai, 2012).

The company's mission is to always top the expectations of their customers by giving high quality food products and remarkable customer services (Singh & Hagahmoodi, 2017). In addition, its vision is to always be the preferred option in food products along with the promotion of good health, nutrients, and wellbeing (Singh & Hagahmoodi, 2017).

4.1 Market Share and Product Segments

Almarai main product segments are dairy, juice, bakery, poultry, and infant nutrition. The dairy products have been and still are at the heart of the company's

vision. This segment covers fresh milk, long-life milk, yoghurt, cream, butter & cheese, and ghee (Almarai, 2012). The juice segment is an additional important group in the company's portfolio. Almarai offers fresh and long-life juices with a range of more than twenty flavors. Moreover, the category of bakery was added in the aim of product diversification and it remains essential to the company (Almarai, 2012). Poultry was introduced in 2009, and this division launched a brand called ALYOOM that is committed to deliver and produce high quality poultry product (Almarai, 2018). Finally, the infant nutrition segment works on manufacturing and distributing infant products with the capacity of twenty-five million liters of liquids and twenty thousand tons of powder (Almarai, 2018).

Furthermore, the largest consumer base in the region is concentrated in Saudi Arabia. KSA includes two-thirds of the GCC population, making the consumption of milk products significantly high. Almarai holds 57% of market shares in the GCC when it comes to fresh milk (Almarai, 2018). Above all, the dairy market in KSA is fragmented, making room for only few large companies while leaving little for small businesses. However, these small businesses have demonstrated a serious potential for future consolidation. In addition, the juice category represents 17% of the GCC market share (Almarai, 2018). Almarai market share in this segment continues to be strong

however the market place prevails to be fragments and that is because of low entry barriers. The bakery segment has demonstrated a leadership position in Saudi Arabia by owning 65% of the market share (Almarai, 2018). Finally, the poultry section represents about 38% value share in the Saudi market, meanwhile the Nuralac brand of the infant nutrition segment reached 4% of the Saudi market share. Thus, demonstrating some challenges in the local market (Almarai, 2018).

4.2 Distribution and Sales Across Segments

The company has invested heavily on its distribution facilities in order to meet its growing production capacity. They have established their unique distribution network which delivers to approximately 42,000 customers on a daily basis (NCB Capital, 2009). The sales division in Almarai deals with managing customer's relationship in order to make sure that the products are available for the company's customers. Moreover, there are certain distribution infrastructure to ensure the delivery of products in good conditions and these include tanker fleet, cold stores, trailer fleet, fleet workshops along with regional offices which covers all GCC and KSA by delivering to around 127 depots (AlRajhi Capital, 2014). In the GCC, there are several distribution centers that are managed via subsidiaries. Almarai have control over

distribution in UAE, Oman, Kuwait, and Bahrain, however in Qatar the agency agreement was terminated (PWG, 2019). Almarai's distribution channel is considered ahead of its competitors in the region, in addition the company exports its longer shelf life products to Jordan, Yemen, Lebanon, Algeria and morocco.

4.3 Investments and Strategies

Almarai company went through different stages of strategies within certain period of times under each include several investments that justifies their leadership position and their substantial growth potential, and this can be illustrated in five stages.

The first stage is defined as the initial growth. The period between 1977 and 1990 marks as the starting point that recognized the rapidly growing needs of KSA which led the company to cater its potential growth. Almarai started developing some projects that began with fresh milk and laban processes and later grew into processing plants and dairy farms (AlMarai, 2005). The company's name started to gain massive recognition because of its steady supply along with quality precision all under a proper timely manner. This period noticed considerable investments in brand development. Thus, by the end of 1990 Almarai became a well-known brand which enabled it to

construct further development and growth (AlMarai, 2005). Almarai brand turned to be a key asset that supplied products via 26 distribution storehouses across the Gulf region (AlJAZIRA CAPITAL, 2012). Later on, the fresh products of milk and Laban were expanded to include yoghurt and cream.

The second stage marks the revision of investments and structure, and that was between 1991-1997. Almarai have succeeded in being a market leader and that is obtained by establishing a trading company called Almarai Company Trading Limited (AlMarai, 2005). The company have also commissioned a Central Processing Plant that has the capacity for new and existing products. Moreover, four dairy farms were built with the installation of modern day technology, each standing the capacity of approximately 10 000 animals (AlJAZIRA CAPITAL, 2012). In addition, rebuilding the distribution depots on existing and new sites were accompanied with latest standards. Almarai invested to install a powerful distribution system along with undertaking measures to control cost. The key milestones that this stage witnessed have laid the foundation for new product developments and volume growth.

Furthermore, the third stage is directed to growth & employing the competitive advantage which is from 1998 till 2005. This era witnessed the company's market presence increase as well as stretching its product by adding new dairy desserts, fruit

yoghurt, UHT milk, and fruit juices (AlMarai, 2005). As a matter of fact, by becoming a low-cost producer, Almarai was able to improve its competitive advantage. In 2003 the company cut its prices to nearly 33%, however the quality of their product didn't decline (AlMarai, 2005). This is because of the advanced technology Almarai had along with administrative methods established to secure the brand value and reputation by serving the best quality (Sadi & Henderson, 2007). The price war did impact small businesses due to difficulties to compete with matching the prices of the big leading companies.

In addition, stage four focuses on the geographical expansion and Acquisitions which was between 2005- 2017. In late 2005, the company has built the second Central Processing Plant (CPP 2) in order to produce adequate processing capacity, also in 2017 the third Central Processing Plant (CPP 3) was opened in order to meet the needs of local and regional demands (Almarai, 2018). However, since 2006 Almarai have embarked on a series of strategic acquisitions, joint ventures, and alliances to support its operation. The acquisition of Western Bakery indicates the company's diversification approach to introduce the bakery segment. The Brand L'USINE and 7DAYS was a result of a joint venture between Almarai, Olayan and Chipita which formed the Modern Food Industries adding such product lines to Almarai's portfolio (Almarai,

2018). The company has six production facilities distributed between Western Bakeries and Modern Food Industries (Albilad Capital, 2016). The investment move towards the bakery segment proves to be valuable due to the consideration of bread, cake, and puffs as complementary products for the dairy business.

Another notable acquisition is the Hail Agriculture Development Company (HADCO). This acquisition has widened the company's focus by including poultry farming, in addition to nurturing the bakery section due to the availability of eggs. Also, Almarai owns 21.5% shares in Pure Breed which was the result of acquiring HADCO, later on the company gradually increased its shares to 93.5% by 2019 (Almarai Company, 2019). Furthermore, in order to target the non-GCC juice and dairy markets, Almarai have established a joint venture with Pepsi Co. to set up the International Dairy and Juice Limited (IDJ) (Almarai, 2018). This formation was in 2009, back then Almarai owned 48% stakes in the joint venture leaving Pepsi Co with 52%, however by 2012 the company has increased its shares up to 52% (Almarai, 2018). Besides, Almarai also acquired two entities, Tebaa which is a Jordanian dairy company and an Egyptian dairy company called Beyti. The aim of the acquisition is to expand the company's operational coverage to the MENA region (AIJAZIRA CAPITAL, 2012). Moreover, Almarai entered the market of infant nutrition by creating a joint venture

with Mead Johnson called the International Pediatric Nutrition Company (IPNC). Almarai have strengthen its position by becoming the only local manufacture of infant formula in the Middle East (Almarai, 2018).

