

**STRATEGIC RESPONSES TO CHALLENGES IN  
IMPLEMENTATION OF FOOD INSECURITY  
STRATEGIES BY MAKUENI COUNTY GOVERNMENT**

**BY**

**ANNE W KANYINGI**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF  
THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION,  
SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI**

**NOVEMBER 2015**

## **DECLARATION**

I hereby declare that this research project is my original work and has not been submitted to any other university for award of a degree.

Signature.....Date.....

**ANNE W KANYINGI**

D61/67221/2011

This research project has been submitted for examination with my authority as the University Supervisor.

Signature.....Date.....

**MS CAREN ANGIMA  
SCHOOL OF BUSINESS  
UNIVERSITY OF NAIROBI**

## **DEDICATION**

This project is dedicated to my family, for their support & encouragement motivated me to complete my post graduate studies.

## **ACKNOWLEDGEMENTS**

This study would not have been successful without the help of my supervisor Ms Caren Angima for her patience, commitment and guidance that enabled me to complete this research project. My gratitude goes to my parents & siblings who encouraged & gave me their support to complete my post graduate studies. Finally, I would like to thank my friends Naomi, Margaret & Lawrence who have been very encouraging & supportive during my studies.

## TABLE OF CONTENTS

<b>DECLARATION</b> .....	<b>ii</b>
<b>DEDICATION</b> .....	<b>iii</b>
<b>ACKNOWLEDGEMENT</b> .....	<b>iv</b>
<b>TABLE OF CONTENTS</b> .....	<b>v</b>
<b>ABBREVIATIONS AND ACRONYMS</b> .....	<b>viii</b>
<b>ABSTRACT</b> .....	<b>ix</b>
<b>CHAPTER ONE: INTRODUCTION</b> .....	<b>1</b>
1.1 Background of the Study .....	1
1.1.1 Concept of Strategy .....	3
1.1.2 Food Insecurity .....	4
1.1.3 Strategic Responses to Food Insecurity .....	5
1.1.4 Challenges of Strategy implementation .....	7
1.1.5 Makueni County .....	7
1.2 Research Problem .....	9
1.3 Research Objective .....	11
1.4 Value of the Study .....	11
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	<b>13</b>
2.1 Introduction .....	13
2.2 Theoretical Foundations of the Study.....	13
2.2.1 Resource Dependence Theory .....	13
2.2.2 Resource Based Theory .....	15
2.3 Strategic Responses to Food Insecurity.....	17
2.4 Challenges of Implementing Food Security.....	21
2.5 Empirical Studies and Research Gaps .....	23
2.6 Summary and Research Gaps.....	25

<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>26</b>
3.1 Introduction .....	26
3.2 Research Design.....	26
3.3 Data Collection.....	26
3.4 Data Analysis and Presentation.....	27
<b>CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION .....</b>	<b>28</b>
4.1 Introduction .....	28
4.2 Challenges to implementation of Food Security.....	28
4.2.1 Poor Agricultural Practices.....	28
4.2.2 High Population growth.....	29
4.2.3 Changing Climatic Conditions .....	30
4.2.4 High level of Poverty .....	31
4.2.5 Human Wildlife Conflict .....	32
4.2.6 Detrimental human activity .....	32
4.3 Strategic Responses to Challenges in Implementation of Food Security.....	33
4.3.1 Implementation of Vision 2030 Proposals.....	34
4.3.2 Population Growth Control.....	35
4.3.3 Development of Irrigation projects and Water provision.....	35
4.3.4 Value Addition .....	36
4.3.5 Utilization of Fodder.....	37
4.3.6 Modernization of Farming Activities.....	37
4.3.7 Diversification of Food Crops.....	38
4.3.8 Provision of Storage Facilities.....	38
4.4 Discussion of Findings .....	39
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS...</b>	<b>41</b>
5.1 Introduction .....	41
5.2 Summary of Findings .....	41
5.3 Conclusion.....	43
5.4 Recommendations.....	44
5.5 Suggestions for Further Research.....	45

5.6 Limitations of the Study .....	45
5.7 Recommendations for Policy and Practice.....	45
<b>REFERENCES.....</b>	<b>47</b>
<b>APPENDIX 1: INTERVIEW GUIDE .....</b>	<b>51</b>

## **ABBREVIATIONS AND ACRONYMS**

<b>FAO</b>	:	Food and Agricultural Organization
<b>ASDS</b>	:	Agricultural Sector Development Strategy
<b>KARI</b>	:	Kenya Agricultural Research Institute
<b>GMO</b>	:	Genetically Modified Organisms
<b>WFP</b>	:	World Food Programme
<b>IFAD</b>	:	International Fund for Agricultural Development
<b>CAADP</b>	:	Comprehensive African Agriculture Development Program
<b>RBV</b>	:	Resource Based View
<b>AMIS</b>	:	Agricultural Market Information System
<b>CFS</b>	:	Centre for Food and Safety
<b>IFPRI</b>	:	International Food Policy Research Institute
<b>RRM</b>	:	Rapid Response Forum
<b>IAC</b>	:	Inter Academy Council
<b>DLHP</b>	:	Dry Land Husbandry Project
<b>COAG</b>	:	Council of Australian Governments
<b>SEZ</b>	:	Special Economic Zones



## **ABSTRACT**

The main purpose of this study was to establish strategic responses to challenges of implementation of food insecurity in Makueni County in Kenya. The study sought to achieve two specific objectives: to establish the challenges to implementation of food security strategies in Makueni County and to determine the strategic responses to the challenges in implementation of food security in Makueni County. The study took the form of a case study since there was need to conduct an in-depth investigation. Primary data was collected from five ministry of agriculture senior management employees based at the County Headquarters. The study findings reveal that the high population in the county has put pressure on the existing resources including land. There is high demand for residential space at the expense of agricultural activity. The high population has also led to deforestation as people depend on firewood and charcoal for cooking and heating. As a result water catchment areas are now destroyed and lack of water is such a great challenge contributing to food insecurity in the county. There is also the issue of soil erosion that renders the soils deficient of the required plant nutrients and lowers agricultural productivity. Over reliance on maize and beans has made it impossible to achieve food security since these crops are less drought resistant. Dependence on rain fed agriculture is perhaps the main cause of food insecurity since climatic conditions have changed and rain patterns are not predictable and reliable. It was further revealed that the strategic responses adopted to overcome these challenges include harvesting of rain water by constructing sand dams, exploiting other ways of expanding agricultural activity through irrigation, reversing the rapid population growth rate through provision of family planning education to people, diversification of crops to ensure that farmers plant crops that are more drought resistant, livestock diseases surveillance and vaccination as well as livestock improvement.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of the Study**

Food insecurity is one of the most challenging issues facing a number of developing countries around the globe today. Although some developing countries have made considerable progress in ensuring that they overcome food insecurity, a number of developing countries are still grappling with this enormous challenge. A number of countries have however adopted a number of strategic responses towards food insecurity such as irrigation of dry lands in order to improve food production, introduction of drought resistant crops and farming of Genetically Modified Foods. There also challenges to implementation of these responses that must be addressed such as growing scarcity of water, which is likely to reduce availability for agricultural uses; weather fluctuations such as those induced by El Nino and global warming, which affect production in ways that are rarely predictable, civil strife, political and social instability, which are both a cause and a result of hunger. These factors make the poor even more vulnerable to hunger (Braun, 2007).

Strategic responses are very essential in ensuring that implementation of food security plans are effective. Without appropriate strategic responses that are carefully drafted to address specific challenges, it may be near impossible to eradicate food insecurity in any country or region. The theories of Strategic Management to be applied in this study include; Resource Based Theory that suggests that no firm or can secure resources or capabilities it requires to survive without interacting with firms & individuals beyond

their boundaries. If an organization depends heavily on the external resources, then the donor of the resources will have more power to control the activities of the organization (Bebbington, 2004). Resource Based Theory (RBV) that asserts that the firm's competitive advantage lies in their internal resources, rather than to their positioning in the external environment. Rather than simply evaluating environmental opportunities & threats, in conducting business, competitive advantage depends on the unique resources and capabilities that a firm possesses (Barney, 1991).

In order to alleviate the problem of food insecurity in the global arena, the International Food Policy Research Institute was established in 1975. Its main objective is to identify & analyze alternative National and International Strategies & Policies for meeting food needs of the developing world on a sustainable basis, with particular emphasis on low income countries and on the poorer groups in those countries (Andersen, Rasul, & Mark, 1997). Many businesses, stakeholders & governments in developing countries are involved in reducing food waste and loss. Their motive to do so differs according to the aim and linkage they observe between reducing wastage & food security. The amount of food wasted and lost globally is alarming. Millions of people around the world go to bed hungry every night, yet millions of tons of food ends up in trash cans or spoiled on the way to the market. This problem needs to be tackled in every country in order to minimize food security & end poverty.

