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CENTRE FOR ADVANCED STUDIES IN ENVIRONMENTAL LAW AND
POLICY

IMPACT OF THE LEGAL AND POLICY FRAMEWORKS ON FOOD
SECURITY IN KENYA: THE CASE OF LAIKIPIA COUNTY

BY

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DECLARATION

This Thesis is my original work and has neither been presented nor is it currently under consideration for an award of degree in any other college or university.

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DEDICATION

This study is dedicated to my father, Titus Katembu and my mother, Queen Katembu for their encouragement to complete my study and graduate, for providing their finances and constantly praying for me. I also thank my husband Stanley Mumo for always assuring me that I can do it when I constantly doubted my ability. I further wish to thank my children, Shanna Wendo and Scott Teyi, for their patience and understanding when mum had to work long hours. It was your, encouragement, support, patience, and understanding during the period of my study as well as your continued prayers that this research project was made successful.

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ABSTRACT

The Legal and policy frameworks on food are established to assist in coordination of agricultural activities, manage food supply chain, and guarantee food availability for the future. In the Kenyan context, the country has a National Food and Nutrition Security Policy Implementation Framework and other separate legal instruments for managing the food situation in Kenya. However, the link between the effectiveness of Kenya's food legal and policy frameworks and food security in the country has never been established due to inadequate research in this field. This study sought to fill this gap. The following specific objectives guided the study: to assess the levels of food security in households in Laikipia County; to establish the adequacy of the legal and policy frameworks regulating food systems in Laikipia County; to investigate challenges facing the implementation of legal and policy frameworks regulating food systems in Laikipia County; to document role of Laikipia County Government in food security, and to establish the optimal regulatory arrangement guaranteeing food security for people in Laikipia County. This study aimed to benefit Laikipia County Government, Government of Kenya, farmers in Laikipia County, agricultural policy developers, scholars and academicians and other stakeholders in assessing food security in Laikipia County and how it be improved. This study supported by Brundtland 1987 Sustainable Development theory as it relates to food sustainability. Due to logistical challenges and time constraints this study adopted purposive sampling to select 10 Laikipia farmers' representatives that sits Executive Committee for interviews. The study also purposively selected (5) Laikipia County Department of Agriculture officials and 3 national government agricultural and food security experts from the Ministry of Agriculture for interviews. In conclusions, the study findings revealed there were several legal, administrative, financial, operational, land ownership, wildlife related, farmers related, and climatic related challenges that need addressed to boost implementation of food frameworks in Laikipia County. To address financial inadequacy in agriculture, this study recommends both Laikipia County Government and Government of Kenya should comply with (CAADP) provision of 10 percent of total annual budgets allocation toward boosting agricultural productivity. To address failure by Laikipia county officials to understand contents of NFNSP-IF (2017-2022) well and its operational tools; all stakeholders should establish forums, seminars, or workshops where all food frameworks regulating Kenya's food and agricultural industry should be discussed, sensitized, and reviewed with the aim to improve their implementations. To address constant human wildlife conflict and destruction of crops, all protected areas harbouring wildlife should be fenced and all protocols reviewed between animals and humans. This study recommends Laikipia County Government to undertake comprehensive staff competency assessment to make the county become effective to farmers, in food productions and the implementations of food frameworks. See section 5.4 for further recommendations. This study suggests that similar studies replicated in other counties in Kenya to determine the trends, reliability, validity, and accuracy in the field of food security.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.2 Statement of the Problem.....	5
1.3 Research Objective	8
1.4 Specific Objectives	8
1.5 Research Questions	8
1.6 Hypothesis.....	9
1.7 Justification of the Study	9
1.8 Theoretical Framework.....	10
1.9 Conceptual Framework.....	13
1.10 Organization of the Study	14
CHAPTER TWO: LITERATURE REVIEW	16
2.1 Introduction.....	16
2.2 To assess the levels of food security in households in Laikipia County	16
2.3 The adequacy of frameworks regulating food systems in Laikipia County	21
2.4 Challenges in implementation of frameworks regulating food in Laikipia.	25
2.5 The role of county government in ensuring food security in Laikipia County.....	30
2.6 Optimal regulatory arrangement guaranteeing food security in Laikipia County.	33
2.7 Research Gaps.....	36
CHAPTER THREE: RESEARCH METHODOLOGY.....	38
3.1 Introduction.....	38
3.2 Research Paradigm.....	38
3.3 Research Design.....	39
3.4 Study Site.....	39
3.5 Target Population.....	40

3.6 Sampling technique and sample size	40
3.7 Data Collection Instruments	41
3.8 Description of data collection procedure	41
3.9 Data Analysis	42
3.10 Ethical Considerations	42
3.11 Study Limitation	43
CHAPTER FOUR: RESULTS AND DISCUSSIONS	44
4.1: Introduction.....	44
4.2 Response Rate.....	44
4.3 General Laikipia County food security information.....	45
4.4 To assess the levels of food security in households in Laikipia County	49
4.5 The adequacy of frameworks regulating food systems in Laikipia County.	58
4.6 Challenges in implementation of frameworks regulating food in Laikipia.	67
4.7 The role of county government in ensuring food security in Laikipia County.....	75
4.8 Ideal regulatory food security system proposed for Laikipia County.....	80
CHAPTER FIVE: SUMMARY , CONCLUSION & RECOMMENDATIONS..	82
5.1 Introduction.....	82
5.2 Summary	82
5.3 Conclusions.....	85
5.4 Recommendations.....	85
5.5 Suggestions for Further Study	88
REFERENCES	89
APPENDICES	97
APPENDIX I: INTRODUCTORY LETTER.....	97
APPENDIX II: THE KEY INTERVIEW GUIDE FOR LAIKIPIA FARMERS	98
APPENDIX III: INTERVIEW GUIDE FOR LAIKIPIA COUNTY OFFICIALS ...	99
APPENDIX IV: INTERVIEW GUIDE FOR GOVERNMENT EXPERTS	101
APPENDIX V: LAIKIPIA COUNTY MAP	102

LIST OF FIGURES

Figure 1.1 Sustainable Development Pillars	11
Figure 1.3 Conceptual Framework.....	13

LIST OF ABBREVIATIONS

ASDS	-	Agriculture Sector Development Strategy
AU	-	African Union
CAADP	-	Comprehensive Africa Agriculture Development Programme
CESR	-	Center for Economic and Social Rights
CFA	-	Comprehensive Framework for Action
CFS	-	Committee on World Food Security
DaO	-	Delivering as One
EAC	-	East African Community
FAO	-	Food and Agriculture Organization of the United Nations
FGDs	-	Focused Groups' Discussions
FNSAP	-	Food and Nutrition Security Action Plan
FS	-	Food systems
FSAP	-	Food Security Action Plan
GFSS	-	Global Food Security Strategy
GIS	-	Geographic Information System
GSF	-	Food Security and Nutrition
GSFFSN	-	Global Strategic Framework for Food Security and Nutrition
GT	-	Grounded Theory
HLTF	-	Global Food Security Crisis
ICESCR	-	International Covenant on Economic, Social and Cultural Rights
IFAD	-	International Fund for Agricultural Development
ITSUR	-	Iterative Seemingly Unrelated Regression Procedure
KCDMS	-	Kenya Crops and Dairy Market Systems Activity
KWS	-	Kenya Wildlife Service
LA/AIAIDS	-	Linear Approximate Almost Ideal Demand System
MDGs	-	Millennium Development Goals
MoLPP	-	Ministry of Lands and Physical Planning
NACOSTI	-	National Council for Science, Technology and innovation
NASEP	-	National Agricultural Sector Extension Policy

NCPB	-	National Cereals and Produce Board
NEPAD	-	New Partnership for Africa's Development
NFSNP	-	National Food Security and Nutrition Policy
NLC	-	National Land Commission
SDGs	-	Sustainable Development Goals
SFS	-	Sustainable Food System
TJRC	-	Truth Justice and Reconciliation Commission
UDHR	-	Universal Declaration of Human Rights
UN	-	United Nations
UNCED	-	United Nations Conference on Environment and Development
UNDAF	-	United Nations Development Assistance Framework
USAID	-	United States Agency for International Development
WFP	-	World Food Programme

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Today, in the 21st century, food security has become a major source of attention by world orders globally. Food security is defined by World Food Summit (WFS) in November 1996 as a state when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Whereas, food is defined as any nutritious substance that human beings eat, or drink and absorbed in the body in order to maintain life and support growth.¹ Thus, food is a basic need and a human right. Article 25(1) of the 1948 Universal Declaration of Human Rights (UDHR) states; "everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing."² The International Covenant on Economic, Social and Cultural Rights (ICESCR) Article 11 (1) on its part states, "this covenant recognizes the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions."³ Access to food by

¹ Alderman, H. & Yemtsov, R. 2019. How can food safety nets contribute to economic growth? World Bank Economic Review, 28(1): 1–20.

² The Universal Declaration of Human Rights (UDHR) is a progressive document in human life history. Developed with representatives from different cultural background all over the world, the Declaration adopted by the United Nations General Assembly on 10th December 1948 in Paris, is standard of achievement for all people all over the world. The document outlines the basic human rights and freedoms all over the world. It recognizes every right including the right to food that we have in the world today. Refer to AfDB. 2019. Feed Africa Strategy for agricultural transformation in Africa 2019-2025. Abidjan. 4(2): 1-4

³ The International Covenant on Economic Social and Cultural Rights (ICESCR) was ratified by the United Nations General Assembly in December 16th 1966. As international rights document, ICESCR give framework for protection of social, cultural and economic human rights and freedoms all over the world including rights to conducive workplace, adequate standard of living, better health, education and access to foods. Refer to United Nations Food and Agriculture Organization. The state of the United Nations. Millennium Development Goals Status Report. UN, New York, 2019. 83(4): 74.

all is, therefore, not just any government choice but a function mandated by international human rights and covenants.

In Kenya, Article 43(1) (c) of Constitution of Kenya 2010 on Human Rights outlines that every individual has right of freedom from hunger, have access to quality food hence provide standard approach to food security in Kenya.⁴ What this means is that no Kenyan should die, suffer, or starve of hunger. It further means that National Government, County Governments and all agricultural as well as food processing stakeholders should create, make affordable, and available quality foods in all the markets in Kenya where they can be obtained by consumers. Agriculture has been defined as the art and science of growing plants and other crops and raising animals for food, other human needs, or economic gain.⁵ Therefore it can be stated that agriculture is the means through which food is made available and when made available and nutritious at all times then food security can be ensured. However, despite food being significant to human beings, as well as enshrined as part of human rights, food to all or access to food by all is still not guaranteed in the 21st century.⁶

In Kenya, the Consumer Federation of Kenya (COFEK) sued the Government of Kenya for failing to respond appropriately to protect Kenyans from hunger in *Consumer Federation of Kenya (COFEK) v Attorney General & 4 others [2012]eKLR* (Petition 88 of 2011). The case attempted to place failure on the Kenya Government to follow existing food legal and policy frameworks to ensure there is stability to provide adequate food in the country to sustain Kenyans and prevent them from

⁴ FAO. United Nations Food and Agriculture Organization. The state of the United Nations. Millennium Development Goals Status Report. UN, New York, 2019. 83(4): 74.

⁵ Ben G Bareja, 2010. edited Apr. 26, 2019. Retrieved from <https://www.cropsreview.com/what-is-agriculture.html#:~:text=Agriculture%20is%20the%20science%20and,26%2C%202019>

⁶ The World Bank. Employment in Agriculture. The World Bank Group, New York, 2019. 5(4): 41-42.

hunger. COFEK further argued Ministry of Finance, Ministry of Energy, The Attorney General, Energy Regulatory Authority and National Oil Corporation never stabilized fuel process thus encouraging high food prices. The Court established the right to food contains both economic and social tenets that the State is obligated to provide. The Court held that Kenya being a member of ICESCR, and in Article 43 of Constitution of Kenya, has the mandate to provide and fulfil the realization that every Kenyan has access food and protected from hunger. The Court however ruled that COFEK had not proved beyond reasonable doubts that Kenya government had failed on its duties to protect its citizens from hunger.⁷

In March 2019, News Africa reported more than 10 Kenyans died of hunger and over one million living under starvation. In August 2011, more than 14 Kenyans died of hunger in Turkana region. Kenyans also faced severe hunger in 1990-1992 1993-1995 1996-1998 1999-2001 2002-2004 2005-2007. According to Government of Kenya report 2019, 4 million Kenyans are food insecure and need food assistance across the country.⁸

Food and Agriculture Organization of the United Nations (FAO) associate Kenya hunger, starvations and deaths to poor planning and lack of assessment of food policies and regulations effectiveness towards agricultural performance in Kenya. According to FAO, Kenya's agriculture is then main food basket for the citizens and whiles the country has robust food policy frameworks, failure to fully implement such frameworks and assess their impacts results in food deficits that expose Kenyans to

7 FAO. United Nations Food and Agriculture Organization. The state of the United Nations. Millennium Development Goals Status Report. UN, New York, 2019. 83(4): 74.

8 News Africa, 2019. Nearly one million drought-hit Kenyans at risk of starvation. Available from: <https://www.trtworld.com/africa/nearly-one-million-drought-hit-kenyans-at-risk-of-starvation-25088#>: (Accessed September 10, 2020).

hunger and even deaths. Kenya's agriculture sector produces millions of bags of arable crops every year that Kenyans consume. For instance, in 2019, Kenya harvested 34 million bags of maize, 200,000 tonnes of wheat, 155,000 tonnes of sorghum, and 310, 000 tonnes of other crops with a deficit of 15%, 44.4%, 13.9%, and 16.9% respectively.⁹

Kenya's food is controlled by National Food and Nutrition Security Implementation Framework (2017-2022) and National Food and Nutrition Security Policy 2011. The other instruments are Kenya Youth in Agribusiness Strategy 2017-2021, Kenya Climate Smart Agriculture Implementation Framework 2018-2027, Roots and Tuber Crops Strategy 2019-2022, National School Meals and Nutrition Strategy 2017–2022, and Kenya Vision 2030, and among others.¹⁰ These policy documents inform food management and production in Kenya. For example, National Food and Nutrition Security Policy Implementation Framework categorize food system in Kenya into five levels; domestic production (local agricultural activities); domestic, regional, and international food trade; agro-processing and value-addition; storage facilities; strategic food reserves; and commercialization of agriculture.¹¹ In Laikipia County, which was this thesis case study for instance, 40 per cent of the local live below poverty line and are perennially food insecure. Another 40 per cent are food self-sufficient but become vulnerable when during food crisis in the country. The other 20 per cent were food secure.¹² It was based on the above facts that this study was

⁹ FAO. United Nations Food and Agriculture Organization. The state of the United Nations. Millennium Development Goals Status Report. UN, New York, 2019. 83(4): 74.

¹⁰ Ibid, 31-34

¹¹ Scherr, S. J., & McNeely, J. A. (2019). Farming with nature: The science and practice of eco-agriculture. Washington, DC: Island Press, 52, 621–652.

¹² Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

undertaken to understand the impact of the legal and policy frameworks on food security in Laikipia County.

1.2 Statement of the Problem

All human beings have rights to constant quality basic foods as enshrined in UDHR Article 25(1), ICESCR Article 11 (1), and the Constitution of Kenya 2010 Article 43 (1) (c) as described in the background of the study above. However, despite global and local laws entrenching food as basic human right, food insecurity has continued to threaten access and supply of food to significant proportion of global and Kenya's population.¹³

According to World Food Programme (WFP), globally, an estimated 820 million people in the world are still hungry today.¹⁴ In Africa, 257 million people are experiencing hunger, which is 20 percent of the total population.¹⁵ In Kenya, by 2019, 4 million Kenyans were reported to be in a food insecurity crisis. In Laikipia County, 40 percent of population are food insecure, another 40 percent is unstable while the rest of 20 percent are food secure.¹⁶

This dire food insecurity situation prompted United Nations to develop UDHR, ICESCR, Sustainable Development Goals (SDGs), Global Strategic Framework for Food Security and Nutrition (GSF) and UN Comprehensive Framework for Action (CFA) to guide world food production and supply to guarantee everyone's right to

¹³ Food and Agriculture Organization of the United Nations. Sustainability assessment of food and agriculture systems. Smallholders app. FAO, Rome, 2019. 64 (8), 18-24.

¹⁴ Seleshi, Y. & Camberlin, P. 2019. Recent changes in dry spell and extreme rainfall events in Ethiopia. *Theoretical and Applied Climatology*, 83(1-4), 225.

¹⁵ RESULTS UK, Concern Worldwide, and University of Westminster. 2019. What Works for nutrition? Stories of success from Vietnam, Uganda and Kenya. London and Dublin. 28(3), 91.