Finally, other investments include horticulture and arable lands. Almarai has acquired its first arable land in North America in 2016 due to support the requirements of animal feed. Another agricultural acquisition was in Argentina, Almarai gained control of Fondomonte in order to develop alfalfa for the company's animal feed (Almarai, 2018). Along these lines, the arable assets were necessary because of the unstable commodity prices which affects the company in terms of feed cost. Thus, the investments in arable land and horticulture is demonstrated to be complementary to Almarai's operation even though their contribution to the revenue might be limited.

Moreover, the last stage points out the future blueprint from 2019 and onward. Almarai's obtained 100% shares in Premier Foods in 2019, which is a manufacturer of value-added poultry and meat products in Riyadh (Almarai Company, 2019). Premier Foods is engaged with food services across the Middle East, therefore Almarai's investments regarding Premier Foods enhances its extension into foodservices channel. In addition, Almarai altered its strategic direction by focusing on a new five-year plan. The plan includes adopting a greener energy approach, substituting existing assets,

enhancing production capabilities, improving innovation and enhancing product development along with its transportation and distribution methods. The company's capital investment for the next five-year plan is 7.1 billion SAR and this will be funded primarily through Almarai's operating cash flow (Almarai Company, 2019). Thus, the focus in this stage was shifted from expansionary investments towards more sustainable and efficient investments.

4.4 Key Themes: A Three-Strip Approach

Almarai's strategies and investments can be further illustrated by grouping what have been established into key themes and these are vertical integration, horizontal expansion, and geographic expansion.

4.4.1 *Vertical Integration*

Vertical integration is the force behind Almarai's presence in the region. The company is involved in every stage of the value chain, thus making it powerful when it comes to exerting control over costs. Accordingly, investments in farms, animal life,

manufacturing process & facilities, and packaging & distribution have demonstrated the company's commitment to brand development. Almarai invested to own six large farms in order to secure the raw materials that are used to produce dairy products. In addition, because of the severe climate of the Kingdom of Saudi Arabia, Almarai farms are invested to include animal housing and milking rooms next to sand-yards along with animal feed being brought to the cows. Further, the investment to establish the three Central Processing Plants (CPP1), (CPP 2), and (CPP 3) consolidated Almarai's distribution network. These Plants are completely automated, covered with advanced technology equipment, thus forming the heart of the company's extensive network of distribution (Almarai, 2018). The milk that is being produced at the farms is transported to the plants through tankers, these tankers and trailers are owned by Almarai.

Furthermore, investments in packaging serves as a unique strength for Almarai, since large retail units are expanding, the demand for branded products and packaging is growing due to the convenience of shopping all the weekly requirements in a single shop. These vertical investments applied by Almarai gives it control over composition, quality, and timing of the milk supply. In addition, Almarai has acquired 9834 acres of land in Arizona, USA, and 79073 acres in Argentina via its subsidiaries Fondomonte

(Almarai, 2018). Fondomonte Argentina and Fondomonte Arizona are subsidiaries for Almarai . Their creation was to secure animal feed from overseas, the two subsidiaries validate the strategy of maximizing vertical integration by exporting forage from its farms to KSA. Along these lines, Almarai have employed their vertical involvement to many of its segment. For example, the poultry category illustrates the replication of the dairy model. Sizeable investments were made to create a strong poultry value chain which is vertically integrated. By viewing Almarai's involvement from production to distribution and packaging and everything in between its very clear that it presence demonstrates the importance of the high vertical integration theme.

4.4.2 *Horizontal Expansion*

Under horizontal expansion, Almarai directed its investments and strategies towards new business categories. The acquisition of Western Bakeries and its subsidiary International Baking Services (IBS) has introduced the bakery segment in Almarai's portfolio in 2007. Western Bakeries is involved in bread and other bakery items production. However, IBS is involved in bakery equipment and machinery, the retail trading and wholesale, and food catering. By establishing this milestone towards diversification, Almarai also entered a joint venture with Olayan and Chipita to form

Modern Food Industries (MFI). This joint venture established the brand L'usine which includes pastries, cakes, bread, and maamoul (Almarai, 2012). The other brand under MFI is 7Days which includes croissant, wafers, and swiss rolls. Almarai's investments in this segment covers bakery facilities, innovative products, and distribution channel. The bakery sector has rewarded Almarai with positive sales growth that reinforced their position and market leadership (Almarai, 2012). In 2013 the sales of the bakery sector reached 33.6% growth, also in 2018 the sales of bakery reached 1.7 billion SAR (Almarai, 2018). This strategic move towards bakery was considered valuable due to the heavy consumption of bread in Saudi Arabia. KSA is considered among the world's top five in bread consumption per-capita, thus bread sales accounts for 66% of the whole bakery volumes (Almarai Company, 2017).

Moreover, Almarai in 2009 showed their interest to enter the poultry market. The acquisition of HADCO was beneficial to diversify Almarai's portfolio along with pushing its growth above and beyond any of its competitors in the market. HADCO provides Almarai with access to fresh chicken, which is an important item that is highly consumed among Saudi population. HADCO's acquisition is recognized to be positive because it's one of the biggest providers of fresh chicken and this sector will consolidate Almarai's strong leadership stand. The entry into poultry through HADCO

will immune Almarai from international competitors and that is because of cultural and religious obligation that favors choosing halal meat. In addition, the strategic interest behind HADCO is related to the land assets that will value Almarai. HADCO in 2009 owned 35000 hectares in Saudi Arabia, approximately 34% of that land is considered to be actively cultivated crops such as wheat, corn, and alfalfa, another 17% is for other crops (Credit Suisse, 2009). Besides, in northern Sudan, HADCO locked a land lease for 48 years that makes up 9238 hectares (Credit Suisse, 2009). Moreover, HADCO associated Almarai with 21.5% shares in Pure Breed, which is a local company that focuses on grandparent farming of poultry (Almarai Company, 2019). Pure Breed holds a capacity of producing 5 thousand kilograms of chicken breast meat annually (Almarai Company, 2019). Almarai slowly increased its shares in Pure Breed in order to further integrate and back up the supply chain of its poultry segment. HADCO's acquisition exposed Almarai to a great deal of expertise of large scale farm management with prominent cultivation of key crops. Thus, situating Almarai to be a driving force in executing the rising demand of Saudi Arabia.