According to Braun (2007) a number of countries in the Sub Saharan African region have experienced improved economic growth of approximately 6%. However it is still evident that even with the economic growth that has been observed, there are still cases of hunger among most of the countries that have registered an improvement in economic growth.

Cohen (2006) asserts that the main force that alters the food equation in most countries around the globe is the issue of shifting urban rural populations. Makueni County is one of the regions in Kenya where food insecurity is such a big challenge. The County largely depends on natural weather patterns for food production to feed its fast growing population. A significant portion of its arable land is also semi arid and this poses a great challenge to food production in the county. The food security challenges experienced by the County require adoption of strategic responses that can enable the county to succeed in implementing its food insecurity plan.

Kenya is among the developing countries that are struggling with food insecurity challenges. The country does not produce enough food that can be able to cater for her increasing population. The food insecurity situation is largely a result of overdependence on natural weather patterns to support agricultural activity in the country. This implies that when the rains fail, the country has to experience severe food shortages. The country also faces food shortages due the rigidity of the farmers to practice diversification in their farming methods. Farmers are less willing to change from farming maize or practicing pastoralism to other forms of farming that is more productive (KARI, 2010.)

### **1.1.1 Concept of Strategy**

The term strategy has several definitions provided by different authors. Mintzberg (1987) one of the pioneers of strategic management defines strategy using four perspectives. The first perspective considers strategy as a plan. A plan is a consciously intended course of action. The second perspective views strategy as a pattern that involves a stream of actions that are similar. The third perspective looks at strategy as a position that an organization takes in order to overcome the internal and external environmental

pressures. The fourth perspective refers to strategy as a perspective where its content is not only a position but includes an ingrained way of performing activities. Porter (2000) also defines strategy as any decision that enables a company to create competitive advantage or to do things differently from the competitors.

Strategy, in general, refers to how a given objective will be achieved. Consequently, strategy is concerned with the relationships between ends and means, that is, between the results we seek and the resources at our disposal. Strategy and tactics are both concerned with formulating and then carrying out courses of action intended to attain particular objectives. For the most part, strategy is concerned with deploying the resources at your disposal whereas tactics is concerned with employing them (Nickols, 2010). There are different types of strategies that exist. Some strategies are planned or intentional and here programs and systems are built into the plan to ensure that no one acts in another way than intended. Some strategies can be ideological emanating from a shared organizational ideology. Some strategies may also be of umbrella type where there are general guidelines for behavior, defined boundaries and the other actors in the organization can manoeuvre within them. There are also process, unconnected, consensus and imposed strategy.

### **1.1.2 Food Insecurity**

According to Food and Agricultural Organization (2008) food insecurity refers to a situation where some section of the population may have no physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food availability addresses the “supply side” of food security and is determined by the level of food production, stock levels and net

trade. Under physical and economic access adequate supply of food at the national or international level does not in itself guarantee household level food security. Concerns about insufficient food access have resulted in a greater policy focus on incomes, expenditure, markets and prices in achieving food security objectives.

Hunger is an uncomfortable or painful sensation caused by insufficient food energy consumption. The scientific term for hunger is food deprivation. People who are hungry are food insecure, but not all food insecure people are hungry, as there are other causes of food insecurity, including those due to poor intake of micro-nutrients. Food insecurity therefore has the effect of malnutrition. Malnutrition may be an outcome of food insecurity or due to other situations such as lack of adequate care; insufficient health services and unhealthy environments (FAO, 2008). Food insecurity is more prevalent mostly in developing countries where more than approximately 852 million people are estimated to be malnourished due to food insecurity. However, it is important to note that the developing countries including those in Sub Saharan Africa are making significant progress towards achieving the millennium development goals such as ensuring food security (FAO, WFP & IFAD, 2012).

### **1.1.3 Strategic Responses to Food Insecurity**

Food insecurity is a problem that affects many countries around the globe especially those in developing countries. Several strategic responses have been adopted by a number of governments in order to ensure that this problem is adequately addressed. One of the most common strategies that have been implemented involves the expansion of agricultural activities through introduction of irrigation schemes. Farming through irrigation has enabled a number of countries around the globe to effectively address the

problem of food insecurity (Songwe, 2012).

One other strategic response is increasing and improving agricultural production through sustainable agricultural practices that do not have adverse effects on the environment. Very few countries have achieved sustainable and complex economies without first developing a successful domestic agricultural sector. The agricultural sector provides many employment opportunities, it a source of economic prosperity and good health to many people living in rural areas. Therefore the focus of most countries around the world is to ensure that the agricultural sector is given priority in order to increase agricultural productivity.

For instance in Kenya, the government has adopted some strategic responses aimed at addressing food insecurity. One of these is the establishment of the Agricultural Sector Development Strategy (ASDS). The overall aim of this strategy is to strategically make the agricultural sector a key driver for achieving the 10 per cent annual economic growth rate expected under the economic pillar of the Vision 2030. Through the ASDS, the Government aims at transforming the agricultural sector into a profitable economic activity capable of attracting private investment and providing gainful employment for the people (KARI, 2010). The policies that the government has put in place as part of its strategic responses to food insecurity relate to supply of inputs in order to make them affordable, transferring funds to grassroots through constituency development fund to assist implement food security plans, move towards introducing Genetically Modified Organisms (GMO) and commencement of multibillion irrigation project at Galana Kulalu (Andae, 2014).

#### **1.1.4 Challenges of Strategy Implementation**

The importance of implementing a strategy is often overlooked. Perhaps strategy formulation is considered a glamorous exercise in which the top-guns in the boardrooms participate. Execution or implementation on the other hand is viewed as routine stuff that follows a predetermined path dealing with the nitty-gritty and the grime and dust of the shop floor. No excitement and little scope for creativity. Crafting a strategy and execution are both sides of the same coin and need to resonate together.

There are several challenges that may hinder the effective implementation of a strategy. One of the major problems relates to dynamism in the environment. When implementing strategy the changes that occur in the environment may affect its implementation. It is also possible to face resistance from employees and other stakeholders in cases where strategy is not properly communicated to the people. Lack of top leadership support in implementation of the strategy is a challenge that is also likely to hinder its implementation. On the other hand strategy implementation involves the appropriation of resources. Lack of enough resources for implementation of a strategy can curtail its effectiveness.

#### **1.1.5 Makueni County**

Makueni County is located in the former Eastern Province of Kenya. Its capital and largest town is Wote. The county has a population of 884,527 (according to the 2009 census) and an area of 8,008.9 km<sup>2</sup>. Makueni County has a total of six parliamentary constituencies comprising of Mbooni Constituency, Kilome Constituency, Kaiti Constituency, Makueni Constituency, Kibwezi West Constituency and Kibwezi East Constituency. There are a total of nine sub counties in the county and majority of the



population live in the rural areas. According to the population census conducted in 2009, the poverty level at Makueni County stood at 64.1% of the total population of the county (World Bank, 2015).

The livelihoods of most county residents depend on rain-fed small-scale farming, a practice that is highly vulnerable to the effects of climate change and environmental degradation. Rapid population growth places enormous pressure on natural and environmental resources such as forests, water, and land. Already scarce resources such as arable farmland must be subdivided among more people, resulting in over-exploitation and low productivity. As the county's population increases, these pressures on resources will be magnified. Makueni County is faced with serious water scarcity challenges. Recurring droughts have diminished water supply, rendering many rivers seasonal, and drying them completely. High rates of deforestation have made the problem worse by severely reducing water catchment capacity. As its population grows and climate change compounds water shortages, the county's water demands will increasingly exceed freshwater sources (Makueni County Government, 2013).

Degradation of upstream catchment (land area where water collects and flows into water bodies), mainly due to agricultural expansion associated with population growth, is impacting water availability. Destruction of forests in the county, and the resultant biodiversity loss, is also a key environmental challenge. Population growth, agricultural expansion, over-dependence on wood fuels, and low levels of afforestation has accelerated deforestation. Forest loss can have consequences for ecosystems and food security (Infotrak, 2014).

## **1.2 Research Problem**

Developing strategic responses is perhaps the most appropriate way of addressing food insecurity in most parts of the globe. Several countries around the globe have adopted a number of strategic responses in trying to address challenges of implementing food insecurity plans such as global warming, melting of glaciers, expanding desert conditions and environmental pollution. These challenges require strategic responses in order to achieve effective implementation of food insecurity plans. The world population has also increased over time and this poses a challenge to most economies in terms of providing enough food for the people (Anderson, Rajul & Mark, 1997).