¹⁶ Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

access food.¹⁷ In Africa, Africa Union (AU) developed Comprehensive Africa Agriculture Development Programme (CAADP) while Eastern Africa Block Countries (EAC) formed EAC Food and Nutrition Security Action Plan (FNSAP) 2018-2022. To respond and address food insecurity situation in the country, the Government of Kenya came up with National Food and Nutrition Security Policy Implementation Framework (2017-2022) which is a multi-set of other food regulations in the country. The County Government of Laikipia has its food policy and budget in Approved Supplementary Budget Estimates of Recurrent and Development Expenditures developed every year.¹⁸

However, despite global and local legal and policy frameworks in place towards food security, RESULTS UK opines that there has been stakeholders laxity, lack of commitment, and challenges in implementation of such frameworks that have unknown ramification or impact in food insecurity across the globe.¹⁹ Therefore, while legal and policy frameworks have an implication on the regulation of food systems and guarantee the right to food security, their impact on the same is yet to be ascertained.

In Kenya, Article 43 (1) (e) of Constitution of Kenya 2010 outlines that each Kenyan citizen has rights of freedom from hunger, and should have access to affordable, acceptable and quality foods. Despite this right to food being enshrined in the Constitution and thus having an impact on the regulation of food, its implementation

¹⁷ Brandão, A. S. P. & Martin, W. J., 1993. Implications of agricultural trade liberalization for the developing countries. *Agricultural Economics*, 8(1), pp. 313-343.

¹⁸ Oloo, J. E. O. (2019). Food safety and quality management in Kenya: An overview of the roles played by various stakeholders. *African Journal of Food, Agriculture, Nutrition and Development*, 10(37).

¹⁹ RESULTS UK, Concern Worldwide, and University of Westminster. 2019. What Works for nutrition? Stories of success from Vietnam, Uganda and Kenya. London and Dublin. 28(3), 3-7.

is not visible as the government estimates that 4 million people still need food assistance across the country.²⁰ Further, Glopolis opines that while Kenya has several food regulation policies, many of such policies are not fully operational and implementable due to lack of commitment, inadequate funds, lack of political goodwill and low farmers sensitization and awareness programmes across the country.²¹ In fact, according to Glopolis, 80 percent of Kenya's food protection, food security, food nutrition and value addition policies just exists in papers and not practically implemented in agricultural fields or markets.²² As a result, it is not easy to ascertain the effectiveness of such food frameworks or regulations on food security in Kenya.²³

The Constitution of Kenya, under Schedule Four (IV), enumerates one of the functions and powers of the County Government as Agriculture. Therefore, Agriculture, at the core of food security is a function of the County Government and the agricultural policy function being issued to the National Government.²⁴ Based on the aforementioned, every financial year, the County Government of Laikipia prepare budget estimates and policy that runs its food and agricultural affairs within the county. However, as Kilonzi report, the Constitution of Kenya 2010 is too young and the impact of steering and control of agriculture and food supply by counties on food security are still unknown.²⁵

²⁰ Ibid, 64-66

²¹ Glopolis, 2019. *Food Security and Agricultural Trade in Kenya*, Prague: Glopolis. Government of Kenya, June 2019, Government Printer, Nairobi. vol. 95, no. 1, pp. 1-5.

²² Ibid, 11.

²³ Ahaibwe, G., Mbowe, S. & Lwanga, M.M. 2019. Youth Engagement in Agriculture in Uganda: Challenges and Prospects. Research Series No. 106. Kampala, Economic Policy Research Centre. 7: 28

²⁴ Government of Kenya, (2019). The Constitution of Kenya 2010, 1st edn. Nairobi: Government Printers.

²⁵ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Orientation in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

It was based on the above background that this study was undertaken to understand the impact of the legal and policy frameworks on realising food security in Kenya with focus on Laikipia County.

1.3 Research Objective

The main objective of this study was to assess the impact of the legal and policy frameworks on food security in Laikipia County.

1.4 Specific Objectives

These objectives guided the study:

- i. To assess the levels of food security in households in Laikipia County.
- ii. To establish the adequacy of the legal and policy frameworks regulating food systems in Laikipia County.
- iii. To investigate the challenges in the implementation of legal and policy frameworks regulating food systems in Laikipia County.
- iv. To analyse the role of the County government in ensuring food security in Laikipia County.

1.5 Research Questions

These research questions guided the study:

- i. What are the levels of food security in households in Laikipia County?
- ii. How adequate are the legal and policy framework regulating food systems in Laikipia County?
- iii. What challenges exists in the implementation of legal and policy frameworks regulating food systems in Laikipia County?

- iv. What is the role of the County Government in ensuring food security for people in Laikipia County?

1.6 Hypothesis

According to FAO's 2018 statistics, Agriculture contributes 25 per cent Gross Domestic Product (GDP) and another 27 per cent indirectly. This sector further employs 40 per cent of all Kenyans and 70 per cent people in the rural.²⁶ It is source of livelihood for over 80 per cent of Kenyans.²⁷ However, Kenya's food industry is facing myriad of challenges including high cost of production, climate change, and instabilities. But the wellbeing of this sector means the wellbeing of Kenya's economy. Thus, legal and policy food frameworks are developed to ensure wellbeing of food industry in Kenya thus guarantee development.²⁸ The development and implementation of vibrant law and policy frameworks in the agriculture sector is thus vital in ensuring food security.

1.7 Justification of the Study

The need to undertake this study was based on the rationale to assess whether Kenya's existing legal and policy frameworks have a positive or negative effect on realization of food security in Laikipia County as per the Kenya's Vision 2030, Goal Number 2 of the SDG's, and the Constitution of Kenya 2010 Article 43(1)(c).²⁹

²⁶ Thow, A.M., Fanzo, J. & Negin, J. 2019. A Systematic Review of the Effect of Remittances on Diet and Nutrition. *Food and Nutrition Bulletin*, 37(1): 42-64.

²⁷ *Ibid*, 69.

²⁸ Schmidhuber, J. & Tubiello, F.N. 2019. Global food security under climate change. *PNAS*, 104(50): 19703–19708.

²⁹ Morrison, J. 2019. Managing food security risks and intra-regional trade in Africa. Rome, FAO, pp. 1-3.

The findings from this study would inform Kenya's agricultural policy makers on how to align the existing legal and policy frameworks with agricultural activities in Laikipia County to guarantee food security for Laikipia people.

1.8 Theoretical Framework

The World Commission on Environment and Development headed by Norway Prime Minister Mrs Harlem Brundtland came up with a report called Our Common Future. This report defined what sustainable development is. According to the report, sustainable development is "*Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.*"³⁰

The concept of sustainable development incorporated in Rio Declaration and Agenda 21 adopted in June 14th 1992 by the United Nations on Environment and Development (UNCED).³¹ Kenya, therefore, became part of Rio Declaration and Agenda 21 through its United Nations membership and committed itself to the implementation of measures agreed at UNCED.³²

Sustainable development is concerned of undertaking or advancing natural systems capacities without with due regard to the emerging and future social and humanity challenges. This concept was adopted in 1970s in equilibrium economy with basic ecological support systems.³³ Sustainable development explains that way modern economies should address their social, economical, and cultural needs while giving

³⁰ Brundtland, G.H. (1987), Our Common Future, Oxford University Press, Oxford cited with approval by Aiking. H & Boer J (2004). 41(2), 2-7.

³¹ Ibid, 19

³² Noble, B. (2014). Introduction to environmental impact assessment: A guide to principles and practice (3rd ed.). Don Mills: Oxford University Press, p.23-24

³³ Frater P and J Franks Measuring agricultural sustainability at the farm-level: A pragmatic approach. Int J Agric. Management, 2019;2(4): 227.

emphasis on how billions of lives in the future will also address their needs in the same economic, social and cultural systems.³⁴

Figure 1.1 Sustainable Development Pillars



Balance of the Three Pillars

Source: Brundtland Report (1987)

Based on figure 1.1 above, sustainable agriculture means cultivation of healthy harvests and livestock with no adverse effect on environment. This form of agriculture balance between food production and ecological wellbeing of the environment. Thus, sustainable agriculture means conserving water, reducing fertilizer use, reduced use of pesticides, and promoting biodiversity system. Sustainable agriculture also means agriculture that is economically justifiable and sensible, socially acceptable and environment friendly. To be sustainable, it further means agriculture must be social, equitable, and bearable in these scales.

The Brundtland 1987 Sustainable Development Theory was adapted in this study to underpin that for current and future Kenya's generations to be relieved of food insecurity and obtain or inherit reliable sources of food systems and productions; the

³⁴ Ibid, 314.

present generation must explore existing Kenya's legal and policy frameworks and use the available agricultural resources wisely to fulfil the present human population needs while protecting future needs and demands.³⁵ In the sense of three pillars, current agricultural production practices and food security measures promoted by existing Kenya's legal and policy frameworks must be economical in nature, as well as social and environmental friendly in order to be sustainable and meet future food security needs.³⁶

³⁵ Chieko Umetsu; Resilience Of Social-Ecological Systems For Food Security, Graduate School of Fisheries Science and Environmental Studies Nagasaki University, p. 41-43

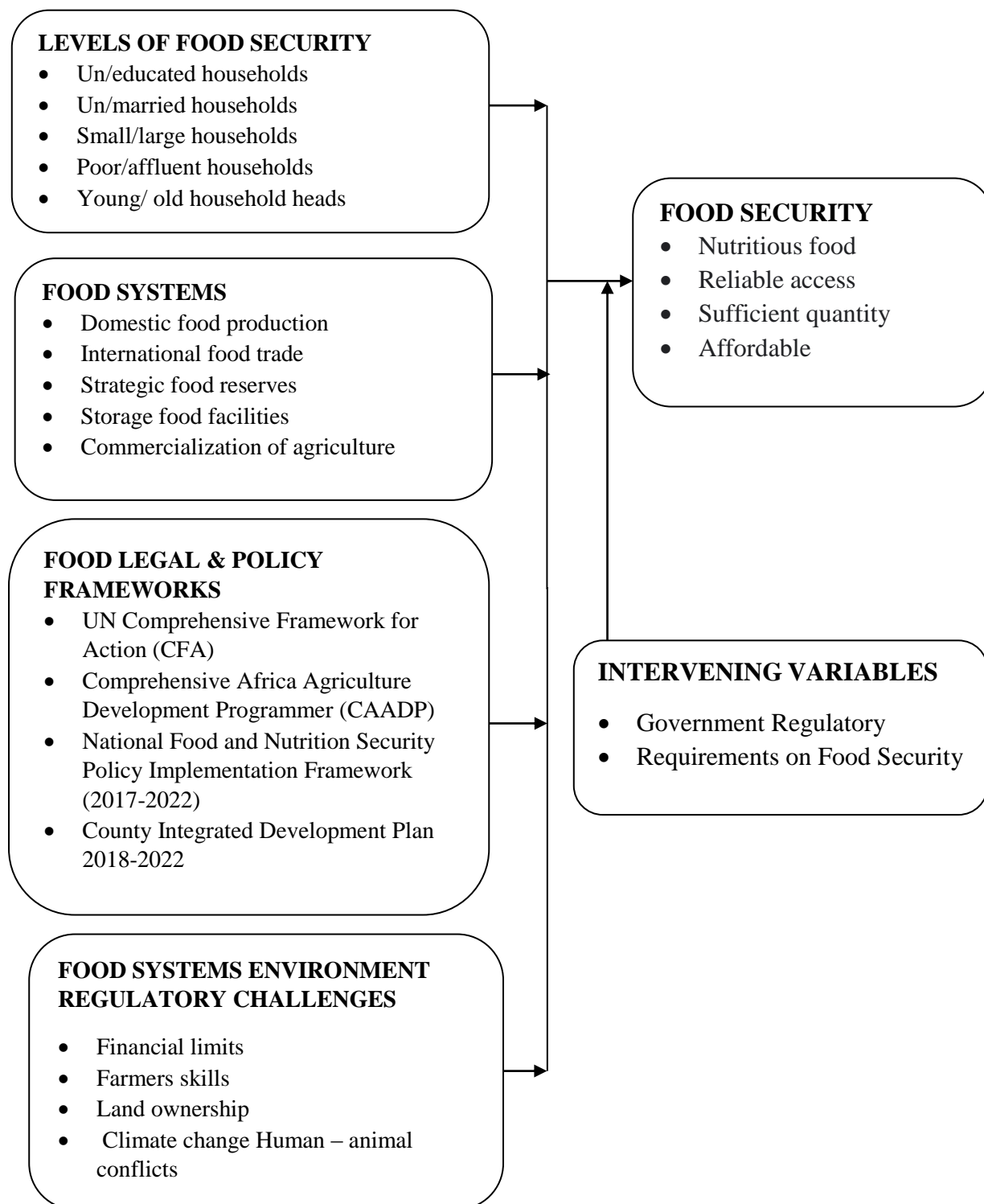
³⁶ Narayan, P., Naryan, S. & Mishra, S. 2019. Do Remittances Induce Inflation? Fresh Evidence from Developing Countries. *Southern Economic Journal*, 77(4): 333.

1.9 Conceptual Framework

Figure 1.3 Conceptual Framework

Independent Variables

Dependent Variable



Source: Author (2020)

To achieve food security in Laikipia County, all households despite levels of income, education, age, size and type must have at all times nutritious, reliable, sufficient, and affordable foods. However, this means the existing food regulations or frameworks such as UN Comprehensive Framework for Action (CFA), Comprehensive Africa Agriculture Development Programme (CAADP), National Food and Nutrition Security Policy Implementation Plan 2018-2022 must be used effectively to stimulate, support and control domestic food production, international food trade, strategic food reserves, storage food facilities and commercialization of agriculture. All challenges such as financial limits, farmers' skills, land ownership and climate change human – animal conflicts must all be addressed by the intervening variables such as government regulations and requirements on food security. The relationship illustrated in Figure 1.1 above.

1.10 Organization of the Study

Chapter one focussed on background of the study, problem statement, research objectives, research questions, hypothesis, justification of the study, theoretical framework, conceptual framework and organization of the study.

Chapter two entails literature review based on study objectives. This section analyzes levels of food security in Laikipia County, the adequacy of legal and policy frameworks regulating food systems in Laikipia County, the challenges in the implementation of such frameworks, the role of Laikipia county government in food security, and what an ideal food security framework should be. This section also developed research gaps from the literature review.

The chapter three describes the research methodology used in the study. Precisely, this chapter covers research philosophy, research design, location of study, target population, sample size, sampling design, research instruments, data collection methods, data analysis and ethical considerations.

Chapter three described the research methods and procedures that were used in the study. In particular, the chapter described the research philosophy, research design, locale of the study, target population, sample population, sample size and sampling procedures, research instruments, data collection procedures, data analysis, and ethical considerations of the study.

Chapter four analysed field data analysis based on the study five key objectives. The objectives were To assess the levels of food security households in Laikipia County; to establish the adequacy of the legal and policy frameworks regulating food systems in Laikipia County; to investigate the challenges in the implementation of legal and policy frameworks regulating food systems in Laikipia County; to analyse the role of the County government in ensuring food security in Laikipia County; and to establish the optimal regulatory arrangement for guaranteeing food security for people in Laikipia County.

Chapter five presents the summary, conclusion, and recommendations of the impact of the legal and policy frameworks on food security in Kenya based on findings in chapter four.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter undertakes literature review based on study objectives. This section analyses levels of food security in Laikipia County, the adequacy of legal and policy frameworks regulating food systems in Laikipia County, the challenges in the implementation of such frameworks, the role of Laikipia county government in food security, and what an ideal food security framework should be. This section also developed research gaps from the literature review.

2.2 To assess the levels of food security in households in Laikipia County

Nationally, food security situation within the country has improved; however, there is still space for growth. The malnutrition and underweight in children 5 years came down to 35 per cent, 7 percent and 20 percent in 2008/2009 to 26 percent, 4 percent, and 11 per cent respectively. The child wasting and child mortality indices also reduced 29.8 in 2008 to 21 in 2017.¹ However, 12 percent households in Kenya still experience poor diets. Food insecurity also becomes high during dry seasons. For instance, it is estimated that 7.5 million Kenyans are food insecure and another 4 million requires food assistance.²

In Laikipia County, reviewed previous empirical studies still show the county is still food insecure at various levels of households. For instance, 35 percent of population

¹ Dano, E. (2019). Unmasking the new green revolution in Africa: Motives, players and dynamics. Penang: Third World Network, vol. 34, no. 5, pp. 998–1001.

² Kang'ara, S. W., 2019. When the Pendulum Swings too Far: Structural Adjustment Programs in Kenya. *Third World Legal Studies*, 15(1), pp. 109-151.

rely on livestock keeping as the main sources of accessing food. Another 34 percent depend on crop farming as source of livelihood with 17 percent and 13.8 percent respectively engaged on trade and small businesses and formal employment.³

In terms of the relationship between age of the household heads and food security, 37.5 percent of those aged 55 to 64 years were stressed for not having food in households compared to 17.1 per cent among household heads in 35-44 years' age group in Laikipia County. Based on marital status of the household heads relationship with food security, 50 percent of households where the couple live together are highly stressed of not having food as 19.4 per cent households in monogamous family were also stressed of not having enough food.⁴ What this means is that polygamous households are more food insecure in Laikipia County

Food insecurity is also high in households headed by low levels of education in Laikipia County. The statistics indicate that pre-primary level of education and primary level of education households sleep hungry due to lack of food at the rate of 11.5 percent and 4.8 percent respectively.⁵ Oloo study shows that level of hunger in household decrease with the increase of level of education of household head. None of household in Laikipia County with higher level of education sleeps hungry for lack of food.⁶

³ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Orientation in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

⁴ Ogalleh, S. A., Vogl, C. R., Eitzinger, J., & Hauser, M. (2019). Local perceptions and responses to climate change and variability: The case of Laikipia District, Kenya. *Sustainability*, 4(12), 302-304.