Further, in 2010, Almarai decided to introduce the segment of infant nutrition to their portfolio and access the infant nutrition market. The first regional plant was constructed at Al Kharj, and it started functioning in 2012. A joint venture with Mead

Johnson established the International Pediatric Nutrition Company (IPNC), which offered the infant formula Enfamil and Enfagrow (Almarai, 2018). Later on, Almarai took over the control of IPNC, therefore securing a robust platform to grow its new segment of infant nutrition all over the GCC and North Africa. The company introduced its own proprietary brands which includes Nuralac and Nuralac Plus. In 2018, the operating profit level of the infant category has broken even, however the local market is considered challenging for Almarai due to 50% of market shares dominated by major players (Almarai, 2018).

4.4.3 Geographical Expansion

Under geographic expansion, Almarai's has directed its investment path beyond the GCC. The establishment of a joint venture with Pepsi Co. to create the International Dairy & Juice Limited (IDJ) explains Almarai's purpose of accessing non-GCC markets. The joint venture was established in 2009 with Almarai owning 48%. However, as mentioned earlier, by 2012 Almarai have raised their percentage to 52% (Almarai, 2012). IDJ was an investment via Almarai Holding Company W.LL, yet later it was changed to subsidiary. The cooperative interaction from IDJ have benefited Almarai in terms of distribution channel, knowledge, and skills of Pepsi Co. In addition,

Almarai Holding Company W.L.L purchased in Jordan 75% of Teeba (Vision Investment Services Co., 2009). Teeba is recognized as one of the top competitors in Jordan. It is engaged in the Jordanian market and handles juice and dairy products. This acquisition gives Almarai greater geographic exposure due to the cooperative gain and benefits offered from Teeba. Later on, Almarai Holding Company W.L.L transferred its shares to IDJ, which is the joint venture that was created earlier with Pepsi Co.

Another significant acquisition is Beyti, which is a dairy farm located in Egypt. Almarai have acquired 100% of Beyti, the Egyptian company is specialized in juice and dairy production along with having sizable agricultural and dairy farms (Vision Investment Services Co., 2009). However, contrary to Almarai, Beyti depend on third party suppliers of milk in order to produce its dairy brand. Likewise, the shares of Beyti was also transferred to IDJ to make sure that IDJ is consolidated in the African market. Besides the company's acquisition of Premier Foods further supports Almarai's poultry division along with boosting the company's engagement in the foodservice channel. Premier Foods exports to approximately 14 countries with more than 30 food brands, thus sets Almarai's footprint in the Middle East (Almarai Company, 2019).

4.5 Conclusion

Almarai Company have transformed the traditional dairy farming in Saudi Arabia. The company is considered one of the largest vertically integrated company in the world. Since its establishment, Almarai have positioned itself as a leader in the Saudi market with a recognizable reputation and production across the GCC and the Middle East. The company have been restructuring its investments and strategies which resulted in expanding the portfolio to include juice, bakery, poultry, and infant nutrition. In this respect, Almarai went through different strategic phases which allowed the company to penetrate different markets and expand its operation geographically. The company's expansion that was driven by acquisitions and joint ventures have consolidated Almarai's operational success. Thus, placing the company in a controlling position with large market stakes in many of its operational area.

CHAPTER 5

CASE STUDY TWO: SALIC

In 2009, a royal decree issued the establishment of Saudi Agricultural and Livestock Investment Company (SALIC). SALIC is a joint stock company owned by the Public Investment Fund of Saudi Arabia with a paid-up capital of 800 million dollars. The company headquarter is located in Riyadh, KSA. SALIC has operated with a mandate that includes a double-fold since 2012. One, dealing with food security for KSA through strategic investments in livestock and agricultural production along with ensuring a secure supply chain. Two, aims for a five or six percent returns from these investments for its stakeholders. In addition, SALIC's activity includes the investments in countries that enjoy competitive advantage in order to contribute to selected food goods production and their availability for export markets.

The company targets 12 product sections and these include barley, rice, wheat, corn, sugar, soybean, vegetable oils, milk product, green fodder, aquaculture, red meat and poultry. The reason behind such targeted categories is the increasing consumption of such food, which shows the importance of these products in KSA and many regions. SALIC's strategy focuses on investments in agricultural field along with trade and distribution in several geographic areas. Therefore, such investments include projects in

countries that exports one or more of the selected food goods. Also, forming alliances and contracts with many specialized firms in order to join their projects as well as their business activities. Further, the company's mission concentrates to develop and set up global agricultural investments that is responsible and sustainable. Thus, its vision is to become an international leader in livestock and agricultural investments.

5.1 Investments and Strategies

SALIC's investments and strategies are led by the twelve selected products that were mentioned earlier, along with the host countries' strength in relation to those products. In 2013, SALIC invested to establish United Farmers Holding Company (UFHC) with Almarai and Saudi Grains and Fodder Holding LLC (SGAF). UFHC owns an agricultural company, Continental Farmers Group Plc (CFG), which is located in Ukraine in order to manage forty-four thousand hectares of crop production. However, in 2019 SALIC bought both SGAF's and Almarai's shares, which represents 66 percent of the paid capital ("SALIC acquired United", 2019). Along these lines, SALIC established a subsidiary in Vancouver, Canada called SALIC Canada Ltd in order to ease the company's investments in Canada. Thus, SALIC Canada created a joint venture with Bunge, which is a U.S agribusiness firm, called G3 Global Holdings.

The joint venture acquired 50.1% of the Canadian wheat board, and later on changed its name to G3 Global Grain Group (“SALIC invests in Canadian”, 2015). Subsequently, in 2018, G3 started their operation to build a large terminal in Vancouver for exports as well as showing interest in building grain elevators in Canada.

Further, in 2014, the company have created SALIC UK, a subsidiary in London, in order to ease SALIC’s investments overseas. The UK based wholly owned subsidiary has acquired most of the farming assets of Mriya Groups in Ukraine along with its machinery, infrastructure facility, and land lease agreements. (“SALIC has Full Acquired”, 2018). In addition, in 2018 SALIC decided to merge the two companies, CFG and Mriya, in order to act under a single strategy. This strategy focuses on cultivating land in 5 regions of Western Ukraine. Thus, SALIC oversees 45000 hectares from CFG along with 150 000 hectares from Mriya Group, hence projecting the merger’s operation as the biggest farming operation in Ukraine (Talant, 2018). Moreover, SALIC have shown interest in Australia by Acquiring Baladjie Pty Ltd. The Australian firm owns a 200 000 hectares farm along with 40 000 Merino sheep flock (“Saudi Agricultural and Livestock”, 2019). The farm is located in Western Australia’s wheat belt, also the deal included two processing facilities, four grain elevators, equipment, storage facility, and land lease agreements. This investment is the first

investment in Australia and in sheep production globally. Thus, SALIC Australia Pty Ltd was established as a wholly subsidiary to deal with SALIC investments in Australia (“Saudi Agricultural and Livestock”, 2019).