Makueni County is one of the regions in Kenya that are experiencing high population growth rate and most of its arable land is semi arid. The place is dry most for the better part of the year and food production is minimal thus leading to food shortages and finally food insecurity. The County Government of Makueni has plans to enhance food production but this can only take place if the county adopts strategic responses to the challenges facing implementation of their food security plan. The National government has also indicated that irrigation will be enhanced in dry areas in order to alleviate food insecurity. Studies on strategic responses to challenges of implementation of food insecurity reveal a number of issues.

Several studies have been conducted on food insecurity. The Council of Australian Governments (COAG), (2009) in its study on the strategic responses to food security in remote indigenous communities established that improving food security will have long term economic effects on the country. Hilton (2010) also carried out a study on Southern African response to food security and global food crisis. The study established that

protection to vulnerable consumers is important. Maede and Rosen (2013) carried out an assessment on the international food insecurity. The study established that despite improvements over the years, Sub-Saharan Africa is projected to remain the most food-insecure region in the world. Nuncio (2013) also carried out a study on food security in Indonesia. The findings of the study reveal that through a combination of domestic production and imports the country is able to achieve sufficient food supply. Nyangito and Nzuma (2004) also carried out a study on the development strategies and food and nutrition security in Africa. The study revealed that many governments have implemented a number of strategies such as poverty reduction and agricultural diversification in an attempt to alleviate food insecurity.

A study by Kigutha (1995) on food insecurity and a country's potential for agriculture shows that environmental factors such as inadequate rainfall pattern, subjects households to food insecurity during certain months of the year, even in high potential agricultural areas such as the former Rift Valley Province. Narayan and Nyamwaya (1995) carried out a study on gender and social-economic cause to food insecurity and established that the proportion of households headed by women were ranked as 'very poor' which comprised of 80% , compared to those headed by men that compared with 58%. They observed that gender disparity disadvantaged women regarding to overall economic status and access to basic services. Kirwa (2014) carried out a study on the strategic responses by the ministry of agriculture and livestock towards food insecurity in Kenya. The findings reveal that introduction of irrigation schemes and construction of rural roads is some of the strategic responses adopted.

It is evident that there are some studies that have been conducted on strategic responses to challenges in implementation of food insecurity. The study by Nyangito et al (2004) was done a while back and so much has changed since then. There is need to ascertain the current position on strategic responses to food insecurity in Makueni County. Makueni County is also very ideal for this study since it is one of the regions in the country that faces the challenges of food insecurity due to the climate that does not support agriculture. This study therefore identified a research gap that needed to be filled by seeking answers to the question, what are the strategic responses to challenges of implementation of food insecurity in Makueni County?

### **1.3 Research Objective**

The objectives of this study were to:

- i. Establish the challenges to implementation of food security in Makueni County.
- ii. Determine strategic responses to challenges in implementation of food security in Makueni County.

### **1.4 Value of the Study**

The findings of the study will be beneficial to the following:

The findings of the study will assist to provide more knowledge on the strategic responses to challenges of implementation of food insecurity in Makueni County. It will assist those in the academic realm to understand better the use of strategy in alleviating food insecurity. It will provide more knowledge on the application of strategy in food production in order to achieve food security.

The study will also be of benefit to the County government of Makueni. They will be able to understand better the strategic responses to challenges of implementing food security. This will enable them know the best strategies to adopt in order to alleviate food insecurity in the county. The study will also be of great significance to the national government. The national government will be able to understand the strategic responses to food insecurity in the counties. It will enable the national government to put in place the best practices in alleviating food insecurity.

The findings from this study will also be of great benefit to policy makers in the government of Kenya. It will provide them with the necessary information that can influence agricultural policy more specifically on food insecurity. It will assist them develop sound policies that will alleviate food insecurity in the country.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents a review of the relevant literature on strategic responses to challenges of implementation of food insecurity. Among the issues discussed include the theoretical foundations of the study, an overview of strategy, strategic responses to food insecurity and the challenges in implementation of food insecurity.

#### **2.2 Theoretical Foundations of the Study**

This study focused on two theories: the resource dependency and the resource based theories.

##### **2.2.1 Resource Dependence Theory**

The foundations of this theory are that organizations do not have enough resources that can assist them to operate as expected. Because of this deficiency, they have no alternative other than to obtain most of their resources from outside. If an organization depends heavily on the external resources, then the provider of the resources finds more power to control the activities of the organization (Bebbington, 2004). He further asserts that the behavior an organization exhibits will largely depend on the demands of the external provider of its resources since an organization will be forced to comply with the demands of the one who provides the resources.

The external powers that control resources perceive certain advantages in their relationship with the organization and exercise power through control over resources. The heavier the dependence on external resources, the more the demands of particular power

controlling these resources are influential. Guo and Acar (2005) argue that in this case there is need for an organization to know how to manage the incompatible and competing demands for them to survive. They further suggest that an organization needs to employ several strategies that will influence the demand and flow of the essential resources that are controlled by external powers. This will be very important if at all the organization seeks to reduce uncertainty in its external environment. Cho and Gillespie (2006) indicate that there are three factors that influence the degree of resource dependence. The first factor relates to the extent to which the resource proves to be important to the organization in terms of inputs and outputs it controls. The second factor relates to the concentration of resources or the availability of other sources for the same resources or of alternative resources since the availability of alternative sources increases an organization's power and autonomy by decreasing its dependence upon other organizations. The last factor relates to the discretion of the external powers that control the resources on allocation and use of the resources.

If an organization depends on a single or few sources of external resources, then the degree of dependency becomes very high and uncertainty is higher too. Organizations that seek to reduce external uncertainty normally pursue diversification of external sources of resources in order to have variety and reduce the degree of concentration of resources to one source. The more diversified an organization is in terms of sources of external resources, the more freedom it has over its decision making process and operations (Dunn, 2008). Bartkus, Morrisand Seifert (2004) assert that an organization depends on the environment for both support and acceptance. Therefore it is possible for the organization to overcome this challenge by introducing regulations and encouraging

professionalism in order to prevent excessive demands through promoting the legitimacy of the organization.

### **2.2.2 Resource Based Theory**

The main objective of this theory is to answer the question on why firms in the same industry or sector may vary systematically in their performance over some period of time. The theory suggests that this difference is mainly attributed to the differences among the internal capabilities and resources that yield competitive advantage for the organizations. The theory provides two important assumptions that explain firm resource heterogeneity and firm resource immobility. The fact that the resources that firms have are not similar and that they are largely immobile and can't be easily moved, a competitive advantage can then be easily created (Barney, 1986). The theory holds that there are four main attributes of resources that lead to competitive advantage: valuable, rareness, imperfectly imitable, non-substitutable. A resource is considered to be valuable if it has the potential of allowing a firm to exploit an opportunity in the market, thwart competitive threats, and conceive or implement strategies that improve efficiency and effectiveness.

The resource based theory tries to explain the inter-relationship between the organization's resources. An organization has both internal and external resources and they are interrelated in one way or another. The theory also suggests that there is a significant relationship between an organization's resources, competitive advantage and capabilities (Das and Teng, 2000). The RBV assumes resource endorsement of a firm cannot equilibrate through factor input markets. In the RBV decision making takes the following criteria: An organization has to identify its unique resources; upon identification of the unique resources, a decision has to be made on which markets those



resources can earn the highest rents and thirdly it is important to decide whether the rents from those assets are most effectively utilized by integrating into related market, selling the relevant intermediate output to related firms, or selling the assets themselves to a firm in related businesses (Teece, Pisano and Shuen, 1997).

The RBV suggests that the resources possessed by a firm are the primary determinants of its performance, and these may contribute to a sustainable competitive advantage of the firm (Wernerfelt, 1984). According to Barney (1991), the concept of resources includes all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. Originally the main concern of RBV was to identify the characteristics of resources that are not subject to imitation by competitors. If the resources possessed by a firm can easily be replicated by competitors, even though the resources are the source of competitive advantage of the firm, then the advantage will not last long.

Dierickx & Cool (1989a) describe how the sustainability of a firm's asset position depends on how easily its resources can be substituted or imitated. On the other hand, the inability to imitate a condition directs attention to whether competitor firms can acquire or accumulate resources with attributes and levels of attributes similar to some desired resource which produces a competitive advantage. The non-substitutability condition directs attention to whether competitor firms can access resources that will allow them to implement the same strategies as some successful firm. It is also these two criteria that allows Barney to define sustainable competitive advantage in terms of situations in which all attempts by competitor firms at imitating or substituting a successful firm have ceased.

Thus, he notes that sustainable competitive advantage is a property of equilibrium (Foss, 2005).

### **2.3 Strategic Responses to Food Insecurity**

Food insecurity is a matter of global concern, although it is most frequently observed in Sub-Saharan Africa (Webb, 2006). One of the most common methods for identifying food-insecure households or regions is to look at the frequency and types of coping strategies. Coping strategies are social responses used to offset threats to a household's food and economic resources in times of hardship.