⁵ Kaumbutho, P., & Kienzle, J. (2019). *Conservation agriculture as practised in Kenya: two case studies*. Nairobi, Kenya: African Conservation Tillage Network (ACT); Centre de Coopération Internationale de Recherche Agronomique pour le Développement (CIRAD); Food and Agriculture Organization of the United Nations (FAO), pp. 1-4.

⁶ Oloo, J. E. O. (2019). Food safety and quality management in Kenya: An overview of the roles played by various stakeholders. *African Journal of Food, Agriculture, Nutrition and Development*, 10(11).

In gender perspective, women headed households in Laikipia County were more food insecure than female headed households. A study by Kimani-Murage showed 26.2 women headed households were more food distressed than 21 percent men headed households. Households whose members could not eat what they want were also 37.5 percent concentrated in women headed households.⁷

In terms of size of household, food security increases with household size in Laikipia County. For instance, 9.3 percent of 4 to 6 family members sleep hungry while 7 percent of 1 to 3 family members sleep hungry in Laikipia County. Further, those who have no food at all was at 18.4 percent in 4 to 6 family members and 17.9 percent in 1 to 3 family members.⁸

In terms of access to food in Laikipia County, 50 percent of female and male population produce their own food while 66.7 percent of female population depend on purchased food. About food adequacy, 55.6 percent of female population consider the county as having inadequate food and 44.4 percent of male population consider the county to be having inadequate food. The study also shows 50 percent of women and men in Laikipia County have received relief food in their life. To cope with food insecurity, women do casual labours and seek help from relatives as coping strategies when faced with food shortage. Report indicates male people in Laikipia County never receive help from relatives in times of food shortage.⁹

⁷ Kimani-Murage, E. 2019. Lessons other countries can learn from Kenya's ambitious nutrition plan. *The Conversation*. (available at: [https:// theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921](https://theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921)). 35(2), 131.

⁸ African Women's Studies Centre, University of Nairobi (2019): *Food Security Research Findings and Recommendations*, 36(4), 42.

⁹ *Ibid*, 44-45.

It is evident based on Laikipia County food insecurity statistics analysed above that Laikipia County has not yet met the UN 1948 Universal Declaration Article 25, the 1981 African Charter Article 15, and the Constitution of Kenya 2010 Article 43 (c), that that guarantee access to food for everyone.¹⁰ Further, Laikipia County food systems are regulated by The Constitution of Kenya 2010, FNSP-IF (2017-2022), CIDP 2018-2022, The Laikipia County Fiscal Strategy Paper 2019/20, The Laikipia County Fiscal Strategy Paper 2018/19, and Laikipia County 2017/18 Sectoral Expenditure Report to support food security.¹¹

The overall goal of FNSP-IF (2017-2022) is to ensure citizens of Kenyan have access to quality, affordable, nutritious, acceptable and sufficient quantity of food that satisfy the optimal health.¹² This legal and policy framework was established from the Constitution of Kenya 2010 Article 43 section (c) that guarantees every Kenyan right to freedom from hunger, starvation and to have access to quality food.¹³

Further, based on CIDP 2018-2022, Laikipia County has a vision of innovative and commercially oriented agriculture. In its mission, Laikipia County is in the process to accelerate food production from subsistence farming to commercial farming. The CIDP 2018-2022 objective is to ensure agriculture, livestock and fisheries are commercial in nature and able to guarantee food security; coordinate county and national governments operations towards agriculture.¹⁴

¹⁰Mburia, R. 2019. Africa Climate Change Policy: An adaptation and development challenge in a dangerous world. Climate Emergency Institute. 16(3), pp. 215–2019.

¹¹Nyangito, H. & Okello, J., 2019. *Kenya's Agricultural Policy and Sector Performance: 1964 to 2019*, Nairobi: IPAR, pp. 4-5.

¹²Government of Kenya, (2019). The Constitution of Kenya 2010, 1st edn. Nairobi: Government Printers.

¹³Ogalleh, S. A., Vogl, C. R., Eitzinger, J., & Hauser, M. (2019). Local perceptions and responses to climate change and variability: The case of Laikipia District, Kenya. *Sustainability*, 4(12), 302-304

¹⁴ Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

However, based on Laikipia County food insecurity statistics analysed above, and with only two years to the implementation expiry of FNSP-IF (2017-2022), and CIDP 2018-2022; it appears both national and county governments have fallen short behind their implementation schedules or facing financial, infrastructural, or labour expertise to achieve their agricultural goals to enable all counties and the whole country become food secure.

Further, based on Report on Laikipia County Fiscal Strategy Paper 2019/20, Laikipia County Fiscal Strategy Paper 2018/19, and Laikipia County 2017/18 Sectoral Expenditure, the county allocated Kshs. 275,262,716, Kshs. 146,924,000 and Kshs. 101,694,756 respectively towards agriculture. This was an average of 4.51 percent of the total budget. This Laikipia County's agriculture budget allocation was below the 10 percent standard recommended in Maputo Declaration that Kenya is its member.¹⁵ It therefore follows that Laikipia County financial allocation to agriculture was inadequate to meet its agricultural development needs to attain food security for all in the county.

The food insecurity case law arising out of government's failure to fully implement the existing food security laws as established here is found The consumer rights body sued Kenya Government for failing to respond appropriately to protect Kenyans from hunger by not stocking enough reservation foods and failing to regulate fuel prices that shot up food prices.¹⁶ The above Laikipia households food pattern analysis also relates to *People's Union for Civil Liberties vs Union of India & Ors* in which both

¹⁵ FSIN (Food Security Information Network). 2019. Global Report on Food Crises. Rome, World Food Programme. 15(6), 600-608.

¹⁶ Route to Food, 2020. Human rights and Kenya's legal obligations on the right to food. Available from: <https://routetofood.org/human-rights-and-kenyas-legal-obligations-on-the-right-to-food/> (Accessed September 10, 2020).

national and state governments were found liable for failing to distribute food as per local food laws thus causing starvation and deaths of Rajasthan State people despite enough food reservation lies in the stores.¹⁷

2.3 The adequacy of the legal and policy frameworks regulating food systems in Laikipia County

An analysis of the legal and policy frameworks regulating food systems in Laikipia County shows that laws governing food security such as The Constitution of Kenya 2010, FNSP-IF (2017-2022), CIDP 2018-2022, The Laikipia County Fiscal Strategy Paper 2019/20, The Laikipia County Fiscal Strategy Paper 2018/19, and Laikipia County 2017/18 Sectoral Expenditure Report were still inadequate or ineffective in some way to address insecurity. For instance, food storage and preservation is an instrument in food security as it ensures food is not wasted but stored and available during food crisis.¹⁸

The FNSP-IF (2017-2022) section 2.1.5 provides that national and county governments encourage households' better food handling, food storage structures and practices for better food security. Further, the CIDP 2018-2022 food storage goal is to reduce waste by preserving unused or uneaten all county foods for later use.¹⁹ However, a study by Bond still indicates poor use of food surplus storage methods by the farmers in Laikipia County that leads to food wastage or spoilage. The study reports that majority of farmers do not have reliable preservation methods for

¹⁷ India. 2003. *People's Union for Civil Liberties (PUCL) vs Union of India & Ors.* Writ Petition (Civil) No. 196 of 2001 and Interim Order of 2 May 2003. Cited in IDLO, 2014. Op cit., p. 96-7.

¹⁸ Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

¹⁹ Ahaibwe, G., Mbowa, S. & Lwanga, M.M. 2019. Youth Engagement in Agriculture in Uganda: Challenges and Prospects. Research Series No. 106. Kampala, Economic Policy Research Centre. 7: 14-15

perishable and non-perishable foods but instead use conventional methods such as granary, salting, drying and coating with ash, hanged their foods in their own houses, store in their neighbours houses, or trees which are unreliable.²⁰ This means that while FNSP-IF (2017-2022) and CIDP 2018-2022 provides and advocates for modern food storage methods, the laws themselves have not adequately provided safeguards to ensure this was achieved or should not fail to be achieved in Laikipia County.

The review of FNSP-IF (2017-2022) Section 2.1.2 and CIDP 2018-2022 Section H of Programme 2 indicate both national and county governments goal is to make available, affordable and accessible high quality farm inputs such as fertilizers, machinery, agro-chemicals, livestock vaccines and drugs.²¹ However, a study by Glopolis indicate food shortages in Laikipia County is often accelerated by lack of subsidised government fertiliser and increased fuel prices during planting seasons. Further, cost increase of farm inputs — fertiliser, maize seed, and diesel prices — forces Laikipia farmers to reduce acreage under the crop, therefore posing a threat to the country's food security.²² This means while the constitution framework envisions constant supply of affordable farm inputs for Laikipia farmers, the law itself has not laid down robust measures that ensure realization of these benefits to Laikipia farmers in agricultural fields.

In terms of transportation, FNSP-IF (2017-2022) section 2.3 promote investment in roads, power, water, and communications all over the country to improve agricultural

²⁰ Bond, J. (2019). A holistic approach to natural resource conflict: The case of Laikipia County, Kenya. *Journal of Rural Studies*, 34, 117-127

²¹ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Orientation in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

²² Glopolis, 2019. *Food Security and Agricultural Trade in Kenya*, Prague: Glopolis. Government of Kenya, June 2019, Government Printer, Nairobi. vol. 95, no. 1, pp. 1–5.

productivity.²³ The CIDP 2018-2022 also aims to improve agricultural products packaging, transportation, handling and decontamination to reduce food wastage.²⁴ However, Laikipia County still has poor roads that hinder movement of farm produces. Further, only small population is connected to electricity that inhibits irrigation farming and food preservation.²⁵ This means that while FNSP-IF (2017-2022) and CIDP 2018-2022 frameworks supports establishment of modern infrastructures to promote agriculture, perhaps these laws were inadequate in outlining or laying foundation on how this should be realistically achieved to the people of Laikipia.

To support irrigation, FNSP-IF (2017-2022) section 2.1.7 seeks to expand food production through irrigation especially in the arid and semi-arid areas (ASALs) such as Laikipia.²⁶ The CIDP 2018-2022 section 1.10 also targets to put 203,965 hectares of land under irrigation in the medium potential areas by December 2022.²⁷ However, despite this, Laikipia County generally still lacks water for domestic and irrigation due to lack of enough rainfall and lack of knowledge on how to harvest rainwater when available.²⁸ From researcher's analysis observation, while the frameworks provides that water should be tapped and used for irrigation, they do not state

²³ Ogalleh, S. A., Vogl, C. R., Eitzinger, J., & Hauser, M. (2019). Local perceptions and responses to climate change and variability: The case of Laikipia District, Kenya. *Sustainability*, 4(12), 302-304

²⁴ Ibid, p. 3305

²⁵ Kimani-Murage, E. 2019. Lessons other countries can learn from Kenya's ambitious nutrition plan. *The Conversation*. (available at: [https:// theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921](https://theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921)). 35(2), 131.

²⁶ RESULTS UK, Concern Worldwide, and University of Westminster. 2019. What Works for nutrition? Stories of success from Vietnam, Uganda and Kenya. London and Dublin. 28(3), 3-7.

²⁷ Oloo, J. E. O. (2019). Food safety and quality management in Kenya: An overview of the roles played by various stakeholders. *African Journal of Food, Agriculture, Nutrition and Development*, 10(11).

²⁸ FSIN (Food Security Information Network). 2019. Global Report on Food Crises. Rome, World Food Programme. 15(6), 600-608.

specifics on how this should be carried out by farmers. Further, the frameworks do not give specific targets, scope, measurements and timelines to the national or county governments including where and how it should be undertaken in every county.

Another study by FSIN shows inadequate veterinary services in Laikipia County resulting in high animal deaths. Further, corruption and few extension officers aggravate the already dire situation.²⁹ This was despite the CIDP 2018-2022 section 4.3.5 objective to improve and maintain livestock health for livestock market access.

³⁰ This veterinary services inadequacy in Laikipia County perhaps lies in the framework failure to provide what specific numbers of veterinary centres a county should have or how they should be distributed within counties.

Another inadequacy of FNSP-IF (2017-2022) and CIDP 2018-2022 were also found in the availability of markets for Laikipia farmers produce. FNSP-IF (2017-2022) section 2.2.3 objective is to improve food access and functioning of markets.³¹ The CIDP 2018-2022 section 4.3.5 also aim to provide local and international markets for all farm products produced in the county.³² However, a study by Kang'ara established that 40 percent of Laikipia farmers still do not have markets to sell their farm produce.

³³ This could point to frameworks weaknesses analysed above in which they fail to provide fixed timeline, scope, targets, methods, resources, strategies, and manpower

²⁹ Ibid, p. 711

³⁰ Glopolis, 2019. *Food Security and Agricultural Trade in Kenya*, Prague: Glopolis. Government of Kenya, June 2019, Government Printer, Nairobi. vol. 95, no. 1, pp. 1–5.

³¹ Joshi, A., 2019. Food Security in the Great Lakes Region: Reconciling Trade Liberalization with Human Security Goals. In: R. Rayfuse & N. Weisfelt, eds. *The Challenge of Food Security. International Policy and Regulatory Frameworks*. Cheltenham: Edward Elgar Publishing, pp. 44-69.

³² Ibid, p. 51.

³³ Kang'ara, S. W., 2019. When the Pendulum Swings too Far: Structural Adjustment Programs in Kenya. *Third World Legal Studies*, 15(1), pp. 109-151.

that should be put in place by both national and/or county governments to achieve markets for all farm products of Laikipia farmers. In summary, these frameworks inadequacies to address food surplus storage methods, infrastructure, water for irrigation, veterinary services, and markets for farm produce in Laikipia County continues to exacerbate food insecurity in Laikipia.

2.4 The challenges in the implementation of legal and policy frameworks regulating food systems in Laikipia County.

Kenya is a member of United Nations and committed itself to allocate 10 percent of its expenditure to support full implementation of global and local agricultural frameworks and policies such as the UN Comprehensive Framework for Action, CAADP, NFNSP-IF 2017-2022, and the CIDP 2018-2022.³⁴ However, despite its commitment, every financial year, meagre budget allocation goes to agricultural sector. For instance, the previous financial year (2018-2019) budget allocation was paltry 2.53 percent of the country's total budget allocation.³⁵ Further, Laikipia County's paltry 4.51 percent of the total budget fund agricultural activities. This limited national and county budget allocation towards agriculture derails the modern infrastructures and technologies that should be put in place to support Laikipia farmers.³⁶

Another challenge in the implementation of the NFNSP-IF (2017-2022) and the CIDP 2018-2022 frameworks is low level of education among farmers in Laikipia County.

³⁴ Kaumbutho, P., & Kienzle, J. (2019). *Conservation agriculture as practised in Kenya: two case studies*. Nairobi, Kenya: African Conservation Tillage Network (ACT); Centre de Coopération Internationale de Recherche Agronomique pour le Développement (CIRAD); Food and Agriculture Organization of the United Nations (FAO), pp. 1–4.

³⁵ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Orientation in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

³⁶ Deotti, L. & Estruch, E. 2019. Addressing rural youth migration at its root causes: A conceptual framework. Rome, FAO. 3(4), e129-130

The primary-secondary schools transition rate in Laikipia is less than 50 percent, despite the fact that over 75 percent of the students meet the minimum requirements to be accepted to secondary school. The nearly 50 percent of children who drop out find alternatives to going to school in herding and small-scale farming.³⁷ Despite assistance from agricultural extension officers, this class of farmers in this category find it hard to interpret, understand, apply, and always practice strategic, modern, safe and sustainable agricultural methods promoted by the NFNSP-IF (2017-2022) and the CIDP 2018-2022 frameworks.³⁸

Poverty is also negating implementation of national and county government agricultural framework and policy. About 43 percent of the population are in absolute poverty while 27.2 percent rely on food aid during food shortages.³⁹ According to Gufu study, poor households focus on subsistence farming in order to meet their immediate food needs. This category of farmers also still rely on traditional farming methods as they avoid any modern agricultural technologies propagated by the NFNSP-IF (2017-2022) and the CIDP 2018-2022 due to limited financial income.

40

The case of poverty in Laikipia County households affecting food security and health or wellbeing of residence is related to *Juzgado de la niñez y la adolescencia e de Adolescentes en Conflicto con la Ley Penal del Departamento de Zacapa* in Guatemala in which the court ruled the State did not meet its obligation to protect

³⁷ FAO, 2019d. The state of food and agriculture. Leveraging food systems for inclusive rural transformation. Rome. 33(1), 3-56.

³⁸ Ibid, p. 61

³⁹ Ibid, p. 62-64

⁴⁰ Gufu 2019, Ecological Factors In Land Use Conflicts, Land Administration And Food Insecurity In Turkana, Kenya p 1-20.

Camotan municipality children from child malnutrition.⁴¹ The court held this violated their rights to food, life, housing, and adequate standard of living.⁴² Perhaps it is time Kenya and Laikipia County governments address food legislatives, logistical and planning gaps to avoid future litigation as in the case of Guatemala.