Additionally, SALIC have established a joint venture with Al Dahra Holding, which is an Emirati agribusiness, with a capital of five billion SAR in order to invest across the Black Sea region in terms of land, storage, logistics concerning grains and livestock production (Kassem, 2017). On the other hand, SALIC have also invested in agricultural technology. Hummingbird Technologies, which was established in 2016 in London, received a 7 million funding investment in order to supervise the 400 000 hectares of Ukrainian and Australian farms (“SALIC investments in Hummingbird”, 2019). The British agri-tech company provide unique services that can accelerate the adoption of innovative practices of farmland production. The London based agri-tech company uses drones and satellite technologies to gather imagery and data to assist farmers with information that can help them make actionable decisions regarding their crops (“Saudi SALIC invests in crop”, 2019). Hummingbird process the data it gathers and offers maps that are transferred to farm equipment & machinery. The agri-tech deliver solutions that cuts down cost and increases yields with a minimum impact on the ecological system. Furthermore, the Saudi Agricultural and Livestock Investment

Company bought 19.95% shares in Minerva Foods, which is a red meat exporter company located in Brazil (“SALIC acquired 20%”, 2015). The Brazilian company products goes in line with KSA ‘s Islamic requirements of Halal meat, later SALIC increased its ownership to 33% due to Minerva’s strong market position in South America and worldwide which results in exporting its meat to more than one hundred countries (“Minerva Foods”, 2016).

5.2 Conclusion

The Saudi Agricultural and Livestock Investment Company, though its early establishment, demonstrated a strong presence through its strategy of targeted geography. SALIC carefully considers its investments in order to secure its 12 specialized products. The company aims to lower the country’s dependency on food imports, thus focusing on reaching above 50 percent import coverage on its 12 food items. SALIC investments are within the scope of buying shares in companies or penetrating the volume in order to ease its importation into KSA. SALIC have invested in Ukraine, Brazil, Canada, UK, and Australia. These destinations mark the company’s acquisitions, mergers, and funding. The company is exploring other favored destinations among them are the Black Sea Region, France, India, USA, New Zealand. The

geographic expansion of SALIC considers the political, social, and economic conditions along with climate hazards. However, SALIC will continue to support KSA's food security initiatives, therefore the company is promptly changing to deal with securing its supply around the world.

CHAPTER 6

COMPARATIVE ANALYSIS & FINDINGS

The analysis focuses on the overall strategies and investments of both cases, *Almarai* and *SALIC*, in order to present the capabilities of both companies in relation to food security. Thus, by examining these two cases, the data obtained from both cases were analyzed in terms of food security components which are availability, accessibility, utilization, and stability. Further, comparing both cases investments and strategies under each food component illustrates the positions of both companies, *Almarai* and *SALIC*. Therefore, the comparative analysis approach was chosen to stimulate the impact of the selected cases' investments and strategies. Given that, the importance of using the four dimensions of food security constitute a clearer prospect of the two cases' strategies and investments, thus explains the power these two cases demonstrate in order to handle food security in Saudi Arabia.

Hence, by using the food security's four dimensions as themes, the data gathered from the investments and strategies of *SALIC* and *Almarai* contribute as the main focus to present the capabilities of these companies in relation to the issue at hand. In addition, when discussing the themes, several factors interacts with the impact of many investments which helps illustrate the current situation in Saudi Arabia. The connection

that was established in the findings provides future coordination that can manage to lessen the impact of food insecurity in KSA. In order to contribute to the unknown parts of the ongoing literature, the findings of this study provide information about the connection between food security dimensions and the investments and strategies undertaken by agricultural and food companies that are associated with the goal of reaching food security in Saudi Arabia. Yet it should be noted that SALIC has started its operation in 2012, hence to understand its capability, the findings were based on looking at SALIC as an investor. Thus, *SALIC's* understanding was based on the capabilities of each of its assets, unlike *Almarai* where the investments are integrated within the company. Therefore, the constructed themes of food availability, food accessibility, food utilization, and food stability demonstrate *Almarai* and SALIC's potentials in dealing with the issue of food security.

Both cases prove strong capabilities through their strategies and investments' selection, however differences occur due to the years of experience that each case holds which was projected through the themes. Besides, the food availability and food accessibility themes indicate greater strength from *Almarai* and *SALIC*. The remaining two themes, food utilization and food stability, show different capabilities between *SALIC* and *Almarai*. In the food utilization theme, *Almarai* for instance, revealed good to moderate capabilities with future potential enhancement. *SALIC* on the other hand,

display moderate to low capabilities due to lack of solid measurable data. Finally, the food stability theme, shows both companies investments impact to be moderate to low.

6.1 Findings

An overview of the food security situation in Saudi Arabia and more specifically the selected cases of *Almarai Company* and *SALIC* have laid the ground for a descriptive explanation. Therefore, the potential knowledge extracted from the analyzation of data have set the way for the findings to fill the gaps of food security in the literature. It was found that when incorporating the four dimension of food security with the investments and strategies of the two companies, several determinants came to light in order to assist the issue of food security in KSA. These determinants were given a detailed discussion under four themes and these are food availability, food accessibility, food utilization, and food stability.

6.1.1 Food Availability

In comparing some of the chosen investments of both companies, it was necessary to add the availability pillar of food security in order to illustrate how such targeted investments impact the situation of food security in KSA. In the case of

Almarai Company, investments that included the construction of Central Processing Plants and dairy farms, cultivating land abroad, and acquisitions & joint ventures were analyzed to reach an understanding in order to demonstrate their capabilities. The determinant features of food availability involve mainly domestic supply and trade. These determinants can be observed in the case of *Almarai* Company. Therefore, when tackling the first element which is domestic supply, the company demonstrates a strong ability in reaching the demands of KSA population and the region. *Almarai's* investments that were mentioned earlier reveal the production capability this company holds. *Almarai's* advanced facilities operates a total of 138 production lines. Accordingly, around four million liters of milk is enjoyed by consumers on a daily basis. In addition, approximately 1.3 billion items of bread and pastry are produced annually. Also, a daily distribution of almost 1.3 million bottles of juice, and 98 million packs of poultry products are sold every year (Almarai, 2018). *Almarai's* production capacity is unparalleled, the company's production infrastructure and supply chain manages to deliver high quality products that most people seek. *Almarai's* investments in manufacturing and production facilities and farms ensures their ability to serve growing volumes at low cost. The company constantly enhances their supply and production capacity to meet the rising demands in the GCC and beyond. Furthermore,

Almarai invested in acquiring arable land abroad which indicates their commitment to increase their production capacity to reach the increasing demand.