In the year 2011 the global prices of food items were high and unstable with the same trend continuing even into the year 2012. The predictability of food prices still remained a challenge since there were floods in Thailand, the debt crisis in Europe, rising oil prices and the increased price of fertilizer and other inputs, unpredictable policy changes such as the reintroduction of price controls in Kenya. Despite these challenges, since 2008 many countries have finalized new agriculture development strategies based on the African Union's Comprehensive African Agriculture Development Program (CAADP), which was launched in 2003 to boost agricultural productivity on the continent through increased public investment. By May 2011, about 26 African countries had already completed their agricultural strategies and signed CAADP compacts, 15 had already started the implementation process and were in various stages of implementation, and 10 countries were yet to start (CAADP, 2011).

Songwe (2012) argues that countries that face food insecurity need to assist their farmers to gain access to the market. The main purpose why this is important is to enable the

distribution of farm produce to other areas where there is scarcity or deficiency. Enabling firms to access the market will also be beneficial to the farmers since a sudden increase in the supply of agriculture commodities without an equivalent increase in demand will cause decreased prices in food and agricultural products during the harvest and will leave farmers in debt. This has been evident in countries such as Malawi, Nigeria and Ivory Coast. For African governments to succeed in alleviating food insecurity there is urgent need to address the important issues that influence the forces of market supply and demand in order to control commodity price volatility which is basically a long-term component for food security. Short-term emergency responses to food security, such as provisions for heavily subsidized inputs, will not address Africa's food insecurity problem in the long run and may in fact further distort prices (Songwe, 2012).

According to Centre for Food and Safety, CFS (2013), there are a number of strategies that governments can put in place to enhance food production and alleviate food insecurity. Some of these strategies are to boost agricultural productivity, promote a significant expansion of agricultural research and development and its funding supporting national research systems, public universities and research institutions, and promoting technology transfer, & sharing of knowledge and practices including capacity development. Nutrition strategies which are country-owned and led should include all key partners at national level in decision making in particular civil society, women's and farmers' organizations which establish policy coherence in respective sectors, including national economic policies, to address excessive food price volatility; explore measures and incentives to reduce waste and losses in the food system, including addressing post-harvest losses.

According to FAO (2008), there are a number of strategies that can be adopted to assist in alleviating food insecurity in drought prone area of Africa. These strategies have been tested in other countries such as Ethiopia. The main strategies include investing in irrigation; planting different varieties of crop species especially those with ability to survive in drought conditions; developing through research new varieties of drought resistant varieties of crops; encouraging intercropping; training and developing the capacity of the people in drought prone areas to harvest water as well as implementing and improving existing irrigation systems.

There is immense variation in the agro-ecological conditions in Africa and, hence, in the range of opportunities facing people for improving their livelihoods (Oldewage, 2006). No wholesale solutions can be prescribed because each community, and indeed each household, is faced with different options, depending on the resources at its disposal and its aspirations. There is a need to stimulate the capacity of rural communities and individual families to take stock of their resources and the particular opportunities open to them, to help them test alternative solutions and to improve their access to sources of relevant knowledge and expertise as well as capital and markets Walsoft, (2008).

Improved access to markets is an essential step in increasing the off take from herds and redressing the balance between stock numbers and range resources (Webb, 2006). The lack of information on markets and trade, and problems with regional policy harmonization to facilitate cross-border trade are major constraints. The link between primary and terminal markets and promotion of private investment in export and domestic slaughter facilities, meat, leather and wool processing and transportation are crucial (Gregory, 2005).

Early warning systems have an important role to play in disaster preparedness, during emergency relief and as part of long-term solutions. Meteorological information can be particularly useful for farmers and pastoralists (Gregory, 2005). Computer-based predictions of droughts and floods can now give several months' notice and enable farmers to take pre-emptive action to minimize the impact of such events. It is therefore essential that national and regional policies for the planning and management of disaster early warning and preparedness be put in place, through restructuring and refocusing existing systems and by making meteorological information available to farmers and pastoralists in a timely way (Jayne, Mysers & Nyoro, 2005).

In order to reduce commodity price volatility for food products Songwe (2012) argues that there is need to support the Agricultural Market Information System (AMIS) in order to improve food market information and transparency; participating international organizations, private-sector actors and governments to ensure the public dissemination of timely and quality food market information products is achieved; countries should also coordinate responses in times of food price crises, including through the AMIS Rapid Response Forum; improve transparency, regulation and supervision of agricultural derivative markets; noting that a transparent and predictable international trade in food is crucial for reducing excessive price volatility, maintain focus on building an accountable multilateral trading system taking into account food security and nutrition concerns, in particular those of the least developed and net food importing developing countries (CFS, 2013).

Shiundu (2011) suggests that although government support for agriculture inputs such as seeds and fertilizer is often recommended, governments should not be engaged in the

storage activities for food products since state marketing boards with a storage mandate have been effective at managing food prices and security. The most significant thing governments need to do is to engage the private sector to encourage their participation in the storage and marketing process for agricultural and food products to build community silos for commodity collection and primary aggregation. These silos should be owned by the local communities and the state should be involved in ensuring that they meet acceptable quality and service standards.

In particular, governments of developing countries where food insecurity is prevalent have a responsibility to put in place a system for dispute resolution and to ensure that contracts are appropriately designed and respected by assisting local communities get access to loans or work through commercial banks to partially guarantee loans so that local communities can build silos. Reduction of food wastage can also be attained by encouraging local farmer cooperatives to build, own and operate community silos. Since between 20-40% of farm produce in Africa is lost during transportation, storage facilities close to the farms will help increase overall stocks. It will also be significant to develop private sector-run warehouses backed by a warehouse receipts system (Songwe, 2012).

#### **2.4 Challenges of Implementing Food Security**

Global population growth, demographic change, and increasing affluence and urbanization, will lead to growth in demand for food and changing patterns of demand rising affluence is associated with increases in food consumption, especially of meat and dairy products (James, 2008). Much (but not all) of the expansion in population will occur in developing countries: improving food security (especially affordability and availability) is closely linked with the need to reduce poverty. Increasing demand for

food from sub-Saharan Africa and Asia will also, via the globalised supply chain, create economic drivers for developed world agriculture (Gregory, 2005).

Global climate and other environmental changes that will have direct or indirect impacts on food production, fisheries and supplies, including rising carbon dioxide and other greenhouse gases, leading to rising temperatures, changing rainfall patterns and increasing incidence of extreme weather events such as droughts, rising sea levels and ocean acidification (De Schutter & Olivier, 2010). Changing climate may also lead to changes in the distribution and/or severity of pests and diseases and has the potential for severe impacts on food production and animal welfare. As well as threats, changes in climate may offer new opportunities for food production in some parts of the world (Tóth, 2012).

Markets for inputs and outputs at the local, national, regional and international levels determine the capacity for growth and the efficiency of an economy. In many parts of the region, markets barely exist, or they operate inefficiently, and many farmers and pastoralists are only loosely connected with the marketing system. It is possible to address some of the marketing problems facing small farmers and pastoralists through improving physical infrastructure and market information systems (Aiga & Dhur, 2006).

The main immediate concern to be addressed is the weak link between the information generated by the early warning systems and the capacity to act on it (Oldewage, 2006). Paradoxically, part of the problem stems from the many different messages emerging from the early warning systems, but at both the national and the regional levels there are weaknesses in the institutional arrangements that bring together governments and donors for decision-making on required interventions with ample lead times. In the longer term,

there will be a need to invest in systems that improve the accuracy of predictions by taking advantage of emergent information-sharing and communications technologies (Claudio O. & Delang, 2006).

According To the Inter Academy Council (2004) the main challenge of food security in most African countries is related to the underdevelopment of the agricultural sector. They further argue that the sector is characterized by low fertility soils, minimal use of external farm inputs, environmental degradation, significant food crop loss both pre and post-harvest, inadequate food storage and preservation that result in significant commodity price fluctuation. Ninety five percent of the food in Sub-Saharan Africa is grown under rain fed agriculture. Food production is therefore vulnerable to adverse weather conditions. There is an overall decline in farm input investment including fertilizers, seeds, and technology adoption. Access to fertilizer use is constrained by trade policies that increase fertilizer prices relative to commodity prices, limited access to markets and infrastructure, limited development of output, input and credit markets, poverty and cash constraints that limit farmer's ability to purchase fertilizer and other inputs (Aiga & Dhur, 2006).