In addition, another major impediment to the NFNSP-IF (2017-2022) and the CIDP 2018-2022 full implementation is the high level of people who do not own land in Laikipia County. According to Kang'ara, Laikipia has profound inequalities in land ownership, with 40.3 percent of the land being controlled by 48 individuals. Currently, at least 35,000 people in Laikipia have land ownership problems. For instance, in areas of Majengo, Likii, Kiamaina and Manguo, plot owners have been waiting for a long time to get ownership documents. This affects Laikipia County agricultural planning towards food security.⁴³

Further, there is high poverty level among Laikipia squatters, internally displaced persons and owners of small farms. The majority of these categories work as casuals in horticultural lands and ranches.⁴⁴ As a result, this class of people relies on buying food to feed their families and in case of food shortages; they depend on food aid since they do not have food reserves as envisioned by the NFNSP-IF (2017-2022) and the CIDP 2018-2022.⁴⁵

⁴¹ Guatemala. 2013. Juzgado de la niñez y la adolescencia e de Adolescentes en Conflicto con la Ley Penal del Departamento de Zacapa, Carrpeta Judicial No. 19003-00638-Of.1a, 3 April 2013. Cited in IDLO, 2014. Op cit, p. 593.

⁴² Ibid, p.594.

⁴³ Kang'ara, S. W., 2019. When the Pendulum Swings too Far: Structural Adjustment Programs in Kenya. *Third World Legal Studies*, 15(1), pp. 109-151.

⁴⁴ Ogalleh, S. A., Vogl, C. R., Eitzinger, J., & Hauser, M. (2019). Local perceptions and responses to climate change and variability: The case of Laikipia District, Kenya. *Sustainability*, 4(12), 302-304

⁴⁵ Ibid, p. 305

The magnitude and picture of Laikipia residents' landlessness is brought up in a sought for justice in the case of *Richard K. Bunei & 8 others t/a Geo-Estate Development Services v Lorien Ranching Company Limited & 799 others (being sued on behalf of themselves and on behalf of alleged 795 Members)* [2017]. This suit that was filed all the way in 1970 but has not been determined up to date with several court injunctions, arguments and counter arguments that has affected the utilization of land in question.⁴⁶

This case has delayed in the corridors of justice for close to 50 years and until 2019, a *Civil Application 7 of 2019 Richard Koskei Bunei & 8 others v Lorien Ranching Company & 799 others* [2019] was filed.⁴⁷ What this case means is that with contention of land ownership and sought court injunctions, the original landowners cannot occupy the land nor fully utilize it for commercial or food production purposes to improve their health and livelihood as well as boost food security in the county.

Poor farmers' financing is also a major challenge to the implementation of the NFNSP-IF (2017-2022) and the CIDP 2018-2022. Poor agricultural funding in the county could be analysed in two angles. For instance, while Kenya signed 2003 Maputo declaration and committed to raise its agricultural allocation to 10 percent, the agriculture annual budget has been consistently below 5 percent.⁴⁸ This adversely affects farmers in terms of accessing government funds for training, buying farm

⁴⁶Kenya Law, 2020. *Richard K. Bunei & 8 others t/a Geo-Estate Development Services v Lorien Ranching Company Limited & 799 others (being sued on behalf of themselves and on behalf of alleged 795 Members)* [2019] eKLR. Available at: <http://kenyalaw.org/caselaw/cases/view/150326> (Accessed September, 2020.)

⁴⁷ Kenya Law, 2020. *Richard Koskei Bunei & 8 others v Lorien Ranching Company & 799 others* [2019] eKLR Available at: <http://kenyalaw.org/caselaw/cases/view/185954/> (Accessed September, 2020.)

⁴⁸ Kimani-Murage, E. 2019. Lessons other countries can learn from Kenya's ambitious nutrition plan. *The Conversation*. (available at: [https:// theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921](https://theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921)). 35(2), 131.

inputs, and adopting modern farming technologies that could produce high yields and guarantee food security.⁴⁹

In another angle, County Government of Laikipia has only been averagely allocating 4.51 percent of its total budget on agriculture and food security. For instance, in 2019-2020 Laikipia County financial year budgets, the county government allocated Kshs. 275,262,716 only towards agriculture. In financial year 2018/19, Laikipia County spent Kshs. 146,924,000 and Kshs. 101,694,756 financial year 2017/18.⁵⁰ This limited funding of agricultural activities makes it impossible for local farmers to adequately access funds to support better farming practices, hone their farming skills, to ensure high return harvests that promotes consistent food supply in the county and eliminate hunger.⁵¹ According to Morrison, rural farmers Laikipia included produce valuable foods but live in poverty, with low level of education, poor health and standard of living due to limited national and county government financial support.⁵²

Insecurity in Laikipia is also a challenge to the NFNSP-IF (2017-2022) and the CIDP 2018-2022 implementation. Laikipia County experiences a high level of insecurity in the form of farmers-wildlife conflict, cattle rustling and normal crimes both of which endanger the agricultural activities that could enhance food security. Clashes between pastoralists, farmers and conservationists in Laikipia – triggered initially by drought but worsened by political tensions linked to local elections – often escalate into a wider, even more damaging conflict that disrupt farming activities in the county.⁵³

⁴⁹ Ibid, p. 136.

⁵⁰ Morrison, J. 2019. Managing food security risks and intra-regional trade in Africa. Rome, FAO, p. 51

⁵¹ Ibid, p. 33

⁵² Ibid, p.41

⁵³ Narayan, P., Naryan, S. & Mishra, S. 2019. Do Remittances Induce Inflation? Fresh Evidence from Developing Countries. *Southern Economic Journal*, 77(4): 914-933.

In a case law that reflect ongoing Laikipia farmers' conflicts with wildlife animals, (*County Government of Laikipia vs Ndovu Power Fence and Ecosystem Limited (2017)*), the county government contracted Ndovu Fence Company to construct a 57-kilometre electric fence along Rumuruti forest worth Sh96 million to keep away wild animals from invading farms. However, due to contractual disagreement on terms and conditions, the county government has re-advertised the tender prompting a suit from fencing company contractor.⁵⁴ This case means it would take time before a fence is put up to protect Laikipia farmers' crops. That means wild animals can still invade the Laikipia farmer's crops expanding low produce and food insecurity in the county.

2.5 The role of the county government in ensuring food security in Laikipia County.

The Constitution of Kenya 2010 Fourth Schedule [(articles 185(2), 186(1) and 187(2)] describe functions of county in agriculture as crop and animal husbandry, plant and animal diseases control, livestock sale yards, fisheries and county abattoirs.

In the spirit to align itself and its activities with the Constitution of Kenya 2010 to promote agriculture and food security as envisioned in the NFNSP-IF (2017-2022) and CIDP 2018-2022; the County Government of Laikipia established County Executive Committee in Agriculture. The Committee: Publish a map of crops, fruit trees, livestock and fisheries that are profitable to produce in every village. Design and implement program to promote newly five commercialized crops including Managu, Stinging Nestle. Implement market grades and standards, and sale of products by weight. Increase the proportion of agricultural products sold at markets in

⁵⁴ Daily Nation, Tuesday, March 07, 2019. Contractor sues Laikipia County over Sh96 million fence project. Available at: <https://nation.africa/kenya/counties/laikipia/contractor-sues-laikipia-county-over-sh96-million-fence-project-369842> (Accessed September, 2020.)

the county to at least 70 percent by December 2020. Lower the farming production costs by 10-15 percent by June 2021. Add value locally (processing, packaging) to at least 30 percent of crops, fruit trees and livestock products by December 2020.⁵⁵

The Committee also organize trainings for farmers and sensitize them about marketing, finance and insurance options in farming. The Committee further oversee post-harvest management, value addition, and sourcing markets for farmers. The Committee additionally coordinate disbursements of Laikipia Enterprise & Laikipia Co-operative funds to support farmers in agri-business. The Committee has again been instrumental in linking farmers to cooperatives for marketing of their produces.⁵⁶

The County Government of Laikipia through its County Executive Committee in Agriculture is also working to raise crops' and fruit trees yields to at least 70 percent of recommended yield by breeders by December 2021. Reduce crops and fruit trees' post-harvest losses to fewer than 20 percent by December 2021. Implement and achieve full livestock identity and tracking system for 100 percent of livestock by December 2021. Create three cattle disease-free zones in the County by December 2020. Facilitate so that at least 50 percent of dairy farmers' own cattle that produce an average of 15kg daily by December 2021. Facilitate so that at least 40 percent of beef produced in Laikipia is FAQ grade by December 2021. Raise at least 20 percent additional funds (above the annual budgetary allocations) among other activities that seek to commercialize in the county and improve food security.⁵⁷

⁵⁵ Obunde, P., Omiti, J., & Sirengo, A. N. (2019). *Policy dimensions in human-wildlife conflicts in Kenya: Evidence from Laikipia and Nyandarua Districts*. Institute of Policy Analysis and Research. 47(4), 726-727.

⁵⁶ Oloo, J. E. O. (2019). Food safety and quality management in Kenya: An overview of the roles played by various stakeholders. *African Journal of Food, Agriculture, Nutrition and Development*, 10(11).

⁵⁷ Patel, P. N., Mbagaya, G. M. & Imo, B. E., 2019. Impact of Climate Change on Food and Nutrition Security in Kenya. *International Journal of Current Research*, 4(1), pp. 242-248.

However, despite the County Government of Laikipia and its County Executive Committee in Agriculture noble job to promote, commercialize agriculture, and improve county's food security; Laikipia farmers still use outdated food farming and storage technologies, rely on rain fed agriculture, lack sustainable market for farm produce, are vulnerable to market shocks and price fluctuations for their products, and affected by diseases and pests that ravage their crops and vegetables resulting in poor yields and returns every year.⁵⁸

Laikipia farmers also still face worsening climate change due to Laikipia's aridity situation because of the increased weather variability is not suitable for sustainable food production. Further, access to finance and excessive interest rates is still a major obstacle for Laikipia farmers. Several farmers in Laikipia also still have land ownership problems.⁵⁹ As Patel and Mbagaya explains, land ownership gives access to finance. It therefore follows that as long as Laikipia farmers do not hold valid land titles, they lose financing since land title deed can be used as collateral to acquire financial services to improve their agricultural outputs.⁶⁰

The situation in which some indigenous Maasai of Laikipia feels or perceive their tracks of lands were taken away from them unwillingly by white sellers through large ranches (such as Orghissi, Ol Pejeta, Loisaba, Segera, Solio Ranch, Ol-jogi Ranch, Kisima Farm and Ol Ari Nyiro Ranch) and they cannot use such parcels of lands for pastoralism or agriculture reflects *Maya Indigenous Community of the Toledo District vs Belize* case in which court found the use of natural resources on indigenous lands

⁵⁸ Ibid, p. 111.

⁵⁹ Patel, P. N., Mbagaya, G. M. & Imo, B. E., 2019. Impact of Climate Change on Food and Nutrition Security in Kenya. *International Journal of Current Research*, 4(1), pp. 242-248.

⁶⁰ Ibid, p. 37.

by certain private third parties undermines the indigenous population's right to food.

61

The land ownership tussle in Laikipia is further reflected in *SERAC and Center for Economic and Social Rights vs Nigeria* that African Commission ruled Nigerian government infringed on Ogoni people rights as it never involved them in decision making of an activity that affected their source of earning and livelihood.⁶² It is evitable both national and Laikipia County together with the Judiciary of Kenya amicably find solutions to the long standing land court cases in the county to improve food availability and security to Laikipia residents.

2.6 The optimal regulatory arrangement for guaranteeing food security for people in Laikipia County.

According to Thow et al., Kenya has robust and enough policies regulating agriculture and food industry that ought to be resourced and implemented fully at national and county levels to guarantee food security nationally and in all counties.⁶³ In Thow et al., view, Kenya has extensive food and agricultural policies that promote modern farming methods and application of technologies that county such as Laikipia and to extension farmers could benefit from but have never been fully adopted and implemented both nationally and at the county levels.⁶⁴ Thow et al., proposition is supported by AfDB study that established that while Kenya's agriculture has good

⁶¹ Belize. 2004. *Maya Indigenous Community of the Toledo District vs Belize*. Inter-American Commission. Case 12.053, Report No 40/04, Inter-Am. CHR, OEA/Ser.L/V/II.122 Doc. 5 rev. 1 at 727. Cited in IDLO, 2014. Op cit., p. 245-247.

⁶² ACHPR (African Commission on Human and Peoples' Rights). 1995. *Civil Liberties Organization vs Nigeria*, Comm. 101/93, ACHPR AAR Annex VI (1994–1995), para. 27. Cited in IDLO, 2014. Op cit., p 104-107.

⁶³ Thow, A.M., Fanzo, J. & Negin, J. 2019. *A Systematic Review of the Effect of Remittances on Diet and Nutrition*. *Food and Nutrition Bulletin*, 37(1): 42-64.

⁶⁴ *Ibid*, p. 26-28.

regulating policies; such policies are paperworks and rarely fully adhered to by all stakeholders in the food sector.⁶⁵ In summary, Kenya on behalf of counties has robust agricultural policies that if well adopted, adapted to, and implemented, then food security could be achieved as part of Vision 2030.

Kenya is regulated by several enacted policies among others the National Food Security and Nutrition Policy (NFSNP), 201; National Food and Nutrition Security Policy Implementation Framework (2017-2022); National Agricultural Sector Extension Policy (NASEP); Agriculture Sector Development Strategy (ASDS) 2009; Kenya Vision 2030; Kenya_Youth_in_Agribusiness_Strategy_2017-2021; Kenya Climate Smart Agriculture Implementation Framework 2018-2027; Roots and Tuber Crops Strategy 2019-2022; Crops Act; the Agriculture and Food Authority Act (AFA) 2013; Fisheries Management and Development Act, 2016; and The Irrigation Act, 2019.⁶⁶

Kenya is also a member and signatory to the United Nations, African Union, and East African Communities among other Declarations. By this virtue, Kenya and its counties are mandated and required to adopt and implement food and agricultural policies such as The EAC Food and Nutrition Security Action Plan (FNSAP) 2018-2022; The Comprehensive Africa Agriculture Development Programme (CAADP); United Nations Development Assistance Framework (2018-2022); UN Comprehensive Framework for Action (CFA); and The Global Strategic Framework for Food Security and Nutrition (GSF).⁶⁷

⁶⁵ AfDB. 2019. Feed Africa Strategy for agricultural transformation in Africa 2019-2025. Abidjan. 4(2): 1-4

⁶⁶ Alderman, H. & Yemtsov, R. 2019. How can food safety nets contribute to economic growth? World Bank Economic Review, 28(1): 1–20.

⁶⁷ Ibid, p. 29-31

Further, perhaps the best in practice agricultural system Kenya and Laikipia County should adopt to guarantee food security for Laikipia residents and the whole nation is Dano model of agricultural practice in which the scholar advocates for three tenets or foundations in agriculture – (environmental friendly, structurally funded but cost effective, and responds to socio-cultural needs).⁶⁸ He further argues that

“any plan for agricultural development in Africa must abide by some key principles, including the following:

- a. a revolution defined and implemented by Africans: any solution to Africa’s problems must be defined, designed, formulated and implemented by Africans*
- b. smallholders and poor farmers as central actors: any “true” revolution must have the people as central and lead actors, not mere extras in a play scripted by outsiders*
- c. structural change is pivotal: strategic solutions to the problems in agriculture heavily depend on access to productive resources such as land*
- d. agriculture as a living system: solutions to agricultural problems should be viewed as an integrated whole, and as part of the agricultural knowledge systems of local farmers*
- e. food sovereignty and self-sufficiency is key: agricultural development projects must first and foremost address the challenges of food security at the household level, instead of being designed as market-oriented*

⁶⁸ Dano, E. (2019). Unmasking the new green revolution in Africa: Motives, players and dynamics. Penang: Third World Network, vol. 34, no. 5, pp. 998–1001.

f. harnessing Africa's resources for Africans: Africa's resources should be harnessed and developed to benefit the poor who constitute the majority of the population”

Dano model environmental friendly means agricultural practices that are not harmful to air, water bodies, and land organisms. Structurally funded but cost effective means agriculture with strategic annual budget plan but not cost intensive in form of farm inputs, transportation and storage to enable farmers earn the value for their produce. Agriculture that responds to socio-cultural needs means agricultural practices that reflect community, individual changing needs and consumption pattern.⁶⁹ For instance, Dano model states that if Laikipia population consumption level has surpassed use of maize alone as arable food, then farming in Laikipia County should change to incorporate other high yields crops that will boost high harvests and guarantee food security to the Laikipia residents. Lastly it advocates for agricultural issues to be addressed at household level.