The second element, trade, is considered part of the operational core of *Almarai* Company. Animal feed are 100% imported from the company's own overseas lands or third party arable farms. Some ingredients are also sourced from around the globe, to be delivered later to processing plant in order to start their manufacturing phase. The company is committed to reaching self-sufficiency in animal feed requirements through importation. However, this caused a significant increase in feed cost which was stated in the company's financial report. By ceasing local production of animal feed, *Almarai* now imports green forage from their arable lands overseas in countries such as USA, Argentina, Eastern Europe and Spain. Further, the company's investments in establishing joint ventures and acquiring businesses to expand their portfolio represent a good strategy to increase export volumes. The use of subsidiaries has raised *Almarai's* capabilities in exporting many of its products beyond the GCC. In 2018, the company's sales in KSA is around 9.2 billion, moreover the GCC sales account for 3.2 billion along with 0.9 billion sales beyond the GCC.

On the other hand, in the case of *SALIC*, the company have embarked on a series of acquisition in order to secure crop production for Saudi Arabia. *SALIC* investments

in UFHC, CFG, G3, Mriya, Baladjie, and Minerva food proves a good example of guaranteeing supply for KSA. When it comes to domestic supply, *SALIC*'s targeted crops drove such investments to take place; which clarifies their production responsibilities for reaching Saudi Arabia's demand. The company owns several locations outside KSA to ensure food supply for the kingdom and these include Ukraine, Brazil, Australia, and Canada. By exploring *SALIC*, the two determinants of domestic supply and trade are intertwined they can't be discussed separately. This is due to the company's operations to invest in crop production overseas in order to export these productions back home, namely Saudi Arabia. The previously mentioned investments explain the company's determination to investigate several locations to secure different routes of specialized crop supply. *SALIC* established a strong grip in Ukraine due to the establishment of UFHC which owns CFG along with acquiring Mriya group which later was merged with CFG. UFHC manages around 44 thousand hectares in west Ukraine along with producing wheat, barley, maize, forage, as well as other commodities.

Further, the strategic move to merge CFG and Mriya helped *SALIC* set their foot in Ukraine which enhanced their production capacity across 195 thousand hectares in 5 regions of Western Ukraine. By uniting these two companies, they now possess a

leading position in the Ukrainian agribusiness. In this respect, the growing of potato is one of the main strategic direction of the combined business (CFG & Mriya). Two thousand hectares were designed for this crop in addition to an average increase of 300-500 hectares every year in regions of Ternopil and Lviv in west Ukraine (CFG, 2017). The combined business owns storage facilities for potato with a capacity of more than 87 thousand tons. Also, it started harvesting crops from their land pool such as barley, rape, wheat, and rye. In addition, the considerate investment into G3 proves another strategic move towards securing supply for Saudi Arabia. This joint venture shows great capabilities to become one of the leading companies in grain trade. The potential of G3 can be observed through their previous and ongoing constructions of export terminals. The expansion projects show high potential which holds a capacity of 11 million tons of grain, thus positioning G3 in a competitive position. This careful investment into G3 can be found as positive due to the fact that KSA rely heavily on importing wheat and barley. The targeted location that drove *SALIC* to invest in G3 comes from the high potential Canada holds in exporting wheat and producing barley.

Moving on, the Baladjie acquisition can be seen as an important step to build *SALIC*'s global footprint. The decision to choose Baladjie came after a considerate study of its capabilities. Therefore, the agroholding owns thirty farms that accounts for

200 thousand hectares across a great deal of the wheatbelt along with forty thousand Merino flock. Baladjie is one of the biggest grain producers which makes this deal a positive one, however the Merino value have boosted the impact of this investment due to its unique economic influence. The Merino breed is regarded as a significant contributor to the production of prime lamb. This favorable breed demonstrates a great reproductive feature, thus the increasing demand of prime lamb production places Merinos on a significant front when it comes to impacting sheep meat industry. Moreover, Minerva opened new chances for *SALIC* to have a strong supply from one of the biggest meat exporters in Brazil. The targeted investment in Brazil presume to be positive due to the compliance of Shariah Halal meat. The company exports around 2 million tons annually to the MENA region. Minerva's production capacity can be calculated when looking at its slaughtering capacity, thus the company slaughters daily approximately twenty-six thousand head. Minerva strategically locates its plants that are geographically diversified across seven states in Brazil in order to secure its supply. The company positioned itself as a low-cost beef producer with the ability to expand its production capacity along with diversifying its product portfolio.

The availability component gives more weight to two aspects and these are, as mention earlier, supply and trade. These determinants play a significant role when it

comes to controlling food availability. Many studies have combine more features to discuss food availability, however this study choses to focus on supply and trade because they constitute a good measurement of strategies and investments' impact on food security. When viewing *Almarai*'s contribution to this theme, it's evident that the company withstands great production capacity. *Almarai*'s strategic investments shows strong potential to deal with KSA's food security situation. The company's investments impact can be observed through its performances, as stated earlier, in supply and trade. Similarly, *SALIC*'s targeted investments present robust capacity to assist Saudi Arabia with food security. The company's investments impact, in terms of trade and supply, show growth potentials. Therefore, in this theme, both companies were found capable to absorb the rising demands in KSA. Securing supply through different strategic expansion existed in both cases. Thus, marking both companies' investments and strategies in this theme as strong.

6.1.2 Food Accessibility

The selected investments of both companies were essential in order to compare their impact on the situation of food security in KSA. By combining the accessibility pillar of food security, the findings show how such targeted investments effect the issue

of food security. Food accessibility is mainly influenced by income, employment, food prices, market, infrastructure & distribution, and economic growth & development. In the case of *Almarai* Company, the physical accessibility can be noticed in the company's intensive investments in distribution and infrastructure. *Almarai* have a distinctive distribution network which operates to reach a wide range of geographic areas. The company traces their goods starting from the exiting point up until the retail shelf. Thus, *Almarai*'s logistic department is recognized as the biggest in the Middle East. The distribution network constantly works on improving cost efficiencies along with quality management. The company's investments in this division results in optimizing route systems and vehicle tracking across the GCC. The company owns more than eight thousand vehicles, which holds a temperature-controlled rate of 99% demonstrating an unmatched figure in the region (Almarai, 2018).

Further, *Almarai* have a retail network that's growing in order to build a relationship that results in providing a range of product options that are suitable for customers' need. The presences of *Almarai* products in retail outlets are more than 650 products across six segments. The company's network covers approximately 100 thousand retailers through distribution centers across the region. The distribution centers of *Almarai* are managed through subsidiaries along with agency agreement. The

creation of the joint venture (IDJ) and the acquisition of Teeba & Beyti illustrates the company's distribution footprint to reach customers beyond the GCC. *Almarai's* ability to expand into different segment proves the strength of their distribution network. The company's distribution strategy focuses on enhancing the company's position by leveraging its substantial production capacity. The dairy, juice, bakery, poultry, and infant nutrition segments that drove the company to increase investments in processing plants construction, which formed the hub of the company's far-reaching distribution network, have benefited *Almarai's* distribution expertise to support its production capabilities. This expansion of the company's portfolio has showed no dependency on any region or distribution channel. More importantly, *Almarai's* network of distribution influence the company's role when it comes to market penetration which presents huge difficulties to the entry of new competitors.