## **2.5 Empirical Studies and Research Gaps**

Kirwa (2014) carried out a study on the strategic responses by the ministry of agriculture and livestock on food insecurity in Kenya. The study adopted a case study research design where both primary and secondary data were collected from ministry employees. The study established that food security challenges in Kenya have adversely affected the livelihoods of most households. These challenges include Climate change, Postharvest losses, Inaccessibility to household productive resources, High prices of food items, Poor



distribution and marketing structures, High population growth rate and high cost of farm inputs and Inadequate production and conflicts. According to the study, the ministry has responded to these challenges through implementation of irrigation schemes to boost production, construction of rural roads to ease transportation of food to markets, climate change mitigation and awareness programmes, soil and water conservation projects and construction of storage facilities such as grain stores. The ministry has managed to address challenges of food security through such strategies but not adequately as food insecurity is still a challenge.

Nuncio (2013) carried out a study on food security in Indonesia. The purpose of the study was to establish the strategic responses to food insecurity as well as the prevailing challenges. It was established that through a combination of domestic agricultural production and food imports, Indonesia currently maintains food supply levels adequate to feed its population. Due to inefficiencies in distribution systems and persistent poverty a low level of food insecurity exists in the country, particularly amongst rural populations. In response to concerns about supply disruptions, Indonesia implemented a food self-sufficiency policy in October 2012, aiming to meet 90 per cent of the country's food needs from domestic supply by 2014. Current production shortfalls, inadequate investment in agricultural development, inflation, a lack of comparative advantage and widespread corruption make it unlikely that Indonesia will achieve self-sufficiency in the allotted timeframe. Water security is a significant national challenge. Indonesia receives high levels of rainfall, however poor water management is still a challenge.

Behera et al., (2013) carried out a study on the challenges to food security in India. The study established that Overall, it may be concluded that food security in India can be achieved by paying higher attention to issues such as climate change, integrated water management, agricultural pricing and crop insurance. The impact of globalization in the form of (Special Economic Zones), SEZs and other factors has been both positive and negative in terms of agricultural prosperity and there is a strong need to regulate the policies related to globalization for reducing its negative effects on food security in India.

Okala and Ijeoma (2014) carried out a study on the challenges of food security in Nigeria. The purpose of the study was to explore the various challenges confronting food security in Nigeria with a view of highlighting the reasons that account for these problems. It was revealed that in Nigeria, several agricultural policies have been formulated to curtail food security challenges. Unfortunately, these policies have not yielded the desired results of increase food production. The study recommended that coordinated efforts and interaction of food producers, transporters, market operators and a myriad of retailers were necessary in alleviating food insecurity.

## **2.6 Summary and Research Gaps**

This study has reviewed two theories that are relevant to the strategic responses to challenges of implementing food insecurity. These theories are the resource dependency and resource based theory. The empirical literature reviewed reveals that there are several studies that have been carried out in this area but no current study addresses strategic responses to challenges of implementing food insecurity in Makueni County. This left a research gap that needed to be filled.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the research methodology that was used in establishing the strategic responses to food insecurity in Makueni County. It covers the research design adopted, data collection and the techniques that were used in data analysis.

#### **3.2 Research Design**

This study took the form of a case study since it focused on a single constituency. According to Robson (2002), a case study is a strategy for doing research that involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence. The case study was of particular interest as far as this study was concerned since there was need to gain an in depth understanding of the context of the issue under investigation. A case study has the potential to generate answers to the question ‘why?’ as well as the ‘what?’ and ‘how?’ questions, although ‘what?’ and ‘how?’ for this reason the case study strategy is most often used in explanatory and exploratory research.

#### **3.3 Data Collection**

According to Mwiria & Wamahiu (1995), qualitative research uses multi-techniques for data collection in order to obtain holistic view of the issue being researched. Data was collected from Makueni county offices where ministry of agriculture in the county was targeted.

The respondents included 5 County officials in charge of Agriculture in Makueni County and Ministry of Agriculture. They included the County executive in charge of Agriculture, and four Agricultural officers. An interview guide assisted in collecting data from respondents who are actively involved in drafting and implementing the strategic responses, since not much information on this topic is in the public domain.

### **3.4 Data Analysis and Presentation**

The data collected from this study was qualitative. The researcher employed content analysis in conducting the data analysis. Nachmias and Nachmias (1996) define content analysis as any technique used to make inferences through systematic and objective identification of specified characteristics of messages. Kothari (2004) also explains content analysis as the analysis of the contents of documentary and verbal material and describes it as a qualitative analysis concerning the general import of message of the existing documents and measure pervasiveness. This involved examining the responses obtained from the interviews to ensure that they are complete and relevant. The researcher then made inferences from the responses in relation to the objective of the study.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

The main purpose of this study was to establish strategic responses and challenges in the implementation of food insecurity in Makueni County in Kenya. The study sought to achieve two specific objectives: to establish the challenges to implementation of food security in Makueni County and to determine the strategic responses and challenges in implementation of food security in Makueni County. Data was successfully collected from all the five respondents who are ministry of agriculture officials based at the Makueni County government headquarters in Makueni. This implies that the study attained a 100% response rate since all the five responded who constituted the sample were interviewed.

#### **4.2 Challenges in Implementation of Food Security**

The study established that there are several challenges to implementation of food security in Makueni County. The findings on these challenges are:

##### **4.2.1 Poor Agricultural Practices**

The study revealed that most of the people in Makueni County engage in agricultural practices that are not sustainable. It was clear from the study findings that agriculture in the county is characterized as being low-input/low-output activity. The level of technology is generally very low and productivity per hectare and per person employed is very low compared to other areas in the world where agricultural activities are highly mechanized.

The study further established that in Makueni county high crop-based systems predominate and thus productivity is constrained by lack of knowledge, lack of financing and poorly articulated markets. The respondents indicated that a substantial proportion of farmers lives at the edge of subsistence, and are food-insecure simply because they have limited access to arable land. This dependence of subsistence farming limits the large scale production of food to cater for the nutritional needs of the population of Makueni County.

The study also revealed that a large portion of the population of Makueni County depends heavily on traditional agricultural practices to grow food. The respondents indicated that the poor and food-insecure generally have a narrow economic resource base with few options for expanding their incomes from farm activities. This total dependence on agriculture in a high-risk environment makes them vulnerable to any external shock, such as drought. The study further established that there are few agricultural innovations that are accessible in the County due to lack of access to markets and availability of irrigation initiatives. It was also evident from the research findings that due low levels of education and skills, off-farm employment is usually seasonal and low paid. Migration to the city or to work on large farms, similarly, results in an extra burden on the few people remain on the farms. All these lead to food insecurity in the County.

#### **4.2.2 High Population Growth**

The study findings reveal that high and uncontrolled population growth is a very major challenge that contributes to food insecurity in the county. It was evident from the findings that the population of Makueni County has increased rapidly over the last two decades due to a high fertility rate of 5.1% compared to a national average of 4.6%. The

high fertility rate compared to other counties has contributed greatly to increase in the population of the county.

The study established that the county has more people to feed with the same level of food production over the years and this is likely to lead to food insecurity. It was also established that high population growth becomes a significant contributing factor to food insecurity since most people are still engaged in subsistence farming despite that the population has greatly multiplied over the years.

#### **4.2.3 Changing Climatic Conditions**

The study established that another challenge to implementation of food security in the County is the variability in climatic conditions. It was evident from the research findings that the climatic conditions have significantly changed over the years to the detriment of agricultural activities. The findings reveal that Makueni County used to experience two rainy seasons, namely the long rains (March to May) and short rains (October to December). The study established that up until the 1970s both the long and short rain seasons were reliable, and the community used to plant and harvest twice a year.

It was further clear from the research findings that from 1980s onwards, the long rains have been unreliable and inconsistent, leaving the community with only one dependable annual harvest. This vulnerability to climatic variations is exacerbated by the community's heavy reliance on crops such as maize and beans that are very sensitive to drought. The study also revealed that natural resource degradation, inadequate provision of social services and under investment are key challenges facing Makueni County. These factors are major contributors of food insecurity in the County.

The study revealed that most of the farming activities largely depend on rainfall. The respondents indicated that long periods of drought that are experienced in the county serve as a contributing factor to food insecurity in the county. The findings reveal that most of the land in the county is suitable for farming activities but overdependence on rainfall makes it difficult for the local people to produce enough food to cater for the nutritional needs of the expanding population. The research findings indicate that most of the land in Makueni County is semi arid in nature and this by itself is the major cause of food insecurity in the County.

The study further established that the climatic conditions have largely been affected by some of the human activities such as depleting the forest and range resources, resulting in an overall decrease in biomass and biodiversity, reduced water infiltration and increased runoff and soil erosion. These factors, which contribute to the impoverishment of ecosystems, have led to a vicious circle of environmental degradation, lower system resilience to erratic rainfall, decreased agricultural productivity and increased poverty and food insecurity. All these combined contribute significantly to food insecurity in the County.