2.7 Research Gaps

There were several research gaps from the reviewed literature above that needs to be addressed. For instance, African Women's Studies Centre, University of Nairobi (2018) established level of food insecurity increases with household size in Laikipia County. This study however, was undertaken over two years ago. This study would gather current data to find out contemporary issues in food security. Waithaka, Nelson and Thomas (2019) established Laikipia farmers were not aware of robust food policies in the country. Reason why they used traditional farming approaches that yield few returns. Waithaka study relied on secondary data and reports. This study

⁶⁹ Ibid, p. 439.

however collected data from the field to find out the real problems. Deotti and Estruch (2019) established climate change, global warming, prolonged droughts, water bodies depletion, water and land pollution affected food security. Deotti and Estruch study suggested more scholarly research to find scientific resolutions to the problems which this study fulfilled. Dano (2019) established Kenya has robust policies regulating food industry that are yet to be implemented fully at national and county levels. Dano study was however exploratory in nature and did not come up with exclusive conclusions or solutions that this study has filled.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the research methods and procedures that were used in the study. In particular, the chapter described the research philosophy, research design, locale of the study, target population, sample population, sample size and sampling procedures, research instruments, data collection procedures, data analysis, and ethical considerations of the study.

3.2 Research Paradigm

This study adopted qualitative research approach. The qualitative research approach uses qualitative (interviews, focused groups discussion) techniques.⁷⁰ This approach to research is used when in-depth understanding is of priority than usual statistics.⁷¹ The qualitative approach allows the research to adopt content analysis that analyses the data in in-depth in narrative form based on themes of the study. By adopting qualitative approach, the study was able to focus on every objective vividly and in descriptive form to understand the underlying issues without restriction to statistical groupings or classifications.⁷² The qualitative approach also enables the study to adopt direct reporting, quotations or excerpts from the field that promote accurate findings in the study.⁷³

⁷⁰ Denzin, N.K. & Lincoln, Y.S. 2013. The Landscape of qualitative research. 4th ed. Los Angeles, CA: Sage, p. 36

⁷¹ Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, 18(1), 3-20.

⁷² Du Preez, P. 2019. A brief introduction to research designs and methodologies. Presentation to Master's and doctoral students at the North-West University, Potchefstroom on 27 Jan., 2020, p.27-41.

⁷³ Creswell, J.W. & Miller, D.L. 2010. Determining validity in qualitative inquiry. *Theory into practice*.http://www.tandfonline.com/doi/pdf/10.1207/s15430421tip3903_2. Date of access: 27 Jan., 2020, p. 30-33.

3.3 Research Design

Research design is defined as plan, strategy, or a guideline that a research study adopts.⁷⁴ Research design is the framework that has been created to find answers to research questions.⁷⁵ This study adopted descriptive research design to examine the legal and policy framework on food sustainability in Laikipia County both in quantitative and qualitative approach. Descriptive design was adopted in this study because it can well describe a situation or a phenomenon. Further, it can be used to answer, how, why, where, when and what scenarios.⁷⁶

3.4 Study Site

Research site is the place or location where research is conducted.⁷⁷ The examples of research sites are hospitals, universities, farms, research institutes, households, forests, among others.⁷⁸ The study area was in Laikipia County. Laikipia County has large tracts of land under which farmers practice different forms of farming in both small and large scales for commercial and subsistence purposes. Some of the crops grown in Laikipia County are maize, beans, wheat, tomatoes, mangoes, onions, kale, flowers among others. There is also practice of livestock and poultry rearing as well as bee keeping and fish farming.⁷⁹

⁷⁴ Kothari, .C. R. (2014), *Research Methodology: Methods and Techniques*, 2nd Edition, Sri Lanka: New Age International Publisher, p. 90.

⁷⁵ Marshall, C. & Rossman, G.B. 2011. Designing qualitative research methods. [http://www.amazon.com/Designing-Qualitative-Research-Catherine Marshall/dp/141297044X](http://www.amazon.com/Designing-Qualitative-Research-Catherine-Marshall/dp/141297044X). Date of access: 27th Jan., 2020, p. 57-58.

⁷⁶ Patton, M.Q. 2002. *Qualitative Research & evaluation methods*. 3rd ed. Los Angeles, CA: Sage, p. 127-129.

⁷⁷ Kothari, .C. R. (2014), *Research Methodology: Methods and Techniques*, 2nd Edition, Sri Lanka: New Age International Publisher, p. 52-55.

⁷⁸ Ibid, p.52-55

⁷⁹ Joshi, A., 2019. Food Security in the Great Lakes Region: Reconciling Trade Liberalization with Human Security Goals. In: R. Rayfuse & N. Weisfelt, eds. *The Challenge of Food Security. International Policy and Regulatory Frameworks*. Cheltenham: Edward Elgar Publishing, pp. 44-69.

3.5 Target Population

A population refers to the entire group of persons or elements that have at least one thing in common.⁸⁰ Target population is also the accessible population within the area of study and which the researcher intends to study.⁸¹ A target population is defined as all members that are described by the characteristics selected by the researcher.⁸² This study target group comprised of Laikipia farmers' representatives, Laikipia County Government officials, and national government agricultural and food security experts as the study population.

3.6 Sampling technique and sample size

A sample is a portion or part of target population selected using probability and non-probability sampling techniques.⁸³ There were 33 Laikipia County Department of Agriculture officials directly involved in coordinating county's food production as well as development and implementation of legal and policies relating to food security in the county. There were also 15 Laikipia farmers' representatives selected by farmers themselves to represent them in Laikipia County Department of Agriculture Executive Committee. Due to logistical challenges, time constraints, and the wider geographical Laikipia County was, this study adopted purposive sampling to select 10 Laikipia farmers' representatives that sits in the Executive Committee. The study also purposively selected (5) Laikipia County

⁸⁰ Delpont, C.S.L. & Fouche, C.B. 2005. The place of theory and literature review in the qualitative approach (In De Vos, A., Strydom, H., Fouché, C.B., & Delpont, C.S.L., eds. Research at grass roots. 3rd ed. Pretoria: Van Schaik. pp. 112-116.)

⁸¹ Fouche, C.B. 2005. Qualitative research designs. (In De Vos, A., Strydom, H., Fouché, C.B. & Delpont, C.S.L. eds. Research at grass roots. 3rd ed. Pretoria: Van Schaik. pp. 315.)

⁸² Polit-O'Hara, D., & Beck, C. T. (2006). *Essentials of nursing research: Methods, appraisal, and utilization* (Vol. 1). Lippincott Williams & Wilkins

⁸³ Mugenda, M. Olive and Mugenda G. Abel. 1999. Research Methods: Quantitative and Qualitative Approaches. Nairobi: ACTS Press. P10

Department of Agriculture officials and 3 national government agricultural and food security experts from the Ministry of Agriculture. In total, 18 interviews involving (10) Laikipia farmers' representatives, (5) Laikipia County Department of Agriculture officials and (3) national government agricultural and food security experts conducted.

3.7 Data Collection Instruments

Data collection is the process of identifying data or information sources; developing research tools that enable collection such data or information; determining suitable sample population to collect the said data or information from; and employing the approach of gathering such data and information in the field from the participants or stakeholders.⁸⁴ In a research study, the role of the researcher in data collection process involves collection of data from the field and interpretation of the collected data into information with meanings.⁸⁵

3.8 Description of data collection procedure

Research procedure is the approach used or adopted and guide steps before data is collected, data collection and how data is handled after collection.⁸⁶ Once the researcher was given permission to collect data by the University, the researcher adhered to all the ethical issues that pertain to data collection as per University Research Ethical Code of Conduct. The student further requested for permission to collect data from Laikipia County Government. In consultation with Laikipia County

⁸⁴ Ibid, p. 48-52.

⁸⁵ Marshall, C. & Rossman, G.B. 2011. Designing qualitative research methods. [http://www.amazon.com/Designing-Qualitative-Research-Catherine Marshall/dp/141297044X](http://www.amazon.com/Designing-Qualitative-Research-Catherine-Marshall/dp/141297044X). Date of access: 14 Aug., 2019, p. 57-58.

⁸⁶ Elmusharaf, K. 2019. Qualitative sampling techniques. University of Medical Science and Technology. PowerPoint presentation: <http://www. Qualitative-sampling-techniques-Elmusharaf-2019.pdf>. Date of access: 27 Jan., 2020, slide. 19

Government Department of Agriculture, the student scheduled interviews with all the participants. The researcher conducted the interviews for a period of 10 days after a prior visit that assisted in refining timings of when participants were available for meeting in the course of the study. It also provided a rough picture of the respondents' expectations.

3.9 Data Analysis

Data analysis is a process of cleaning, editing, correcting errors, detecting liars, or missing values, categorizing and coding and further calculations to achieve a meaningful outcome.⁸⁷ Data from the key informant interview guide was analysed using content analysis. The content analysis is a technique where the key themes guide the analysis in making inferences by systematically and objectively identifying specific characteristics of responses and using the same to relate to trends.⁸⁸ Qualitative data analysis involved explanation of information obtained from interview schedules. This was done through discussion and explanation of study findings.

3.10 Ethical Considerations

Ethics is concerned with the morals or what is wrong and right.⁸⁹ A research study must adhere to societal values and norms and factor in what people, organization, or community consider as moral or not. Participation in a study should be voluntary and the targeted participants informed in advance about the study and its goals.⁹⁰

⁸⁷ Kothari, .C. R. (2014), *Research Methodology: Methods and Techniques*, 2nd Edition, Sri Lanka: New Age International Publisher, p. 91.

⁸⁸ Kolb, D., A., and Frohman, A., L., (2014), *An organizational development approach to consulting*: Sloan management review, 12 51-65.

⁸⁹ Werther WB & D Chandler, *Strategic Corporate Social Responsibility: Stakeholders in a Global Environment*. Thousand Oaks: Sage Publications, 2011, pp. 20–21.

⁹⁰ Patton, M.Q. 2002. *Qualitative Research & evaluation methods*. 3rd ed. Los Angeles, CA: Sage, p. 131.

The researcher sought approval from National Commission for Science, technology and innovation (NACOSTI). The essence of this study was explained to the interviewees by the researcher. The researcher respected interviewees' consents. Anonymity of the respondents was maintained and they were assured that the information they gave would be treated confidentially and for the purpose intended only.

At the completion of the study, data in soft copy was stored in computer's hard disk with password only accessible to research team, to protect the document from access from being manipulated or used by other non-researchers. The respondents were treated fairly in terms of benefits and risks.

3.11 Study Limitation

Every study has its own challenges, weaknesses, and limitations based on the context and environment in which it is undertaken.⁹¹ The limitation was that there was a language barrier in the data collection field due to the diversity of cultures in Laikipia County. However, the researcher addressed this by employing local interpreters that assisted in interpretation of information between the locals and the researcher. Logistical challenges, time constraints, and the wider geographical Laikipia County was addressed by adopting purposive sampling technique that saved on time but still provided a sample size that revealed valid information about food security or insecurity in Laikipia County.

⁹¹Kolb, D., A., and Frohman, A., L., (2014), *An organizational development approach to consulting*: Sloan management review, 12 51-65.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1: Introduction

This chapter field data analysis and discussions were based on the study five key objectives: To assess the levels of food security in households in Laikipia County; to establish the adequacy of the legal and policy frameworks regulating food systems in Laikipia County; to investigate the challenges in the implementation of legal and policy frameworks regulating food systems in Laikipia County; to analyse the role of the County government in ensuring food security in Laikipia County; and to establish the optimal regulatory arrangement for guaranteeing food security for people in Laikipia County. The data analysis and discussions incorporated interview findings from Laikipia farmers, Laikipia County Government officials and the National Government experts on agriculture and food security.

4.2 Response Rate

Due to logistical challenges, time constraints, and the wider geographical Laikipia County was, this study adopted purposive sampling to select 10 Laikipia farmers' representatives that sits Executive Committee. The study also purposively selected (5) Laikipia County Department of Agriculture officials and (3) national government agricultural and food security experts from the Ministry of Agriculture. In total, 18 interviews involving (10) Laikipia farmers' representatives, (5) Laikipia County Department of Agriculture officials and (3) national government agricultural and food security experts conducted as was sampled.

4.3 General Laikipia County food security information

This section discussed general information about Laikipia County food security such as; the types of foods grown in Laikipia County, the types of foods grown for subsistence and commercial in Laikipia County, and the impact of Laikipia County farmers' crops growing pattern and their households' food security.

4.3.1 The types of foods grown in Laikipia County

In the interviews with farmers' representatives (henceforth farmers), they indicated they planted cereals, vegetables and fruits such as maize, beans, millet, peas, cabbage, kales, spinach, potatoes, tomatoes, bananas, oranges, and mangoes. The farmers also mentioned they reared livestock, poultry and fish such as cattle, goats, camels, donkey, chicken, duck, tilapia, and sheep for egg, meat and milk consumptions and trade and for fur and leather business. The finding corroborated with five interview feedbacks from Laikipia County Government officials that explained Laikipia farmers practiced mixed farming approach rearing livestock and growing different types of cereals, vegetables and fruits. One farmer stated:

“We grow maize, beans, millet, peas, cabbage, kales, spinach, potatoes, tomatoes, bananas, oranges, and mangoes. We also keep livestock, poultry and fish such as cattle, goats, camels, donkey, chicken, duck, tilapia, and sheep for egg, meat and milk that we eat and sell”.

Source: Interview Field Data (2020)

4.3.2 The types of foods grown for subsistence and commercial in Laikipia County

The interviews revealed one farmer grew more than one type of crops both in small and large scales, practiced different farming methods, and ventured into growing more than one commercial or cash crops in Laikipia County. In the ten interviewed

Laikipia farmers, seven farmers indicated they planted maize in large scale for commercial purposes but still grew other crops such as tomatoes, bananas, spinach, cabbage, kales for family consumptions. Five farmers stated they kept large stocks of cattle, sheep, and goats for dairy, meat and hide business but grew crops in small quantities as food to support their families. Another six farmers said they also ventured into commercial oat farming to improve their harvests and earnings. Further, four farmers had fishponds and produced fish for local consumption needs. This finding supported five Laikipia County Government officials' responses that explained Laikipia farmers practiced both subsistence and commercial farming with maize crop and livestock rearing being the most highly practiced for commercial purposes while still maize, beans, millet, peas, cabbage, kales, spinach and fruits being grown in small scales for family consumptions. Below were better responses captured from two farmers during the interviews:

“Mostly I grow crops to sell and feed my family. I have three parcels of land. I use one to grow family food and two to grow crops to sell. I grow maize, tomatoes, bananas, beans, millet, peas, cabbage, kales, spinach and fruits to feed my family. In the other parcels, I only grow maize and wheat in large quantity for sale.”

Source: Interview Field Data (2020)

“I cultivate my land and keep livestock to support myself and my family. I plant maize, tomatoes, beans cabbage, and sukuma wiki for my family. I also have cattle, sheep, goats that I sell to our local markets. I also recently built a fishpond and already supplying fish in small quantity.”

Source: Interview Field Data (2020)

The three national government agricultural and food security experts were even more specific; they explained that Laikipia small-scale farmers practiced crop rotation, inter cropping, sequential cropping, and relay cropping methods since most of these farmers grew crops for subsistence while large-scale farmers largely practiced

mono cropping in large parcels of lands since they practiced commercial farming. They further explained livestock were reared in Laikipia County for commercial dairy, meat and leather products.

The findings above affirmed Laikipia farmers practiced mixed farming thus kept poultry (chicken, and duck), fish (tilapia), and livestock (cattle, goats, sheep, camels, and donkey) and grew crops such as maize, beans, millet, peas, cabbage, kales, spinach, potatoes, tomatoes, bananas, oranges, and mangoes in small scale and large scale both for cash and for family consumption. This finding supports earlier study by Westminster that found Laikipia County residents practiced small-scale farming and large-scale farming for subsistence and commercial purposes.¹ This means Laikipia County was contributing to food security by producing foods for local and external use.

4.3.3 The impact of Laikipia County farmers' crops growing pattern and their families' food security

When asked in the interview how size of lands they weeded and crops they planted affected their family food security, seven farmers stated they grew vegetables such as Irish potatoes, sweet potatoes, carrots, sukuma wiki, cabbages, and fruits such as oranges, avocados, and mangoes but these foods could not sustain their families until the next harvesting season. The farmers explained when their families faced food inadequacy or scarcity; they used two approaches to survive. First, they converted portion of maize harvests meant for commercial trade to family food store. If they had sold all their commercial harvests, they adopted other approach and relied on

¹ RESULTS UK, Concern Worldwide, and University of Westminster. 2019. What Works for nutrition? Stories of success from Vietnam, Uganda and Kenya. London and Dublin. 28(3), 91.

purchasing food items from the local markets to sustain their families until next harvesting seasons.

Six of the farmers in mixed farming explained that when their families ran out of food stocks before next harvesting season, they sold their livestock and poultry to buy food to sustain their families. The seven farmers that practiced both small and large-scale farming explained they sub divided their farms for cultivation of commercial and family crops. The three other farmers said they practiced small-scale farming since their lands were small and could not support venture into large-scale farming. Two farmers' responses read:

“The food I grow most time cannot take me to the next season because I have a large family. When times are hard, I remove maize I sell for family to eat. At times, I sell my livestock during hunger for my family to eat.”

Source: Interview Field Data (2020)

“I plant maize to sell and to eat. I also plant Irish potatoes, sweet potatoes, carrots, sukumawiki, cabbages, oranges, avocados, and mangoes for my family. My lands are small. I have sub divided my lands. This work better for me. I also have livestock that I sell for meat and my camels fetch me some money on milk.”