Moreover, the company's infrastructure is observed through its advanced centralized processing plants & farms along with a modernized distribution system. *Almarai* have been committed to matching its infrastructure to consumers' demands, for example port agreements to ensure the importation of its overseas animal feed. Another example is the investments to expand the plant for poultry projects which includes parent farms as well as hatcheries and broiler farms. The targeted investments in

distribution and infrastructure have resulted in creating jobs. *Almarai* total workforce is approximately 43 thousand, almost 9000 are Saudis and around 750 are females (Almarai, 2018). The company constantly invests in its human capital along with recognizing their performance in order to motivate them, and this contribute to the effective delivery of the company's objectives.

On the other side, the economic access to food relies on the ability to buy or produce one's own food. Therefore, *Almarai* have positioned itself as a low-cost producer in order to provide affordable prices of its products for its consumers. In recent years, many changes have been taking place in Saudi Arabia. These changes include the reduction of general subsidies, the introduction of VAT, and the push for Saudisation. The impact of these changes has affected *Almarai* in terms of extra costs. Nonetheless, the company have been always aware of the needs of its consumer, thus *Almarai* manages its product prices by selling 80 percent of its products with prices that are under eight SAR as well as 25 percent of its sales are under two SAR. Yet, changes in demographics that resulted from expatriate workers leaving the country have affected the consumer spending in a negative way. However, the increase of extra fees that are associated to higher production & labor costs along with higher taxes as well as

expenses from the importation of green fodder are more likely to pressure the company to rethinking its pricing strategies.

Besides, *Almarai* established a strong regional presence regarding the dairy segment. The company for the past 40 years have occupied a market leadership position in the dairy segment across the region along with fresh juice in the GCC. the expansion of its portfolio that was backed with joint ventures and Acquisitions have increase the company's chances to penetrate non-GCC markets as well. *Almarai* GCC market shares in each product segment can be demonstrated as follow: 57% fresh dairy, 22% long-life dairy, 31% butter & cheese, 26% bakery, 17% juice, 10% poultry, and 4% infant nutrition (Almarai, 2018). Moreover, *Almarai*'s growth is driven by defending their leadership position, developing new products, increasing exports, expanding food service, prioritizing technology and innovation, and accelerating selected segments. The investments that introduced new segments, mainly poultry & infant nutrition, along with the establishment of a joint venture (IDJ) have supported *Almarai*'s performance for future growth. The poultry business hasn't gained solid profitable growth up until 2018; the company succeeded in improving bird health which stabilized the volume of supply. 2017 marked a great change in this category which resulted in cost reduction and better technical efficiency. In addition, the infant formula segment started to achieve operating

profit level by 2018, and this was partially due to the new 2017 liquid product launch. IDJ increased *Almarai*'s position outside the GCC and this resulted in growing its presence in the Egyptian market in 2018. Also, in 2018 Bahrain and Oman have registered strong growth of 6.1 percent & 1.3 percent respectively, and that was due to the re-entry of the bakery category. However, the GCC market environment in 2018 have affected negatively the company's top line sales of that year in all markets. KSA witnessed a 0.5 percent decline in categories such as bakery, juice, and fresh dairy. Yet, the company managed to improve its revenue growth and cash flow in 2019. *Almarai*'s dairy and juice segment registered a performance improvement with a nominal growth of 6.1 %, poultry top- line growth was at 7.9% along with bakery at 10.4% in 2019 (Almarai Company, 2019).

In comparison, in the case of *SALIC*, physical & economic accessibility can be illustrated through *SALIC*'s investments. *SALIC* distribution strategy is revolved around establishing a universal and domestic network that is strong enough to allow for a stable supply of its twelve specialized products. The company's investments in CFG, which later merged with Mriya, created a robust network with concrete infrastructure due to the constant funding of *SALIC*-UK, a subsidiary of *SALIC* that eases its overseas operations. The renovation of CFG includes technical equipment for upgrading its

technical fleet. CFG added new farming machines, sprayers, and tractors which will push for a more productive harvesting. The company's investment plans to increase its technical fleet by approximately 50 million USD. CFG is working on modernizing the facilities of its potato storage along with securing additional equipment. The technical unit of the joint business aims to increase its capacity to support its ongoing business for the coming years. CFG already backed its technical unit with an amount of 11 million USD. These investments support its effective operational and distributional goals. Furthermore, G3 handles its distribution network through primary elevators, port terminals, and logistic assets. G3 uses its primary elevators to coordinate grain delivery to customers, therefore investments in technical equipment supported its inbound and outbound delivery. G3 elevators provide contract choices to farmers with daily prices to help distribute their product, the Canadian grain demonstrates great quality with surplus supply that is ready to be exported. Further, G3 port terminals handles the final point before shipping the product to market destination across the world. Therefore, the investments into G3 ,which combined the Canadian Wheat Board previous assets and Bunge's export terminal along with *SALIC*'s commitment to further invest in infrastructure, have allowed it to enhance its distribution capabilities.

Likewise, the Baladjie investment is a major step for *SALIC* due to the country's capability of producing grain and red meat. However, no sufficient data were found regarding specific distribution capabilities in the case of Baladjie. On the contrary, *SALIC*'s investments in Minerva shows to be positive due to Minerva's distribution capabilities of reaching international markets with strict sanitary control. Minerva operational trademark is circulated around its short deadline delivery. The company exports its products around the world through sea transportation, therefore Minerva controls a rigid logistic unit that monitor its cargos in order to guarantee perfect conditions of its products. the company transport its live cattle through strategically located centers. Minerva provides diversified cattle breed along with negotiable price opportunities. Athena Food, which is a company that is owned by Minerva, owns several distribution centers in countries such as Colombia, Chile, Paraguay, and Argentina. In the previous years, Minerva invested heavily in distribution centers to further extend its arm into international markets. Minerva Food Asia, is another company owned by Minerva Food in Australia, deals also with distributing products at a competitive price globally. *SALIC* investment aligned with Minerva's strategy of targeted markets, due to the Middle East being an emerging market for Minerva's exports. Hence, *SALIC* investments brought new market opportunities for Minerva. By

looking at these investments, *SALIC* have gained a strong universal presence which permits it to secure supply for the kingdom from several locations.

However, the findings in this theme did not cover some features regarding *SALIC* due to limited access to information. Consequently, the accessibility component deals with particularly two parts, physical and economic. By illustrating the physical and economic aspect of the investments of both cases in this theme, it shows that the two cases targeted their investments considerably as these investments focuses on securing different distributional routes to maintain supply. Besides, both companies sustain constructive abilities for potential economic growth. Therefore, in this theme, *SALIC* and *Almarai*'s strategic investments were marked as strong.