#### **4.2.4 High Level of Poverty**

It was established from the study that poverty level is high in Makueni County and this is one of the main challenges to implementation of food security. Most of the people in the County cannot afford to purchase the required farm inputs that can enhance the production of food crops such as maize and beans. This situation has reduced the volume of food production significantly making it impossible for the growing population to access enough food. The study further reveals that most of the people in the county still



rely on maize and beans as the main food crops and are not willing to shift their focus to other crops that are more drought resistant than maize and beans. It was also evident from the study findings that subdivision of land due to the growing population has made it impossible for people to engage in commercial farming activities thus causing severe and perennial shortage of food in the County.

#### **4.2.5 Human Wildlife Conflict**

The study also established that human and wildlife conflicts are also fundamental challenges to implementation of food security in the County. The respondents mentioned that in some occasions food crops are destroyed by wild animals especially in farms that are near national parks and game reserves such as Chyulu Game Reserve and Tsavo National Park. Livestock farmers have also had conflicts with foresters as they search for pasture and water in areas that are prohibited.

It was clear from the research findings that these conflicts have a negative impact on food security in the County since destruction of crops makes it difficult for the farmers to have a reasonable harvest. The study revealed that when farmers do not harvest enough food due to destruction by the wild animals, a deficit is created thus making the population vulnerable to food insecurity. This as a result contributes significantly to the worsening food insecurity in Makueni County.

#### **4.2.6 Detrimental Human Activity**

The findings from the study established that people have been engaging in some activities that are destructive to the natural environment. The respondents revealed that the increasing population has forced people to destroy forests in the area. The clearance of

forests has led to water shortage since most of the rivers that used to be permanent are now seasonal. The water catchment areas have also been destroyed and this has caused severe damage to the supply of water in the region. People have to walk long distances searching for water at the expense of engaging in productive commercial farming. The study reveals that lack of clean water has also made the population vulnerable to water borne diseases that affect people thus reducing their ability to engage in farm activities. Lack of water therefore has ripple effects that have contributed significantly to the food insecurity situation in Makueni County.

It was also established that food insecurity in the region is experienced due to deterioration of land as a resource that is necessary for crop farming. The human activities such as deforestation have increased soil erosion over the years and this has adversely affected the fertility of the soil where the crops are grown. The respondents indicated that due to severe soil erosion most of the soil nutrients no longer exist and that people must rely on artificial inputs in order to enhance their food production. However, access to artificial farm inputs relies heavily on the availability of income to purchase them. It was established that the poor soil composition due to erosion has therefore made it difficult for people of Makueni County to realize high crop yields thus making food insecurity worse.

#### **4.3 Strategic Responses to Challenges in Implementation of Food Security**

The study sought to establish the various strategic responses to the challenges faced in implementing food insecurity policies in Makueni County. The respondents provided a variety of strategic responses that have been put in place by both the County Government

and other development partners such as non-governmental organizations. The National governmental was also found to play a very significant role in implementation of these strategic responses.

#### **4.3.1 Implementation of Vision 2030 Proposals**

The study revealed that the key strategic response is that of transforming the lives of people with the aim of achieving Kenya Vision 2030 of becoming a middle income economy by the year 2030. The study revealed that the Vision 2030 is the master plan from which the Makueni County government forms most of its strategic responses to food insecurity. The respondents indicated that development of the strategic responses must be in line with the country's vision of attaining middle income economy status by the year 2030. The study reveals that most of the strategic responses developed by the Makueni County Government are contained in the County Integrated Development Plan which draws heavily from the objectives of Vision 2030.

The study findings also established that it will not be possible for food insecurity in Makueni County to be addressed without giving it a multi-sectoral approach. Food insecurity is a problem that has a variety of causes that emanate from various sectors. The study reveals that for this problem to be addressed comprehensively there is need to develop a strategy that focuses on development of all sectors. This includes ensuring that the health sector, education sector, water and sanitation and services are adequately developed. The argument propagated by the County government in support of multi-sectoral approach is that it will assist in implementing a strategy that is holistic in nature. It was established that the sectoral approach will provide an integrated strategic response to food insecurity in the County.

### **4.3.2 Population Growth Control**

The respondents agreed that population growth is a major contributing factor to food insecurity at Makueni County. The findings reveal that one of the strategic responses to food insecurity will involve addressing as a matter of urgency the rapid population growth that has put so much pressure on the existing agricultural land and other resources. The County Government of Makueni is keen on achieving a reduction in population growth over time through provision of reproductive health education such as family planning.

It was also evident that the County government has in place a strategy to prioritize meeting women's and their partners' needs for family planning. The argument in support of this is that family planning is a win-win intervention that can help reduce unplanned births, improve health outcomes for women and children, and slow population growth. It would help ease pressure on the environment and natural resources, strengthen resilience to climate change, and enhance county economic growth by empowering women. A reduction in the population growth rate is likely to improve the food security situation in the County over time.

### **4.3.3 Development of Irrigation Projects and Water Provision**

It was revealed from the research findings that the County government of Makueni is considering initiating irrigation projects. The respondents indicated that since rain dependent agriculture has become unreliable, it is important for the County government to explore other avenues of improving food security such as irrigation based farming. This will ensure that farming can be done all year round thus producing enough food that will boost the County's reserves. However, the respondents indicated that this is long

term strategic response that requires enormous resources which may take time to raise. The study revealed that consultations are ongoing with some development partners as one way of accessing funds for the proposed irrigation projects.

Another strategic response being implemented to address food insecurity challenges is the provision of water to the people of Makueni County. It was revealed that water for domestic use and for animals is very important in enhancing food security in the County. The study established that animal products such as milk and meat can be increased if there is availability of water for the animals. It was further revealed that provision of water for domestic use will reduce the time wasted by people searching for water and spend the time in productive farming activities. The water borne diseases that also affect people and reduce the time they put into farming activities will also be curtailed. In order to achieve this, the study established that a number of activities from both the County Government and development partners have been implemented. One of them is the construction of sand dams that assist to store rain water. During the dry season the people are able to access the water from the sand. It was also evident that schools are being provided storage tanks that enable them to harvest and store rain water for use.

#### **4.3.4 Value Addition**

The study findings further reveal that one of the strategic responses to the challenges of implementing food insecurity is the introduction of value addition or rather processing factories in Makueni County. The respondents indicated that the County has a lot of mangoes and oranges which are bought by middlemen at very low prices thus providing very poor returns to the farmers. It was established that plans are underway to promote value addition of mangoes and oranges and enhance linkage of these products to the

market. The respondents also confirmed that livestock improvement especially goats is one of the strategic responses that will assist the County to overcome food insecurity. The study also established that the county government of Makueni has put in place a plan to ensure that there is better livestock disease surveillance and vaccination to reduce loss incurred by farmers due to the death of livestock. Livestock improvement will increase the production of animal products and improve food security for the County.

#### **4.3.5 Utilization of Fodder**

In order to overcome the challenge of scarcity of grass during the dry seasons, it was revealed that use of pasture and fodder conservation and utilization is being pursued. The study established that farmers in Makueni County are now being thought on how to harvest and preserve fodder during the rainy seasons so that the same can be used to feed their livestock during drought when access to grass is a challenge. Preservation and utilization of fodder campaigns have been rolled throughout the entire county to ensure that all farmers get the necessary skills and knowledge that will enable them to avoid wastage of fodder when it is in plenty but rather conserve it for future periods when there is scarcity. It was established that this will ensure a constant supply of animal feed as well as reliable supply of animal products from the farmers. It will also imply a constant income for the farmers which shall in turn reduce poverty and increase the ability of the farmers to practice modern farming.

#### **4.3.6 Modernization of Farming Activities**

The other strategic response as established from the research findings is modernization of farming activities in Makueni County. It was evident that most of the farming activities are still very traditional in nature and carried out for subsistence purposes. It was also

confirmed that as part of the modernization process introduction of fish farming will be one of the strategies that will assist overcome food insecurity in the County. In live with this strategy of modernization, the government has already started offering seminars on modern farming techniques as well as fish farming in the region. The seminars are meant to equip people with the necessary knowledge and skills that will enable them shift focus from traditional farming methods to modern farming.

#### **4.3.7 Diversification of Food Crops**

It was also evident from the study results that there is need for the farmers in Makueni County to engage in diversification of food crops to avoid overreliance on maize and beans. The government is currently educating the farmers to consider other drought resistant crops such as cassava and others. The study also established that the farmers are being encouraged to engage in farming of traditional high value crops as one way of avoiding dependence on maize and beans.

#### **4.3.8 Provision of Storage Facilities**

Finally the study established that provision of storage facilities is a very important strategic response to food insecurity in Makueni County. The respondents confirmed that the County government has in place a plan of putting up grain storage facilities in various parts of the county in order to assist in food storage. The study established that storage facilities will assist overcome the wastage of food especially during seasons of bumper harvest. It was realized that when farmers harvest a lot of food they tend to dispose of it at very low prices to middlemen due to lack of storage facilities. Therefore construction of storage facilities is considered one among the strategic responses to food insecurity in The County.