Source: Interview Field Data (2020)

These findings corroborate with five Laikipia County Government officials that reported food distress was most common in small-scale farmers' households since they cultivated small pieces of lands that yielded low farm output and could not sustain family until next season of harvesting. The three interviewed national government officials explained why small-scale farming leads to food insecurity. They explained small-scale farmers most often do not apply modern farming practices and use of technology to boost food productions. For instance, some small-scale farmers do not use fertilisers, pesticides and inadequately weed their crops as required

increasing poor harvests and family's hunger. One Laikipia County Government official said:

“In this county, food distress is most common in small-scale farmers’ households. It is because small-scale farmers ignore use of fertilisers, pesticides, use of technology to preserve milk and better land cultivation methods.”

Source: Interview Field Data (2020)

The findings above confirmed foods Laikipia farmers produced could not sustain them and their families until the next harvesting season and they converted portion of maize meant for sale to feed their family or purchased foods items from the local markets to feed. This finding reinforce Waithaka *et al.*, study that documented that about 40 percent of the population live below the poverty line and are permanently food insecure, another 40 percent are normally food self-sufficient but are vulnerable to shocks and the rest are food secure.² The case in which foods produced could not sustain farmers and their families until the next harvesting season means the National food framework and Laikipia County integrated development plan had not yet lifted the county from food insecurity.

4.4 To assess the levels of food security in households in Laikipia County

This section discussed how family size, family type and the head of households’ age, level of income, and level of education and training influenced household food security.

² Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

4.4.1 The impact of income level of households' heads and farming practices on family food security.

The interview results revealed the income level of farmers influence farming practices they adopt and food production outcome thus affecting household food security. All the interviewed heads of households (farmers) agreed that their income levels determined farm inputs they could afford and purchased to improve their farm harvest yields. Four farmers said last planting season, they planted without fertiliser because they could not afford it making them get low yield returns that could not adequately feed their families. Another five farmers said they failed to prepare their lands in the procedure they were taught by agricultural extension officers because they could not afford farm machineries. Six farmers also explained at some point during the farming cycle, they skipped applying some particular pesticides to save on cost and feed their families. All the ten farmers interviewed agreed high cost of farm inputs had prohibited them at some point in different farming cycles or seasons to acquire the best pesticides, fertilizers, farm machinery or prepare their lands as per the agricultural best practices. They explained this resulted in low yields in their farms and they could not find adequate foods to feed their families until next harvesting seasons. One farmer said:

“My income affects me a lot as a farmer. I only use farm inputs I can purchase. In my last planting season, I did not use fertiliser because I had no money. That was not the first time, sometimes, I skip using pesticides to save money and feed my family. This makes me sometimes harvest nothing and spend money buy food in the market for my family to survive. I do sometimes sell my livestock to feed ourselves.”

Source: Interview Field Data (2020)

These findings matched with the five Laikipia County Government officials' responses in which they explained high cost of farm inputs was a challenge to the

county's efforts to become food secure. They explained significant number of Laikipia households lived on one dollar a day and, therefore, when the cost of farm production was high, they avoided using pesticides, fertilizers, farm machineries or failed to prepare their lands in the right way, which gives low harvest returns leading to households' food insecurity. One official explained, *"These farmers do avoid using farm inputs such as pesticides and fertilizers seeing it as costly. But this is costing them. Low yield means they buy food for their families"*.

The three national government agricultural and food security experts explained the relationship between farmers' income level and food security. According to the experts, financial strength or position of a farmer directly influences the level of farm inputs investment level. Thus, when a farmer has no money, they would avoid costly farm expenditures but this means their crop yields becomes low exposing their immediate families to hunger.

The interview results above confirmed most Laikipia farmers could not afford to purchase farm inputs such as pesticides, fertilizers, farm machinery or prepare their lands better to improve their harvest yields due to low-income level. This resulted in low yields and they could not produce adequate foods to feed their families and sale. This finding supported Kilonzi study that also established income level of a farmer affects their investments in agriculture.³ This finding means low-income level of Laikipia farmers was advancing county's food insecurity and negating adoption of practices that improving food security.

³ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Oriented in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

4.4.2 The impact of households' size and farming practices on family food security.

The interview results established household size and farming practices heads of households adopt directly determined the level of household food security. For instance, six farmers with households of more than four family members reported severe food distress than the four farmers with less than four family members in the household. The six farmers explained that they practiced subsistence farming but due to high food consumption level in their households, the foods they produced could not adequately sustain them and their families until the next harvesting seasons. Thus, they sold their poultry or livestock to buy foods from the market to supplement their farm produce. This was contrary to the four farmers that even though faced food inadequacy at some point, they did not run out of their food stock so fast.

“I have a family of six. Every harvesting season, the food I produce cannot adequately sustain my family until I harvest again. My family also consume a lot of food. I have to keep poultry and livestock to sell to buy food for my family. This is how I have been surviving in hard times”

Source: Interview Field Data (2020)

The finding above corroborated with the five Laikipia County Government officials feedback in which they stated large family size households in Laikipia were the most affected with food scarcity when crops fail. They explained that small households consumed low volume of foods compared to large households with several family members. This was further reinforced with the three national government agricultural and food security experts that underpinned the smaller the size of households, the smaller the volume of foods used and vice versa when the size of households are large.

The results above affirmed both small sized households (with less than four members) and large sized households (with more than four members) in Laikipia County affected with food insecurity but large sized households more severely affected. This finding supported African Women's Study Centre study that also established that the level of food insecurity increases with household size in Laikipia. ⁴ This finding means small sized households lower food insecurity and larger households advance food insecurity in Laikipia County.

4.4.3 The impact of age of households' heads and farming practices on family food security.

The study did not establish clear relationships between age of household heads and the households' food security. For instance, the two interviewed farmers stated their age brackets were below 25 years, three were between 25-40 years while another five were above 40 years. However, when it came to food insecurity, the study found these farmers faced almost similar farming challenges and/or food security challenges. For instance, both a farmer below 25 years brackets and a farmer above 40 years brackets stated them and their households faced hunger and food scarcity when their crop yields were low. The study also found farmers of all the age brackets (below 25 years, 25-40 years and above 40 years) practiced mixed farming and were in both subsistence and commercial farming.

In response to this topic, the five Laikipia County Government officials' feedbacks supported farmers' responses as they said head of household age had been insignificant factor affecting household food security but other factors such as inadequate finance, climate change, water scarcity, high cost of farm inputs, high cost

⁴ African Women's Studies Centre, University of Nairobi (2019): Food Security Research Findings and Recommendations, 36(4), 42.

of energy, poor infrastructures. The three national government agricultural and food security experts however contradicted the above in their responses and said the reason why Laikipia County and other counties in Kenya were still food insecure was because agriculture in the counties were practiced with old generation farmers with less energy, zeal and knowledge thus doing farming in traditional way. An official responded:

“In my opinion, age does not affect these farmers so much. I think our climate change does, inadequate finance does, water scarcity does, low farmers’ education does, high cost of farm inputs does, high cost of fuel does, and so is county bad roads. These are the issues and they influence farmers’ farming practices and farm outcomes.”

Source: Interview Field Data (2020)

The experts tied their responses to farming should be a profession and a career in which a farmer needs to be trained, practice, and a successor in the family horned and prepare to take charge of after the head of household becomes old, experience old age challenges or retires.

“Agriculture is a career. Working in an agricultural related field is rewarding. People that have careers in agriculture are passionate about what they do and want to see the industry be successful and prosperous. Kenya farmers should be trained and becomes professionals”.

Source: Interview Field Data (2020)

The results above found no effect of heads households’ age on food insecurity in Laikipia County. However, the study found Laikipia farmers (despite age difference) faced almost similar farming challenges and/or food security challenges. This finding contradicted Ogalleh *et al*, study that established households with older heads were

more worried about food than households with younger heads in Laikipia County.⁵ This contradiction could tie to truth in the interviewees' responses or time period in which this study is undertaken and the other study was undertaken.

4.4.4 The impact of education and training of households' heads and farming practices on family food security.

The study established clear relationships between education and training of heads of households and the households' food security. When asked how their levels of education and training affects their farming practices and food for their family, two farmers below 25 years old, and two farmers between 25-40 years age brackets explained they were not so much affected by food insecurity at the household levels because they studied agriculture in college and understood what they needed to do to become food secure at family level. However, they reported due to climate change, they experienced below expectation yields in their commercial farming or cash crops. The other farmers not in this category reported food insecurity in households based on this criterion alone. A farmer responded:

"I studied agriculture as my career. I really know what to do and maximize my skills in farming. I believe I am getting the best out of my knowledge. However, despite my know-how, limited capital, climate change, high cost of farm inputs, fuel and energy, and bad roads affects my commercial farming."

Source: Interview Field Data (2020)

This finding corroborated five Laikipia County Government officials' responses as they explained the major impediment Laikipia County Government faced in eradicating food insecurity in households was poor farming methods, low level of skills and awareness about modern farming practices among the old age farmers in

⁵ Ogalleh, S. A., Vogl, C. R., Eitzinger, J., & Hauser, M. (2019). Local perceptions and responses to climate change and variability: The case of Laikipia District, Kenya. *Sustainability*, 4(12), 302-304.

Laikipia County. The three national government agricultural and food security experts' responses added to this by expanding the major barrier that had been to food security in not only Laikipia but also the rest of the country was a generation of large population of farmers that have no agricultural background as a profession. The experts explained just like in other professions where unqualified employee was not able to perform; unskilled farmers would not deliver Kenya from food insecurity. One expert observed:

“Kenya farmers lack education and training which is promoting low farm returns. Training helps farmers to incorporate the latest scientific advances and technology tools into their daily operations. The results of enhancing their operations with these tools increases efficiency and can lead to less harm to the environment, improve production and reduce food contamination in Kenya.”

Source: Interview Field Data (2020)

As per the results above, though all Laikipia farmers' produces (whether educated or not) varied insignificantly, an educated farmer was more exposed and knew what to do in addressing his agricultural challenges. This supports Kaumbutho and Kienzle study that found food insecurity was high among households headed by those with low levels of education in Laikipia County.⁶ This means educated farmers practices better farming approaches and appropriately addresses agricultural challenges and could therefore be asset in fight against food insecurity in Laikipia County.

⁶ Kaumbutho, P., & Kienzle, J. (2019). *Conservation agriculture as practised in Kenya: two case studies*. Nairobi, Kenya: African Conservation Tillage Network (ACT); Centre de Coopération Internationale de Recherche Agronomique pour le Développement (CIRAD); Food and Agriculture Organization of the United Nations (FAO), pp. 1–4.

4.4.5 The impact of marital status or single parenthood of households' heads and farming practices on family food security.

The study established marital status or single parenthood of households' heads indirectly influenced the households' food security. The study established marital status or single parenthood of households' heads did not affect households' food security by the prism or spectrum of being in marriage or not. However, it affected households' food security in the sense that most single parents had low size family members (below three but mostly two) and therefore could tilt small piece of land but because of low family food volume consumption take long to deplete the farm produce or harvests. However, in married family set up, the family members were large (between 4-8 family members) therefore that rate of depletion of farm harvests were high compared to single parenthood families. For instance, in the interview with the ten Laikipia farmers, three farmers in single parenthood with two family members each stated they experienced low to almost nil food distress compared to the eight other farmers in marriage set ups with between 4-8 family members. This means while heads of households in marriage set ups could be even producing large volumes of farm harvests that single parenthood families, they depleted the food stock faster than single parenthood due to large family members and high volume of consumption.

One farmer responded:

"I have one child. It is me and her. I have one large piece of land. I make sure I cultivate it properly using fertilizer and pesticides. Once I do that, I normally get between 23-30 bags of maize and 2 bags of beans. I also plant few vegetables. Plus my mitumba business, I have never experienced food shortage in my family".

Source: Interview Field Data (2020)

This finding above however contradicted five Laikipia County Government officials' report that food insecurity experienced equally in both single parenthood and marital

headed households in the county. The County Government officials stated both heads of such households often reported family burden, high cost of living, financial constraints and depletion of their harvests as they sought for assistance from the county's administration. The three national government agricultural and food security experts' responses reinforced the County Government officials' position and stated there was no major difference in source of food insecurity in single parenthood and marital headed households since both go through family burdens, skyrocketing cost of living, financial problems and poor farm yields. The finding above could however be tied to the smaller the size of household the lesser the consumption rate hence less food scarcity.

The results above confirmed married and single parenthood households affected with food insecurity based on home size and not marital status of heads households. The married households in Laikipia County experienced severe food distress than single parenthood households due to large home size (many family members). This finding was opposite Kimani-Murage study finding that households headed by women are more food insecure than those headed by men in Laikipia County.⁷ Perhaps this subject requires further investigation or interrogation by future scholars to determine the true position.

4.5 The adequacy of the legal and policy frameworks regulating food systems in Laikipia County.

This section discussed the agricultural policies Laikipia farmers were aware of and apply in farming practice; the effectiveness and ineffectiveness of Laikipia

⁷Kimani-Murage, E. 2019. Lessons other countries can learn from Kenya's ambitious nutrition plan. *The Conversation*. (available at: [https:// theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921](https://theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921)). 35(2), 131.

Government budget on Laikipia County food and agricultural agenda; the effectiveness and ineffectiveness of CIDP 2018-2022 on Laikipia County food and agricultural agenda; the effectiveness and ineffectiveness of NFNSP-IF (2017-2022) on Laikipia County food and agricultural agenda; and other food security laws or frameworks Laikipia County use and/or adopted

4.5.1 The agricultural policies Laikipia farmers aware of and apply in farming practice

The study established Laikipia farmers were not aware of all the legal and policy frameworks regulating food systems in Kenya and Laikipia County but had knowledge of some specific laws. For instance, in the interview, six of the ten farmers stated they knew about the Constitution of Kenya 2010 and that it guaranteed their rights to food. This above average level of awareness could be underpinned to when Kenyans were required to read the Constitution, understand it, before they voted for or against it. Another four farmers were aware of the Crop Act, three were aware of Fisheries Act and one was aware of Irrigation Act. At the county level, only one farmer was aware of County Government of Laikipia Second County Integrated Development Plan 2018-2022. The rest of said they were not aware of Laikipia County Government policies on agriculture and food security but occasionally followed news on their agricultural budgets. All these farmers stated they knew the existence of these laws but not their contents, which means they could not apply them in their farming practices. One farmer responded:

“I know the government has plans to eliminate hunger and poverty in our county. I also see county making efforts to support us as farmers in our farming activities. But I am not aware of food laws and frameworks you are asking about. I only know there is Constitution that give me right to have food and irrigation policy that our county

want to use to support us not to rely on rains. But no government has taught about the many laws you seem to inquire about”

Source: Interview Field Data (2020)

When asked of their awareness about National Food and Nutrition Security Policy Act 2011 or National Food and Nutrition Security Policy Implementation Framework (2017-2022), only one farmer was aware of National Food and Nutrition Security Policy Act 2011 but not National Food and Nutrition Security Policy Implementation Framework (2017-2022). This low level of both county and national laws and frameworks on food attributed to low awareness campaign. What low level of Laikipia farmers’ legal and policy frameworks regulating food systems in Kenya and at the county means were that they were not able to know what the law states about some of their agricultural practices and what they should do. This means the legal and policy frameworks regulating food systems become impossible to apply by farmers in their daily agricultural practice.

The above finding contradicted the five Laikipia County Government officials’ position that most Laikipia farmers were aware of the food regulations and laws they need to follow when conducting or undertaking their agricultural practices in the county. But the farmers responses were stressed out by the three national government agricultural and food security experts’ that stated most farmers in Laikipia and the rest of country needed robust awareness and training campaigns because they lacked basic knowledge about the laws and policies governing food in the country and in counties.

The findings above ascertained Laikipia farmers were not aware of robust food policies in the country. These findings could point to why farmers still use traditional

farming approaches that yield few returns as established by Waithaka et al., study.⁸ What this Laikipia farmers' low level of awareness of the legal and policy frameworks regulating food systems means was that it become impossible to apply best farming practices advocated by the frameworks when they were not aware of them. The Laikipia farmers' ignorance of food policy frameworks therefore negates efforts to improve food safety and food security in the county and country.

4.5.2 The effectiveness and ineffectiveness of NFNSP-IF (2017-2022) on Laikipia County food and agricultural agenda.

The five Laikipia County Government officials explained that they adopted National Food and Nutrition Security Policy Implementation Framework (2017-2022) and anchored it as strategic plan that guides Laikipia County food operations and agricultural activities. They explained that so far, the county had implemented part of the framework to come up with methods and strategies to tackle perennial food distribution challenges, erect food storage facilities and strategic reserves, and address nutrition issue in the county especially infant malnutrition. The county was also guided by the framework in establishing and installing local infrastructures such as roads, bridges, agricultural institutes and centres, and markets that would support future of agriculture in the county and enhance food security.