6.1.3 *Food Utilization*

Food utilization commonly focuses on the quality of food, which is associated to nutrition & sanitation, along with food preparation and culture. Also, food utilization is related to food preference and nutrition behavior or trends. This third pillar is projected through the comparison of both cases' investments and strategies. Hence, in the case of *Almarai*, the notion of quality is at front of the company's investments and

strategies, and this can be observed through its slogan which states “A Quality you can trust”. Therefore, since its establishment the company have been dedicated to delivering products that are compliant with the best standards of global practice. *Almarai*’s quality standard and food safety are implemented carefully due to its effective control over the company’s supply chain. The vertically integrated company enjoys its power that enables it to oversee all phases of its product life stages. The company performs rigorous examination in order to guarantee the fulfilment of its food safety and quality requirements. Thus, *Almarai*’s capabilities to constantly commit to product development and innovation demonstrate its obligation to diversify and expand in order to maintain its world-class level of quality. To clarify, the company, through innovation and farm designs enhancement, have increased its milk production resulting in more than 14 thousand liters of milk per cow every year. *Almarai* looks after its dairy herd by providing 24-hour care along with establishing a safe housing environment that is temperature-controlled in order to guarantee highest yields and quality.

In addition, the company’s investments regarding the construction of processing plants and manufacturing facilities have aligned with the massive production of high quality outcome. The company also invests in equipping its facilities with modern technology which increased its ability to produce nutritious products on a great scale.

The growing demand for healthy products have pushed *Almarai* to reform and improve its product's nutritional profile. the reduction of sugar and salt is one part of the company's policy concerning the issues of health and well-being. The vertically integrated company also ensures no artificial colors in its products. In the infant nutrition segment, *Almarai* have succeeded in receiving the Global Food Safety Initiative Certificate. In addition, the poultry segment is recognized for its high nutritional value products, and this is due to the investments in innovation and animal feed that is 100% imported from the company's arable land overseas. Besides, *Almarai* have been able to mitigate through local and regional trends and observing consumer behavior. For instance, "Snackification" which instead of the three-traditional meal model, smaller meals that are prepped in smaller packages are gaining rising demand. Also, "on the go" food is increasing due to people's choice to eat at school and work. *Almarai* have dealt with these changing patterns of consumer's behavior by responding through most of its product segments. The company for example, in the poultry category, have presented 4 flavors of marinated chicken that are "ready to be cooked". Likewise, the bakery category has also created pastries with different flavors that are "ready to eat". *Almarai* also created a "ready to drink" nutritional formula that contains no preservative in order to support working mothers. The company's 40+ years of

experience is underpinned by its ability to innovate and adapt to changing trends and consumer's behavior.

In addition, *Almarai* have put considerable effort to promote choice awareness and health through campaigns. Campaign topics includes, and not restricted to, nutrition, obesity, and impacts of bad food choices on organs. By assisting consumers to make better choices regarding food consumption, *Almarai* have also devoted to counter the issue of food waste. Reducing food waste is one of the company's ambitions, thus *Almarai* tries to ensure accurate demand estimation. In other words, production equals consumption, therefore one of its initiatives is developing a half loaf bread to avoid generating food waste. Another initiative is collaborating with food regulatory bodies to redistribute food. The surplus in products such as dairy, food, and juice are redistributed to aid organizations or food banks. Approximately 427 tons of excess food has been distributed in 2018 (Almarai, 2018).

In the case of *SALIC*, the company's strategy to obtain high-quality crop products is projected through its selective investments. For instance, investments into CFG proves *SALIC*'s interest in securing specified crops that satisfy the needs of Saudi population. CFG product around 400 tons of seed, among other crops, daily with a 99% purity rate (CFG, 2017). The company was able to lower its dependency on external

supplier which allowed CFG to have control over its product quality. Furthermore, *SALIC* invested in Hummingbird, which is an AI business that helps farmers through its advanced computer techniques, provided actionable insights regarding crop health. Therefore, it can detect stress and disease along with delivering nutrition management mapping among other services. Hummingbird supervises *SALIC* investments in Ukraine and Australia for better quality outcome.

Minerva is another investment that mirrors *SALIC*'s goal of acquiring high quality products that best serves the demands of KSA specifically. As mention previously, Minerva goes in line with the standards of Islam regarding Halal meat. The company's world-class quality places Minerva among the best brands in the world. Minerva's meat is from Abardeen & Hereford Angus cattle. The slaughtering process of the cattle takes place at an early age in order to preserve the company's meat quality. Since Saudi Arabia's red meat consumption is considered to be the largest among GCC, *SALIC* investments in Minerva demonstrate to be appropriate. In fact, after *SALIC*'s investment in Minerva, the Brazilian company acquired IMTP Pty Ltd in Australia which holds a powerful presence in terms of exporting. IMTP later was changed to be named Minerva Foods Asia to preserve the culture of the company. Minerva Food Asia

exports to Islamic markets by complying to Halal Slaughtering. The company offer certified Halal meat products with competitive prices.

Therefore, the previously mentioned determinants that relate to the utilization theme were exemplified through both companies' investments capabilities. *Almarai's* utilization capabilities demonstrates to be good to moderate, and the company's future indicates further enhancements potential. However, *SALIC's* investments impact show moderate to low contribution in this theme, and this is due mainly to the lack of available information. Yet, *SALIC* presents strong potential growth in this theme since its backed up by the Public Investment Fund. Thus, the company should redirect some of its investments to deal more with domestic trends and consumer behavior in terms of food preparation. Nevertheless, both companies' investments and strategies in this theme can be perceived as moderate, with stronger capabilities in the case of *Almarai*.

6.1.4 Food Stability

When comparing *SALIC* and *Almarai's* investments, it is necessary to link it to the stability pillar of food security. Stability is connected to the physical & economic access of food which requires proper utilization that is always available. In the case of

Almarai, recently the company have been more determent to operate sustainably through all of its activities. *Almarai*'s sustainability approach focuses on several aspects and these are reasonable consumption, reduction of natural resource usage & waste, ensuring responsible sourcing, producing considerable economic value, and prioritizing safety and quality. The company's investments in arable lands in Argentina and USA have aligned with *Almarai*'s sustainability focus. In 2018 *Almarai* have completed its 100% transition to import animal feed requirements, thus alleviating domestic water pressure. The company invested to buy Fondomonte, which is an agriculture business, in order to source its animal feed. This investment was driven by Saudi Arabia's regulatory policy to secure supply and protect domestic scarce resources. in addition, in line with the sustainability strategy, *Almarai* joined a land conservation program for its arable lands in California. This participation to employ best practices of land-use, have resulted in almost 15 % of the company's land uncultivated, at any point, in order to assist soil restoration. Also, for instance, *Almarai*'s alfalfa farms in Argentina conducts, regularly, environmental impact assessments. Besides, the company's investments to increase milk production per cow, which decreased the number of cattle, have resulted in lower animal feed therefore lower water usage in arable farms. *Almarai*'s investments in manufacturing plants also seeks new ways to lower its water consumption, for instance the manufacturing plants, for the dairy and juice, have worked on projects to

reuse water. In Dubai, *Almarai* also participated in a water reuse project with a third party through recycling the packaging in order to extract water by using the reverse osmosis method.