#### **4.4 Discussion of Findings**

The findings from this study reveal that the rapid population growth in Makueni County is one of the leading challenges to implementation of food insecurity. This is in agreement with the position held by James (2008) who also established global population growth, demographic change, and increasing affluence and urbanization, lead to growth in demand for food and changing patterns of demand rising affluence is associated with increases in food consumption, especially of meat and dairy products. The study also confirms the position held by Gregory (2005) who established that population growth in Sub-Saharan Africa will lead to an increase in the demand for food and worsen food insecurity situation.

It was also established that the market for the food products especially during very productive seasons is poorly developed. Some other products such as mangoes and oranges are bought at very low prices by middlemen and this does not provide good returns for the farmers. This is in line with the findings of Aiga & Dhur (2006) who established that in many parts of Africa, markets barely exist, or they operate inefficiently, and many farmers and pastoralists are only loosely connected with the marketing system. They recommended that it is possible to address some of the marketing problems facing small farmers and pastoralists through improving physical infrastructure and market information systems.

The study further established that over reliance on rainfall fed agriculture is one of the biggest challenges in implementing food insecurity in Makueni County. It was also clear that poor soils that are not fertile make it difficult to engage in better farming practices. The findings agree with the position held by the Inter Academy Council (2004) that the



main challenge of food security in most African countries is related to the underdevelopment of the agricultural sector. They further argue that the sector is characterized by low fertility soils, minimal use of external farm inputs, environmental degradation, significant food crop loss both pre and post-harvest, inadequate food storage and preservation that result in significant commodity price fluctuation. Ninety five percent of the food in Sub-Saharan Africa is grown under rain fed agriculture. Food production is therefore vulnerable to adverse weather conditions.

It was also established that plans are underway to invest in irrigation based agriculture to ensure consistent farming, harvesting of rain water to provide constant supply of water during dry seasons, harvesting and conservation of fodder as well as crop diversification to avoid overdependence on a few crops that are not drought resistant. The findings agree with those by FAO (2008) which state that the main strategies that can assist reduce food insecurity in Africa include investing in irrigation; planting different varieties of crop species especially those with ability to survive in drought conditions; developing through research new varieties of drought resistant varieties of crops; encouraging intercropping; training and developing the capacity of the people in drought prone areas to harvest water as well as implementing and improving existing irrigation systems.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

The purpose of the study was to establish the strategic responses to challenges in implementing food insecurity strategies in Makueni County in Kenya. This chapter presents a summary of the findings with regard to the research problem, the conclusions, recommendations, suggestions for further research and the limitations of the study.

### **5.2 Summary of Findings**

The study established that there are a number of challenges to implementation of food security in Makueni County. It was revealed that the farmers in the County engage in poor agricultural practices that are not sustainable. The study findings indicated that in order to alleviate this problem, the County government has put in place a plan to educate the farmers on modern agricultural practices that will be able to enhance agricultural production. It was revealed that this will assist significantly in improving food security in the County.

It was also evident that the rapid population growth in Makueni County has put a lot of pressure on the existing resources including land. There is high demand for residential land and this has led to subdivision of available agricultural land into small portions for residential purposes. The study established that the high population growth rate is attributed to high fertility rate which stands at 5.1 compared to the national average of 4.6%. This growing population needs food and yet there is no expansion of food production in the county thus leading to food insecurity.

The study established that the strategic response involves reduction of rapid population growth. The county government has put in place plans to reduce the fertility rates through provision of reproductive and family planning education to the people. This is aimed at assisting to reduce the population since it exerts a lot of pressure on the existing resources including land. This education will be provided for both women and their spouses in order to assist reverse the current trend in population growth in the county.

The study established that changing climatic conditions is one of the main challenges to implementation of security. It was revealed that unreliable seasons are prevalent than in the 1970s. The study confirmed that farmers now cannot rely on rain fed agriculture in their farming activities. This has significantly affected the volume of food production in the County. The findings also revealed that the changing climatic conditions have led to some rivers becoming seasonal thus bringing water shortage in the region.

In order to alleviate overreliance on rainfall harvesting of rain water through the use of sand dams, water tanks and other available means to ensure availability of water for livestock farming and domestic use is being encouraged. This, as established from the study will assist in enhancing production of animal products and also reduce water borne diseases that hinder agricultural activities.

It was established from the study that poverty level is high in Makueni County and this is one of the challenges to implementation of security. Most of the people in the County cannot afford to purchase the required farm inputs that can enhance the production of food crops such as maize and beans. This situation has reduced the volume of food production significantly making it impossible for the growing population to access

enough food. In order to overcome this, the County government has put in place a plan to provide subsidized farm inputs to make it affordable to the farmers. This will improve farming activities in the County.

The respondents mentioned that in some occasions food crops are destroyed by wild animals especially in farms that are near national parks and game reserves such as Chyulu Game Reserve and Tsavo National Park. Livestock farmers have also had conflicts with foresters as they search for pasture and water in areas that are prohibited. The strategic response to this as established from the study includes engage with Kenya Wildlife Service to increase surveillance of their boundaries to ward off animals that may stray.

### **5.3 Conclusions**

Makueni County experiences a rapid population growth rate due to its high fertility rate which is slightly above the national average. The high population in the county has put pressure on the existing resources including land. There is high demand for residential space at the expense of agricultural activity. The high population has also led to deforestation as people depend on firewood and charcoal for cooking and heating. As a result water catchment areas are now destroyed and lack of water is such a great challenge contributing to food insecurity in the county. There is also the issue of soil erosion that renders the soils deficient of the required plant nutrients and lowers agricultural productivity. Over reliance on maize and beans has made it impossible to achieve food security since these crops are less drought resistant. Dependence on rain fed agriculture is perhaps the main cause of food insecurity since climatic conditions have changed and rain patterns are not predictable and reliable.

The strategic responses adopted to overcome these challenges include harvesting of rain water by constructing sand dams, exploiting other ways of expanding agricultural activity through irrigation, reversing the rapid population growth rate through provision of family planning education to people, diversification of crops to ensure that farmers plant crops that are more drought resistant, livestock diseases surveillance and vaccination as well as livestock improvement. Other strategic responses also include value addition of mangoes and oranges and proper marketing, construction of storage facilities to assist in grain storage during a bumper harvest.

#### **5.4 Recommendations**

The study has established that rapid population increase is among the major challenges to implementation of food insecurity in the County. Reversing this trend should be given a priority by the concerned authorities to ensure that the population does not exert too much pressure and reduce the available arable land or commercial agricultural activity. People should be provided with adequate education on reproductive health to enable them make correct choices that are more sustainable.

The study also established that there is overreliance on rain fed agriculture as well as on maize and beans crops that are less drought resistant. There is need to introduce modern agricultural practices such as use of green houses and diversification into other crops that are more drought resistant.

It was also evident that in some occasions the farmers experience challenges in getting good returns from their agricultural produce due to lack of market information and storage facilities. There is need to invest in the construction of storage facilities and value

addition factories that will assist the farmers to get better returns from their produce.

### **5.5 Suggestions for Further Research**

This study has established that there are a variety of strategic responses being adopted and some are yet to be implemented. It will be important to replicate this study after ten years to allow for implementation of the proposed strategies comprehensively. This will assist to establish the level of success achieved in implementing some of these strategic responses.

It will be necessary to carry out a comparative study with other regions or countries that have been successful in overcoming food insecurity. This will assist in gaining more understanding on the strategic responses they adopted.

### **5.6 Limitations of the Study**

The findings of this study are only directly applicable to Makueni County. They cannot be used to generalize on the circumstances prevailing in other regions since the context and issues surrounding other regions may be different. Makueni County is currently experiencing political wrangles and this is likely to affect some of the activities that are being carried out to address food insecurity. The direction and strategies may be affected by the turn of events as time progresses depending on the political environment prevailing in the county.

### **5.7 Recommendations for Policy and Practice**

Makueni County needs to come up with policies that will govern sustainable agricultural activities and lead to environmental conservation. This will assist in improving the changing climatic conditions that have been affected by detrimental human activities. It

will be necessary to come up with a detailed policy paper that seeks to address all the challenges to food insecurity in Makueni County. The policy paper should also gather views from stakeholders.