The County Government officials however stated NFNSP-IF (2017-2022) was largely adapted from National Food and Nutrition Security Policy Act 2011 enacted when counties were still young to give their inputs based on experience on what contents and issues that should have been incorporated in the framework. The county officials further explained they faced several challenges in implementing NFNSP-IF (2017-

⁸ Waithaka, M., Nelson, G., Thomas, T. & Kyotalimye, M., 2019. Kenya. In: *East African Agriculture and Climate Change*. Washington, D.C.: International Food Policy Research Institute. 126(2), 79.

2022) because it lacked guiding financial plan that should accompany the framework and resources mobilization plan as operational tool. Below was one vivid response and explanation by the county official:

“As county officers, we used national food framework to blend our county policies and agendas. So far, based on national food framework and county plans, we have addressed a number of issues such as food distribution problems, food reserves shortages, building markets, roads, farmers’ centers. But some problems with I find with food framework is that it is not clear, sometimes not easy to understand and lack proper guiding implementation tools such as financial indicators, implementation schedule, timescale and other assessment tools.”

Source: Interview Field Data (2020)

The above finding were contradicted by the three national government agricultural and food security experts that stated while the implementation of NFNSP-IF (2017-2022) was a challenge due to its complexity and both national and county financial constraints, it had all the necessary operating tools to ensure counties adopt and implement it fully. The experts explained NFNSP-IF (2017-2022) had risk assessment plan, monitoring and evaluation plan, financial indicators, implementation plan, and resources mobilization plan. This researcher’s perusal of the NFNSP-IF (2017-2022) also indicated it had such tools but some of the tools were complex or rather not simple to understand and be adopted by county officials. The County Government officials’ response on lack of necessary operational tools could therefore be attributed to their failure to read and understand the entire Framework when implementing it, and the complexity of the Framework to understand.

The results above confirmed Laikipia County Government had adopted NFNSP-IF (2017-2022) and used parts of the framework to come up with methods and strategies to tackle perennial food distribution challenges, erect food storage facilities and strategic reserves, and address nutrition issue in the county especially infant

malnutrition. The county was also guided by the framework in establishing and installing local infrastructures such as roads, bridges, agricultural institutes and centres, and markets that would support future of agriculture in the county and enhance food security. However, the study established the challenge was some contents of the framework were not resonating with county needs and it lacked detailed operational tools such as resources mobilization plan and other vital assessment as operational tools. However, three interviewed national government agricultural and food security experts said NFNSP-IF (2017-2022) had risk assessment plan, monitoring and evaluation plan, financial indicators, implementation plan, and resources mobilization plan. This was confirmed by this researcher's investigation of NFNSP-IF (2017-2022) contents.

What Laikipia County officials' responses means was that it could be they have not fully read the contents of NFNSP-IF (2017-2022) and understand the entire Framework when implementing it. The other factor was that some parts or contents of NFNSP-IF (2017-2022) wording were complex and not simple. This researcher's perusal of the NFNSP-IF (2017-2022) indicated it had operational tools but some of the tools were complex or rather not simple to understand and easily adopted by county officials.

4.5.3 The effectiveness and ineffectiveness of CIDP 2018-2022 on Laikipia County food and agricultural agenda.

The County Government officials responded CIDP 2018-2022 was developed to enable Laikipia County become the greatest county with the best quality of life and to empower every household in Laikipia county lead a prosperous life. The County officials' stated CIDP 2018-2022 in combination with NFNSP-IF (2017-2022) had

help the county spearhead and put up structures and facilities which was quickly transforming the county agribusiness, fishery, irrigations schemes, water resources, animal husbandry and other farming patterns and methods in the county. The County officials explained CIDP 2018-2022 was becoming effective in the county's food security since it continued to be used by the county to lay infrastructural foundations such as water, energy, irrigation, roads, technology, and communication to support both national and county food security agenda. The County Government officials however explained CIDP 2018-2022 was not fully effective in county's agricultural matters as it was intended when developed by the county because it had partially been implemented due to inadequate county budget and financial constraints.

“...oh, you are asking about the county integrated plan? The plan was developed by us. It has helped us move fast to support farmers in the county. the plan is well detail, objective and cover county problems. Through it, we have put up and continue with infrastructures developments in different sectors e.g. roads, water, energy, irrigation, technology, and communication. It has also improved agribusiness, fishery, and animal husbandry. However, our county integrated plan is not 100% working because some parts of it are not yet implemented due to county financial limitations. If this can be addressed the plan is very well for our food stability”

Source: Interview Field Data (2020)

The national government agricultural and food security experts explained Laikipia County Government idea of developing its own economic and agricultural blueprint to reinforce areas NFNSP-IF (2017-2022) might have not captured was prudent and strategic mission to achieve food security. The experts however opined that operationalization of CIDP 2018-2022 should not overshadow the implementation of NFNSP-IF (2017-2022) but rather they should be looked jointly when allocating resources and undertaking county's food and agricultural activities.

The above results ascertained CIDP 2018-2022 was effective in helping the county spearhead and put up structures and facilities that was quickly transforming the county agribusiness, fishery, irrigations schemes, water resources, animal husbandry and other farming patterns and methods. The CIDP 2018-2022 was also responsible for infrastructural foundations such as water, energy, irrigation, roads, technology, and communication that support both national and county food security agenda. However, some parts of CIDP 2018-2022 was not operational due to inadequate county budget and financial constraints. This finding supports Kimani-Murage study that found limited budgets and financial constraints were some of the factors affected food security implementation in Kenya's counties.⁹ This means unless financial inadequacy addressed, Kenya's counties would still be food insufficient and insecure.

4.5.4 The effectiveness and ineffectiveness of Laikipia Government budget on Laikipia County food and agricultural agenda.

The five county government officials explained the county's food and agricultural activities for the last three consecutive years was hampered with inadequate budget and financial limitations. They explained the county received budget allocation below its agricultural plans and expenditures estimations and this adversely affected the county's overall implementation of its policies and support of local farmers. The county officials stated in FY 2017/18, FY 2018/19, and FY 2019/20 the county received Kshs. 4,499,800,000, Kshs 4,113,400,000, and Kshs. 4,061,000,000 respectively from the national government against its budget estimations and this negatively affected county budget allocation in agriculture and food security plans.

An official said:

⁹ Kimani-Murage, E. 2019. Lessons other countries can learn from Kenya's ambitious nutrition plan. The Conversation. (available at: [https:// theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921](https://theconversation.com/lessons-other-countries-can-learn-from-kenyasambitious-nutrition-plan-49921)). 35(2), 131.

“In this county we have very good plans. Our county budget is also well comprehensive. The only issue that affect goodness of our plans and budget are funds. Lack of funds is source of some of county plans and budgets dormancy”

Source: Interview Field Data (2020)

This corroborated with national government agricultural and food security experts that opined limited finance was to great extent paralyzing implementation of key food policies and frameworks in the country and counties. Perhaps this finding explains the low level of Laikipia farmers’ awareness about the governing national and county governments’ food and agricultural policies. It could be financial inadequacy limited the county’s ability to train local farmers of the existing food and agricultural policies or frameworks in addition to the best practices they should adopt.

The findings above confirmed Laikipia County had comprehensive and robust agricultural budget plan to address all county food needs. However, low financial allocation from national government adversely affected the county’s overall implementation of its agricultural policies and support of local farmers. This finding further reinforce Ahaibwe et al., study that found limited budgets and financial constraints were some of the factors affected food security implementation in Kenya’s counties.¹⁰ This means Laikipia County would continue to be food insecure due to failed food policies implementations unless national government increase budget allocation towards agriculture to 10 percent as per Comprehensive Africa Agriculture Development Programme Treaty.

¹⁰ Ahaibwe, G., Mbowa, S. & Lwanga, M.M. 2019. Youth Engagement in Agriculture in Kenya: Challenges and Prospects. Research Series No. 106. Kampala, Economic Policy Research Centre. 7: 14-15

4.5.5 The other food security laws or frameworks Laikipia County use and/or adopted

The interviewed five county government officials explained other foods and agricultural laws were still in force in the county and Laikipia was guided and regulated by the Agriculture and Food Authority Act (AFA) 2013; National Agricultural Sector Extension Policy (NASEP); Agriculture Sector Development Strategy (ASDS) 2009; Kenya Vision 2030; Kenya_Youth_in_Agribusiness_Strategy 2017-2021; Kenya Climate Smart Agriculture Implementation Framework 2018-2027; Roots and Tuber Crops Strategy 2019-2022; Crops Act; Fisheries Management and Development Act, 2016; and The Irrigation Act, 2019 among others. The county government officials added that enforcement of the above regulations and other policies were hampered by the county's financial limitations. This corroborated national government agricultural and food security experts' position that limited finance paralyzed the implementation of food policies and frameworks in the counties.

4.6 The challenges in the implementation of legal and policy frameworks regulating food systems in Laikipia County.

This section discussed the challenges Laikipia farmers experience in adopting agricultural policies. The challenges Laikipia County Government experience in implementation NFNSP-IF (2017-2022). The challenges Laikipia County Government experience in implementation CIDP (2018-2022). The challenges Laikipia County Government experience in implementation of its agriculture budget plans. The challenges Laikipia County Government experience in implementation of other food security laws and regulations.

4.6.1 The challenges farmers experiences in adopting agricultural policies.

The study established Laikipia farmers experienced several challenges in adopting best agricultural policies and practices. During the interview, all the ten farmers admitted they were not aware of all the foods and agricultural policies or practices they should know and adopt when undertaking their farming activities in the county. Six farmers stated Laikipia County Government rarely and inadequately trained them on food policies and regulations they need to use, apply, and comply with in their farms' undertakings. However, eight of the ten farmers explained they were aware they should adopt modern farming approaches such as application of fertilizers, use of pesticides, modern storage methods and machinery in cultivation of lands to improve their crop yields and reduce food scarcity. However, they cited lack of adequate finance as barrier to this. They also cited lack of knowledge and best practices in application of fertilizers, pesticides, and tilting of lands that negated their effort to become food secure. One of the best interviewee responses was:

“We in Laikipia County have capacity to be food self-reliant. We produce lots of raw milk, meat, vegetables and fruits. If we farmers can be trained on food storage and preservation strategies, and again be trained on better dairy farming methods, we can be stable in foods we eat and food we produce to sell. As a farmer, it takes time before I see government or county officer to give me advice on how I do my land, control pest menace and which fertilizer to use and how to use it. Once, the government organize local farmers' workshop after a long time which does not help me much.”

Source: Interview Field Data (2020)

The land question also emerged as a challenge in the interview. In the interview, five farmers mentioned land ownership in Laikipia County had never been fully addressed amongst the locals and was affecting farmers' effort to improve food security. They said some farmers' lands were under court injunctions that affected such farmers' agricultural activities. Cattle rustlers also killed farmers and affecting better livestock

practices and husbandry. Further, Crops also reported destroyed by wild animals such as hippos, elephants, and moneys that invaded farmers' crops. The local culture of pastoralism and low agricultural knowledge also mentioned for large pieces of lands that were idle or unused. Two farmers' responses are in excerpts below:

“Laikipia has large parcels of land to support commercial agriculture. However, such parcels of land are left unattended because majority of us locals prefer to leave them open for cattle grazing than for crop cultivation. The level of land use in our county is also low due to little skills or knowledge of the locals on how to maximize land use.”

Source: Interview Field Data (2020)

“In our county, there is a problem of land ownership. Many lands here do not have proper titles. Others have disputes that have not been resolved until today. Again, our county government and national government have also not addressed conflicts that occur due to land rearing problems. We as local farmers, have also not been trained or properly supported by our governments in commercial livestock rearing for meat and milk and also agri-business productions”.

Source: Interview Field Data (2020)

“Severally, we have been attacked by wild animals. Wild animals such as monkey and hippos also destroy our crops in the farm. But again insecurity is affecting our farming activities. Cattle rustlers steal our livestock and also endangering us kills some of us before. Disputes also always arise on available land for farming due to disagreement over ownership. We do suffer from poor market access due to bad roads”.

Source: Interview Field Data (2020)

The results above affirmed Laikipia farmers were not aware of all the foods and agricultural policies or practices they should know and adopt when undertaking their farming activities in the county to improve food security. Laikipia farmers also faced inadequate training, not conversant with modern farming approaches, inadequate finance. The other challenges were court injunctions due to land ownership, cattle rustling, wild animals' destruction of crops, insecurity, and pastoralism. This finding

was in agreement with Kilonzi study that also found land ownership, human-wildlife conflicts, insecurity, farmers' lack of knowledge, and inadequate training as well as limited finance as some of the issues affecting farming and food security in Kenya.¹¹

4.6.2 The challenges Laikipia County Government experience in implementation NFNSP-IF (2017-2022)

The five interviewed County officials explained that the challenge Laikipia County Government experienced in implementing National Food and Nutrition Security Policy Implementation Framework (2017-2022) was lack of and/or complexity of operational tools guiding implementation of the Framework such as resources mobilization tool, risk assessment tool, monitoring and evaluation tool, financial indicators, implementation tool, and resources mobilization tool. The County officials also cited lack of adequate finance, climate change, water scarcity, low farmers' level levels of education, high cost of farm inputs, high cost of fuel and energy, poor infrastructures such as roads as some of the challenges that directly or indirectly affected effective implementation of the Framework. One county official response was:

“The problem with this food framework is that it is not clear, not easy to understand and lack guiding implementation tools. It is not comprehensive in financial benchmarks to be used, implementation chart, and milestone assessment. This framework implementation is a challenge because of our limited finance, climate change, water issues, low farmers' skills, and high cost living and inputs.”

Source: Interview Field Data (2020)

The above findings corroborated the three national government agricultural and food security experts that went ahead and advised that emerging issues such as global

¹¹ Kilonzi, T. M., 2019. Enhancing Food Security Through Policy Re-Orientation in Laikipia Central, Kenya. *International Journal of Humanities and Social Science*, 3(12), pp. 107-116.

warming, prolonged droughts, water bodies depletion, water and land pollution, inadequate finance, and climate change had impact on the Framework implementation and should be tackled by counties, national government, and all other stakeholders to improve adherences and compliances with the Framework in order to boost food security.

In summary, in the implementation of NFNSP-IF (2017-2022), the county officials reported lack of and/or complexity of operational tools guiding implementation of the Framework such as resources mobilization tool, risk assessment tool, monitoring and evaluation tool, financial indicators, implementation tool, and resources mobilization tool. The County officials also cited lack of adequate finance, climate change, water scarcity, low farmers' level levels of education, high cost of farm inputs, high cost of fuel and energy, poor infrastructures such as roads as some of the challenges that directly or indirectly affected effective implementation of the Framework. These findings were also established by Deotti and Estruch study that reported climate change, global warming, prolonged droughts, water bodies depletion, water and land pollution affected food security.¹² This means Laikipia County food security would still be under threat unless all stakeholders come up with roadmap on how to address emerging challenges such as water scarcity, low farmers' level levels of education, high cost of farm inputs, high cost of fuel and energy, poor infrastructures, warming, and prolonged droughts.

¹² Deotti, L. & Estruch, E. 2019. Addressing rural youth migration at its root causes: A conceptual framework. Rome, FAO. 3(4), e129-130

4.6.3 The challenges Laikipia County Government experience in implementation CIDP (2018-2022)

The County Government officials stated they well understood CIDP 2018-2022 vision and its contents and the only major barrier to its implementation was inadequate county budget allocations and financial constraints. The County officials also mentioned other challenges such as county staff teamwork, logistics, and further trainings that should be addressed the county government.

“Laikipia county integrated plan is robust to address county long term problems. But we face financial gaps as a county to fully adopt this policy. Over the period, county staff teamwork, logistics, trainings issues have also emerged.”

Source: Interview Field Data (2020)

The national government agricultural and food security experts added that counties pace and mode of implementation of their blueprints and national frameworks was in line with the Constitution of Kenya 2010 and Kenya Vision 2030. However, they stated failure to mobilize local resources, consult and involve local stakeholders, underfunding of agricultural departments, under-training of county agricultural officers, and not cultivating team spirit in the county could lead total collapse of implementation and un-realization of food security in counties and the whole country.

In summary, inadequate county budget allocations and financial constraints were major challenges to the implementation of CIDP 2018-2022. The other challenges were dysfunctional county staff teamwork, logistics, and scarce trainings that should be addressed the county government. This finding also reinforces Deotti and Estruch study that found limited budgets and financial constraints affects food security

implementation in Kenya's counties.¹³ This means in addition to increase in budget allocation that Laikipia County Government should address, its food security would still not be realized if it fails to restructure its dysfunctional county staff teams, improve operational logistics, and advance county staff trainings.

4.6.4 The challenges Laikipia County Government experience in implementation of its agriculture budget plans

The County Government officials explained the challenge in implementation of the county agricultural budget was lack of enough funds that was paralyzing implementation of some of its food policies and sections of its agricultural roles in the county. The County officials cited less than five percent of national agriculture funding as impediment to effective and adequate counties budget allocations in agriculture. The County officials also mentioned climate change, and county challenges such as water scarcity, low farmers skills, high cost of farm inputs, high cost of fuel and energy, poor roads as some of the challenges to strict adherence to county budgets. The County officials' expressions corroborated the three national government agricultural and food security experts that explained climate change global warming, prolonged droughts, water bodies depletion, water and land pollution, and inadequate finance impacted policies implementation in the country.