Further, the distribution network is one of *Almarai*'s strength, the company through the expansion of its portfolio and acquisitions have combined the distribution channels. *Almarai*'s distribution system, regarding its cold chain, has previously installed many R22 refrigerants. However, the company's awareness of the negative impact associated with R22 on climate change has led to the replacement of R22 with alternatives that are CFC free. In 2018, *Almarai* have decreased its R22 by 7% in general, and 37% in the distribution, sales, and logistic department. Along these lines, around 30 and 40% of energy consumption are being directed from renewable sources at the sales depots in Dubai and Riyadh in 2018. Moreover, *Almarai* have been constantly working to innovate and adapt to market demands. Thus, the rising business of Foodservices and wholesale clients has been addressed by the establishment of "*Almarai Pro*", which is a sales department that is dedicated to meet the customized demands of food outlets, restaurants, bakeries, cafes, hotels and so on. Also, for example, investments in the poultry segment have increased its innovation to launch new ranges with low prices in Albashayer brand that meets the needs of the consumer.

In addition, by investing in the infant nutrition, poultry, and dairy plants, Almarai was capable to sufficiently absorb its rising production.

Similarly, in the case of *SALIC*, the company have projected the universal concerns regarding foreign agricultural investments in its official website. However, *SALIC* has been clear of its sustainable commitments regarding its investments. The company have stated clearly through its official website that *SALIC* will follow the codes of ethical behavior in its investments along with social responsibility and sustainability. The company's investments in Hummingbird have assisted CFG in its crop growing activities. For instance, Hummingbird's technology applications help produce an even crop production. This service assist companies such as CFG to optimize cost as well as minimizing waste and environmental impact. For example, Hummingbird manages CFG's potato supply chain through accurate solutions of plant count which calculate potato cultivation. Moreover, the Minerva investment was constructive due to the company's capability to operate in a sustainable approach. For example, water reuse projects have been conducted in some of its industrial units. Minerva reuse its water from rain or defrosting of cooling chambers. The company expresses its focus on sufficient water consumption and dedicate more water consumption management. Minerva also manages its waste through recycling. For

example, the company's units in Brazil sold its recycled waste to companies that deal with such specialty.

When observing both companies' investments under this theme, it's evident that *Almarai* and *SALIC* keen to integrate the sustainability lens within its strategies and investments. In the case of *Almarai*, the company recently increased its contribution to further sustain its environmental impact. *Almarai*'s future investments focuses on recognizing and predicting different factors, whether social, economic, or environmental in order to better influence its long-term resilience. The company shows good initiatives regarding this theme, however the impact can be reviewed as low. *Almarai* needs to boost its efforts regarding implementing sustainable operations; the company demonstrate good capabilities to achieve sustainable development in its domestic and regional markets. Likewise, in the case of *SALIC*, the company's investments impact can be observed in this theme as low. *SALIC*'s choice of investments proves its commitment to pursue responsible and sustainable businesses. Even though it is still early to measure *SALIC* in this theme, yet the current findings show the need for more efforts to achieve its sustainable foreign agricultural investments. Besides, *SALIC* is capable to secure a sustainable production supply due to its position of being the agriculture arm of KSA. Therefore, both companies'

investments and strategies in this theme can be perceived as low. However, their capabilities demonstrate greater impact.

CHAPTER 7

CONCLUSION

Saudi Arabia is considered, now, a food secure country. However, the country is facing increasing challenges that might put its future situation in an at-risk category. Sufficient domestic food production is being threatened by limited resources. Water scarcity has forced the country to depend on imported food to satisfy the needs of the Saudi population. Ineffective policies combined with inefficient consumption, have increased Saudi Arabia's food waste. The role of agricultural and food companies demonstrates great potential to assist the country in achieving food security. The study has provided a brief background of food security in general and more specifically in Saudi Arabia. This was essential to further discuss the two case studies, *SALIC* and *Almarai*. The detailed description of both cases' investments and strategies have set the ground to explore the capabilities of each company in relation to food security. The findings have showed the capabilities of *SALIC* and *Almarai* in terms of food availability, accessibility, utilization, and stability. It is evident that greater attention should be given to such companies when considering policy reforms. The food security strategy of Saudi Arabia needs to incorporate agri-business companies in its process,

even though private companies maybe conceived as cash-driven, their capabilities can be divided to tackle different aspects of food security.

However, it's necessary to highlight some issues that came to light while conducting this study. First, before the oil boom and during the early years of Saudi economic development, many of the Saudi workforce were employed in agriculture. Yet, later when the government started supporting local large-scale agribusinesses, many mediums to small scales farmers were being neglected which resulted in those people filling governmental jobs. The drastic decrease in local agriculture jobs since the 1970s demonstrate to be a serious issue that needs to be further investigated regarding the issue of food security. Second, highlights the issue of justification regarding buying land overseas. The rationale behind buying land abroad is to guarantee supply for the country that purchased it, yet this is highly controversial. The diplomatic relation of any two countries, if threatened, may disrupt the business trade of these two countries. Thus, what explains the need of acquiring any overseas land? when the exportation of any crop product maybe blocked from the hosting country. In this respect, there is no difference between owning a foreign land or buying from a foreign producer. The concept of guarantee here is not achieved through investments in buying foreign lands for agriculture. Therefore, this raises the following question 'is there really a guarantee

to achieve food security or better yet is there actually something called “food security”?’ In fact, the issue here comes to business trade and money; hence, as long as no obstacle arise regarding money or business trade then there is no issue of food security. However, if any disruptive event occur that affect either business trade or money then the issue of “food security” rises. Accordingly, these remarks shed the light on different points regarding this issue which requires further investigation.

7.1 Further Studies

The significance of this exploratory multiple case study can be recognized due to the limited research connecting food security to agricultural and food companies in Saudi Arabia. Many studies have focused on the overall situation of food security in KSA, however the focus on investments and strategies of *SALIC* and *Almarai* constitute a potential role in food security. Thus, this study can fill the gap in the literature, by providing the necessary ground for future studies on food security in relation to agricultural and food companies. The study can also be a gateway to explore a single investment oriented towards a specific policy. Moreover, the study can be used to further explore cooperation between the government and Saudi agri-business investors in terms of creating a joint company in overseas investments. Finally, this study can

also assist in addressing the government's role to further enhance such investments and strategies that can provide supply for the country.

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