## REFERENCES

- Aiga & Dhur, (2006). Nutrition in Africa in the global economy: *Perspectives, Australian Governments Reform Council*. Retrieved March 26, 2012 from [http://www.coag.gov.au/coag\\_Meetingoutcomes/20080326/docs/CRC\\_report\\_to\\_](http://www.coag.gov.au/coag_Meetingoutcomes/20080326/docs/CRC_report_to_)
- Andae, G. (2014) Ministry clears 3,000 acres for Galana pilot irrigation scheme. *Business Daily*, Nairobi Kenya.
- Andersen, P. Rajul, & Mark, R. (1997). The World Food Situation: Recent Developments, Emerging Issues, And Long-Term Prospect. *Food Policy Report of the International Food Research Institute*.
- Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage, *Journal of Management, Vol.17, No.1, page.99-120*.
- Barney, J.B. (1986). Strategic Factor Markets: Expectations, Luck, and Business Strategy. *Management Science Journal, Vol. 3 page 5- 10*
- Bartkus, B.R., Morris, S.A. & Seifert, B. (2004). *Governance and Corporate Philanthropy: Business and Society*, 41(3), 319-344.
- Bebbington, A. (2004). *Geographies of Development Intervention*. 4<sup>th</sup> Edition. Boston: McGraw-Hill. USA.
- Behar, M. S. Brahmanand, P. S. Kumar, S. Ghosh, S. Chowdhury, R. Singh, R. & Nanda, P. (2013). Challenges to food security in India. *Current Science 104 (7) Indian Institute of Public Administration, New Delhi*.
- Braun, J. (2007). *The World Food Situation*: 1st Edition, Pitman Publication, London, U.K.
- CAADP. (2011). *Countries with Compacts/Investment Plans Status Update*. November 2011. CAADP: Midrand, South Africa.
- CFS. (2013). *Global Strategic Framework for Food Security & Nutrition (GSF)*. Committee on World Food Security Global Strategic Framework, 2nd Edition. Challenges & Opportunities. African Study Monographs 22 (3).
- Cho, S. Gillespie, D. F. (2006). *A Conceptual Model Exploring the Dynamics of Government*- 1<sup>st</sup> Edition, McGraw-Hill Publisher, New York, U.S.A.
- Claudio, O. & Delang. (2006). *The role of wild food plants in poverty alleviation and biodiversity conservation in tropical countries*. *Progress in Development Studies* 6 (4): 275–286. Doi :10.1191/1464993406ps143.



- COAG. (2009). *Report to the council of Australian Governments, Council of COAG2009*.
- Cohen, B. (2006). *Urbanization in developing countries*: 2nd Edition, Palgrave Macmillan Publisher, New York, U.S.A.
- Das, T. K. & B. S. Teng. (2000), A Resource-Based Theory of Strategic Alliances, *Journal of Management, Vol. 26, No.1, page. 31-61*.
- De Schutter & Olivier. (2010). *The right to food*. United Nations. pp. 1–21. Retrieved
- Dierickx, I. & K. Cool. (1989a), Asset Stock Accumulation and Sustainability of Competitive Advantage, *Management Science, Vol. 35, No.12, page.4-11*.
- Dunn, P. (2008). *Strategic Responses by a Nonprofit When a Donor Becomes Tainted*. 1st Edition, Pitman Publication, London, U.K.
- FAO, WFP and IFAD. (2012). *The State of Food Insecurity in the World 2012*. Economic growth is necessary but not sufficient to accelerate reduction of hunger and malnutrition. Rome, FAO
- FAO. (2008). *An Introduction to the Basic Concepts of Food Security*. EC - FAO Food Security Programme.
- Foss, N. J. (2005), *Strategy, economic organization, and the knowledge economy: Critical perspectives on foundations*, Oxford University Press.
- Gregory, P. J. (2005). *Climate change and food security*. 1st Edition, Pitman Publication, London, U.K.
- Guo, C. & Acar, M. (2005). *Understanding Collaboration Among Nonprofit Organizations* 4<sup>th</sup> edition. Boston: McGraw-Hill. USA.
- Hilton. (2010). The Southern Africa Response to Food Security and Global Food Crisis. *Trade Knowledge network, Series on Trade and Food Security Policy Report 7*.
- Info track East Africa Ltd. (2014, January 15). Kenya Counties, Nairobi, Kenya.
- Inter Academy Council, (2004). Realizing the promise and potential of African agriculture: Science and technology strategy for improving agricultural productivity and food security in Africa. Inter Academy Council Report, June. IAC Amsterdam, The Netherlands.
- James, R. (2008). *Food crisis will take hold before climate change, warns chief scientist*. The Guardian (UK). Retrieved November 13, 2011.

- Jayne, T. S., Myers, R. J. & Nyoro, J. (2005). *Effects of Government Maize, Marketing and Trade Policies on Maize Market Prices in Kenya*. 4<sup>th</sup> Edition. Boston: McGraw-Hill. USA.
- KARI (2010) Policy Responses to Food Crisis in Kenya. Accessed on 24/8/2015 from <http://www.foodsecurityportal.org/kenya/food-security-report>
- Kenya Food Security Steering Group, 2000, *Kenya Food Security Situation Report*, December 2000.
- KFSG (2008) Collaborative report of the Kenya Food Security Steering Group. Government of Kenya, Nairobi.
- Kigutha, H. N. (1995). *Effects of Seasons on Household Security and Nutritional Status of Smallholder Rural Households in Nakuru District*. Food and Nutrition Studies Program, Report Number 55/1995.
- Kirwa, N. (2014) Strategic Responses by the Ministry of Agriculture, Livestock and Fisheries to Challenges of Food Security in Kenya. An MBA project submitted to the University of Nairobi.
- Kothari, C. R. (2004), *Research Methodology*: 1st Edition, Pitman Publisher, London, UK.
- Maede, B. & Rosen, N. (2013) *International Food Security Assessment, 2013-2023*. Makueni County Government. (2013). Makueni County Integrated Development Plan (CIDP). Makueni County Government.
- Mintzberg, H. (1987). The Strategy Concept I: Five Ps for Strategy. *California Management Review*, 30 .1.
- Mwiria, K. & Wamahiu, S. P. (1995). *Issues of Educational Research in Africa*. Nairobi: East African Educational Publishers.
- Nachmias, C.V. & Nachmias, D. (1996) *Research Methods in the Social Sciences*. St. Martin's Press.
- Narayan, D. & Nyamwaya, D. (1995). *A Participatory Poverty Assessment Study Kenya*. February – April 1994. A World Bank & UNICEF Report.
- Nickols, F. (2010). *Three Forms of Strategy* 4<sup>th</sup> Edition. Boston: McGraw-Hill. USA November 13.

- Nuncio, J. (2013) *Hungry Neighbours? Indonesia's Food Strategy and Water Security*. Future Directions International Pty Ltd. Dalkeith, Australia
- Nyangito, H. & Nzuma, J. (2004). *Impact of Agricultural Trade and Related Policy reforms on Food security in Kenya*. Nairobi: KIPPRA.
- Okala, U. A. & Ijeoma, U. B. (2014). Challenges of Food Security in Nigeria: Options Before Government, *Arabian Journal of Business & Management Review (OMAN Chapter)*, Vol 4. No.1.
- Oldewage, T. E (2006). *Poverty, household food insecurity and nutrition*: 2nd Edition, Published by ACTS, Nairobi, Kenya.
- Porter, M. (2000). *What is Strategy?* 1st Edition, Pitman Publisher, London, UK.
- Robson, C. (2002). *Real World Research*. Blackwell, (2nd edition).
- Shiundu, A. (2011). *Government Urged to Buy Excess Maize to Stem Hunger*. 12 January 2011. Daily Nation: Nairobi, Kenya.
- Songwe, V. (2012). *Strategies to Improve Food Security in Africa*. *Foresight Africa*, 4th Edition. Boston: McGraw-Hill. USA.
- Teece, D. J. Pisano, G. & A. Sheen. (1997). Dynamic Capabilities and Strategic Management, *Strategic Management Journal* Vol. 18, No.7, pp.9-33.
- The Kenya Food Security Steering Group (KFSSG). (2008.) *Kenya Livelihood Database*.
- Tóth, G. (2012). *Impact of land-take on the land resource base for crop production in the European Union*. 4<sup>th</sup> Edition. Boston: McGraw-Hill. USA.
- Walsoft, (2008). *Experts: Global Food Shortages Could Continue for Decades*. Market oracle.co.uk. Retrieved November 13, 2011.
- Webb, P. (2006). Measuring household food insecurity: why it's so important and yet so difficult to do. *The Journal of nutrition* 136 (5): 1404s–1408s.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal* Vol. 5, No. 2, pp.171-80.
- World Bank (2015) Makueni County. Accessed on 24/8/2015 from <http://data.worldbank.org/country/kenya/>

## **Appendix 1: Interview Guide**

### **A: Strategic Responses to Food Insecurity**

1. What are the early warning signs to food insecurity?
2. What factors contribute to food insecurity?
3. What challenges are faced in implementing food security?
4. What solutions do you have to improve food insecurity?
5. What emergency responses do you have food insecurity?
6. What are the coping strategies on food insecurity?
7. How do you help farmers access to the market for farm produce?
8. How does the government help address food insecurity?