In summary, the challenges Laikipia County Government faced in adopting its agricultural budget plans were lack of enough funds, climate change, water scarcity, low farmers skills, high cost of farm inputs, high cost of fuel and energy, and poor roads. These findings were also established in Deotti and Estruch study that reported limited finance, climate change, global warming, prolonged droughts, water bodies

¹³ Ibid, p. 61

depletion, water and land pollution affected food security.¹⁴ This means unless these factors addressed so that Laikipia County budget becomes adequate and effective, food security would still not be met in Laikipia.

4.6.5 The challenges Laikipia County Government experience in implementation of other food security laws and regulations

The county government officials explained Laikipia County was guided and regulated by other policies such as Kenya Vision 2030; Kenya Youth in Agribusiness Strategy_2017-2021; Kenya Climate Smart Agriculture Implementation Framework 2018-2027; Roots and Tuber Crops Strategy 2019-2022; Crops Act; Fisheries Management and Development Act, 2016; and The Irrigation Act, 2019 among others. The county government officials however stated the implementation these regulations were adversely affected by both county and national governments limited budgets. This finding supported national government agricultural and food security experts' position that limited finance was paralyzing the implementation of food policies and frameworks in the counties. An official commented:

“In this county we have very good plans. Our county budget is also well comprehensive. The only issue that affect goodness of our plans and budget are funds. Lack of funds is source of some of county plans and budgets dormancy”

Source: Interview Field Data (2020)

The above results indicate inadequate sharing of national revenues by the national government to the counties negatively influenced Laikipia County services to farmers and efforts to achieve food security. The delay in county revenue allocations study further established paralyzed some of the already rolled out and running county

¹⁴ Ibid, p. 62-64

services. This finding reinforces Patel, Mbagaya and Imo study that reported limited finance affected food security in counties.¹⁵ As mentioned earlier before, unless the national government increases the level of sharing of national revenues to the counties, limited finance would continue adversely affecting implementation of food policies and frameworks at county levels. This would delay achievement of food security in the country. 4.9.7 The ideal regulatory arrangements for food security proposed by Laikipia farmers and county officials.

4.7 The role of the county government in ensuring food security in Laikipia County.

This section discussed farmers' responses on Laikipia government roles on agriculture and the benefits to them. It also discussed functions and services Laikipia county discharge to support food security among locals. It further analyses how national and county governments' budget allocations affect farmers.

4.7.1 Farmers' responses on Laikipia government roles on agriculture and the benefits to farmers

The study established Laikipia County performed a number of several roles in promoting agriculture and food security in the county. In the interview, all the ten farmers said their county government purchased farm inputs such as certified seeds and fertilizers and sold to them at subsidised costs. The county also provided extension services to farmers, creating market for their produce, negotiating with national government on their behalf about fair maize prices, distributing relief foods to the less fortunate in the county and kick-starting irrigation development projects. They also mentioned Laikipia County Government had launched several initiatives or

¹⁵ Patel, P. N., Mbagaya, G. M. & Imo, B. E., 2019. Impact of Climate Change on Food and Nutrition Security in Kenya. *International Journal of Current Research*, 4(1), pp. 242-248.

projects that support farmers such as commercial fish farming, building food storage and reserves, building milk plant. The farmers also stated the county had embarked on infrastructures development building roads, bridges, installing markets and erecting agricultural centres where farmers could seek advice about their dairy, poultry, livestock, and fish services. One response was:

“County government has been supporting us with veterinary services...providing us with chemicals for treating our livestock and spraying our crops against pests. County government has also provided us with field extension officers that have been advising us in farming practices even though they are not enough. County government also come in for us when wildlife destroys our crops.” However, we do not get these services quite often. As a farmer, county government do not meet my daily farming needs.”

Source: Interview Field Data (2020)

“I know our county has been helping us by coordinating market for our agricultural products and implementing minimum tax laws. Our national government is also supporting our farming activities by providing us with fertilizers, extension officers and creating laws that support agriculture”.

Source: Interview Field Data (2020)

However, the farmers explained that while they appreciated county government initiatives were improving food supply and agriculture locally, the county’s budget towards agriculture was very inadequate and farmers located in the interior and far-flung areas of the county were yet to feel the effects of county’s role in food. The farmers also mentioned they were not consistently being trained on modern farming approaches such as best in practice in fertilizer application, pests control, land preparation, modern storage methods, maximum use of lands, and mix farming methods by the county government. One response was:

“As farmers and food producers in Laikipia County, we suffer from lack of adequate finance to venture fully in agri-business farming. At the local level, we also have poor inaccessible roads, few food

storage facilities, inadequate harvesting tools and skills as well as high cost of farming inputs that affect us.”

Source: Interview Field Data (2020)

In summary, Laikipia County Government performed a number of several roles in promoting agriculture and food security in the county. These were selling certified seeds and fertilizers to farmers at subsidised costs, providing extension services to farmers, creating market for their produce, negotiating with national government on their behalf about fair maize prices, distributing relief foods to the less fortunate in the county and kick-starting irrigation development projects. Laikipia County Government had also launched several projects that support farmers such as commercial fish farming, building food storage and reserves, building milk plant. The other initiatives were constructions of roads, bridges, installing markets and erecting agricultural centres.

However, farmers pointed out the county’s budget towards agriculture were insufficient and not all farmers reached by the county’s services. Farmers also reported inadequate training on best in practice farming approaches. This finding matched with Obunde et al., study that found farmers’ low food production to poor farming skills, and low uptake of modern agricultural practices in Laikipia.¹⁶ It therefore follows that unless addressed, inadequate funding as well as farmers’ skills and knowledge would continue to negate Laikipia farmers’ effort to fight food insecurity due to inadequate training.

¹⁶ Obunde, P., Omiti, J., & Sirengo, A. N. (2019). *Policy dimensions in human-wildlife conflicts in Kenya: Evidence from Laikipia and Nyandarua Districts*. Institute of Policy Analysis and Research. 47(4), 726-727.

4.7.2 Functions and services Laikipia county discharge to support food security among locals

The above farmers' responses were similar to the county officials' responses but contradicted them on some issues. The county officials agreed with farmers that the county still faced inadequate funding and budgeting challenges towards agriculture. The county officials however contradicted farmers' position that some farmers were not benefitting from the county services. The county officials explained the county services had reached all farmers in the county and everybody was benefitting from the new services rolled out and discharged by the county on fisheries, extension services, farm inputs, irrigation, milk preservation and processing, farm prices, setting standards for farm products prices, and eliminating intermediaries among others. This contradiction could be pinned on failure by the Laikipia County Government to undertake farmers' services assessment impact. The three national government agricultural and food security experts explained counties including Laikipia County were undertaking rigorous initiatives to improve food security in the counties but assessment of counties impact to the locals was an area that needed extensive research.

In summary, the above findings confirmed there was disparity between Laikipia farmers and Laikipia county officials about the extent and impact of services the county discharges to the locals. While Laikipia farmers stated several farmers unreached by the county services, county officials also mentioned all farmers were receiving county services. This finding reinforces Oloo study that reported several

counties did not invest in agricultural research and development.¹⁷ This contradiction could be pinned on failure by the Laikipia County Government to undertake farmers' services assessment impact. This means unless addressed, Laikipia County continued failure to assess the effectiveness of its services would still leave many farmers unattended.

4.7.3 How national and county governments' budget allocations affect farmers

The study established Laikipia County farmers affected by both national and county governments' budget allocations. During the interview, all the ten farmers said inadequate sharing of national revenues by the national government to the counties affects local governments' budget allocations and functions on agriculture and food security. The farmers explained because their county government had been receiving inadequate funds from the national government, it limits its agricultural budget allocations thus compromising services offered to them. The farmers further stated the often delay in county revenue allocations paralyzed some of the already rolled and running services. The farmers cited the incomplete milk plant project and food reserves construction in the county. This corroborated by Laikipia County officials that underpinned the effectiveness of some of the county services to underfunding by the national government and inadequate county's revenues collection. This further supports the three national government agricultural and food security experts' position that inadequate funding affects county governments functions and food security agenda. One captured farmer's response in the interview was as follows:

“Our county has started many projects in fisheries, dairy, irrigation, milk preservation, extension services, farm inputs, inadequate sharing of national revenues. The funds county government get from

¹⁷ Oloo, J. E. O. (2019). Food safety and quality management in Kenya: An overview of the roles played by various stakeholders. *African Journal of Food, Agriculture, Nutrition and Development*, 10(11).

national government are few and make these projects incomplete and we are yet to realize some benefits in some of the projects.”

Source: Interview Field Data (2020)

4.8 The ideal regulatory arrangements for food security proposed by Laikipia farmers and county officials.

Based on the overall responses by Laikipia farmers and Laikipia county officials, all the food and agricultural policies and frameworks that need to be in place were already established. They stated what would make Laikipia County have ideal agricultural practices and food supply model was the implementation of the existing national and county food and agricultural policies and frameworks. This was the responses of the interviewees. Laikipia farmers emphasized on county adequate budgeting, training, supply of farm inputs, storage facilities, and competitive farm prices as well as fencing protected areas to avoid invasion of crops by wild animals. Laikipia county officials stressed on increase of county revenue sharing formula, address of land ownership problems in Laikipia, stakeholders' address of climate change and reviewing existing food frameworks to make them effective. The national government experts in one way or the other supported Laikipia farmers and Laikipia county officials' positions but added that counties need to invest more in empowering farmers, advancing more resources towards technology and modern farming and embarking on continuous and extensive agricultural research and development.

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This finding corroborated with Dano study that Kenya has robust and enough policies regulating agriculture and food industry that ought to be resourced and implemented fully at national and county levels to guarantee food security nationally and in all counties.¹⁸ The finding was further in line with Dano model of agricultural practice in which the scholar advocates for three tenets or foundations in agriculture to become food secure – (environmental friendly, structurally funded but cost effective, and responds to socio-cultural needs).¹⁹ This means for Laikipia County to attain food security, there were roles itself as a county government, Laikipia farmers, Kenya government and other stakeholders must attend to and address.

¹⁸ Dano, E. (2019). Unmasking the new green revolution in Africa: Motives, players and dynamics. Penang: Third World Network, vol. 34, no. 5, pp. 998–1001.

¹⁹ Ibid, p. 998–1001.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion, and recommendations of the impact of the legal and policy frameworks on food security in Kenya based on findings in chapter four.

5.2 Summary

The study established Laikipia County contributes to food security in Kenya by producing foods for local and external use. However, the foods produced by farmers could not sustain them and their families until the next harvesting season meaning the National food framework and Laikipia County integrated development plan had not yet lifted the county from food insecurity situation.

The low-income level of Laikipia farmers was advancing county's food insecurity and negating adoption of practices that improve food security. This was because most farmers could not afford farm inputs such as pesticides, fertilizers, farm machinery due to financial challenges. Both small sized households (with less than four members) and large sized households (with more than four members) in Laikipia County affected with food insecurity. However, large sized households more severely affected.

The study found Laikipia farmers (despite age difference) faced almost similar farming challenges and/or food security challenges. However, the educated farmers practices better farming approaches and appropriately addresses agricultural challenges and could therefore be asset in fight against food insecurity in Laikipia County. The study found married households in Laikipia County experienced severe

food distress than single parenthood households due to large home size (many family members).

The study established low Laikipia farmers' awareness of robust food policies and frameworks in the country such as NFNSP-IF (2017-2022) and CIDP 2018-2022. The Laikipia farmers' low level of awareness of the legal and policy frameworks regulating food systems was faulted for poor farmers practices as it became impossible for farmers to apply best farming practices advocated by the frameworks when in the first place, they were not aware of the existence such frameworks. The Laikipia farmers' ignorance of food laws therefore derailed efforts to improve food safety and food security in the county.

The study also established Laikipia County Government adopted and used NFNSP-IF (2017-2022) to draw infrastructural developments that support food security such as food storage facilities, strategic reserves, roads, agricultural institutes and centres, and markets. However, the county's challenge was lack of detailed operational tools such as resources mobilization plan and other vital assessment as operational tools accompanying NFNSP-IF (2017-2022) to support implementation.

The CIDP 2018-2022 was also effective for Laikipia County's agribusiness, fishery, irrigations schemes, water resources, and animal husbandry; and responsible for infrastructural foundations in sectors such as water, energy, irrigation, roads, technology, and communication. However, CIDP 2018-2022 was not fully operational due to inadequate county budget and financial constraints. Low financial allocation from national government also adversely affected the county's adoption and implementation of other national food and agricultural policies as well as local food and agricultural budget plans and implementations.

The study further established Laikipia farmers faced the following challenges in adopting better farm practices advocated for by national food framework and county plans; disruption of farm work due to court injunctions over land ownership, cattle rustling, wild animals' destruction of crops, insecurity, and pastoralism. The county officials also reported lack of and/or complexity of operational tools such as resources mobilization tool, risk assessment tool, monitoring and evaluation tool, financial indicators, implementation tool, and resources mobilization tool hindered county's ability to assess or monitor implementation of the national food Framework. The other impediments were; lack of adequate finance, climate change, water scarcity, low farmers' level levels of education, high cost of farm inputs, high cost of fuel and energy, and poor infrastructures in the county.

The challenges county faced in implementation of its CIDP 2018-2022 plan were insufficient funds, dysfunctional county staff teamwork, logistics, and scarce trainings that should be addressed the county government. Other factors were also escalating county's budget plans for instance climate change, water scarcity, low farmers skills, high cost of farm inputs, high cost of fuel and energy, and poor roads.

In its role, study found Laikipia County Government supported county's food and agricultural activities by selling certified seeds and fertilizers to farmers at subsidised costs, offering extension services to farmers, creating market for their produce, negotiating with national government over maize prices, distributing relief foods to the less fortunate in the county, kick-starting irrigation development projects. It also promoted commercial fish farming, building food storage and reserves, building milk plant and roads, installing markets, and erecting agricultural centres.

Despite these efforts, however, study revealed several Laikipia farmers were still unreached by the county services. This was due to county services adversely affected by inadequate sharing of national revenues that limited its capabilities to fund local agriculture and food production. Based on responses from Laikipia farmers and Laikipia county officials, Laikipia County and Kenya at large had all the food and agricultural policies and frameworks that need to be in place to guarantee food security. What was lacking was full implementation of such policies and frameworks to achieve food security.

5.3 Conclusions

The study findings revealed there were several legal, administrative, financial, operational and climatic gaps that need to be addressed to boost food and agricultural activities and projects in Laikipia County, eliminate food insecurity, and achieve food security. The gaps ranged from financial inadequacy, poor infrastructures, invasion of farms by wildlife, lack of understanding of national food security Framework by county officials, lack of operational tools to support implementation of Framework, low farmers' awareness of existing Frameworks, low farmers' knowledge of best practices in agriculture, failure of compliances with some food regulations by county and national governments, to some food regulations being ineffective due to lack of full implementation and among others. The recommendations that follows was based on the following identified problems.

5.4 Recommendations

Based on the summary and conclusions of the findings above, this study recommends the following to stimulate food supply and agricultural activities in Laikipia County:

To address financial inadequacy, a major barrier to implementation of NFNSP-IF (2017-2022), CIDP 2018-2022, Laikipia County Budget Plans, services to farmers and other food policies, both Laikipia County Government and Government of Kenya should comply with the Comprehensive Africa Agriculture Development Programme (CAADP) provision of 10 percent of total annual budgets allocation toward boosting agricultural productivity. CAADP formed in Maputo, Mozambique in 2003 and Kenya is its bona fide member.

To address failure by Laikipia county officials to understand contents of NFNSP-IF (2017-2022) well and its operational tools; all Laikipia County Government, Government of Kenya, all other counties, Ministry of Agriculture, food security experts, law experts, farmers and all other stakeholders should establish forums, seminars, or workshops where all food frameworks regulating Kenya's food and agricultural industry should be discussed, sensitized, and reviewed with the aim to improve their implementations.

To address constant human wildlife conflict and destruction of crops, all protected areas harbouring wildlife should be fenced and all protocols reviewed between animals and humans. Further, all court injunctions stopping fencing activities of wildlife-protected areas like in the case of *County Government of Laikipia vs Ndovu Power Fence and Ecosystem Limited (2017)*) should be addressed and lifted.

To address Laikipia County Government teething problems such as teamwork issues, lack of seamless agricultural logistics, and staff related problems, this study recommends Laikipia County Government to undertake comprehensive staff competency assessment. This would help to point out and address staff training needs, staff adequacy, staff skills, staff qualifications and other matters that would make the

county become effective to farmers, in food productions and the implementations of food frameworks.

To address climate related challenges to the implementations of food frameworks in Laikipia County Government, this study proposes all sectors stakeholders' forum in which all experts, all professionals and all experts discuss the impact of prolonged droughts, global warming, flush flooding, unreliable rainfall patterns, water scarcity, and how to address them.

To address perennial land ownership problem in Laikipia, there should be government-facilitated forums in which all stakeholders including but not limited to judicial officers, all plaintiffs, all defendants discuss all land disputes in Laikipia County with resolutions made. The Truth Justice and Reconciliation Commission Report would be instrumental in establishing historical land issues in Laikipia County and how to resolve them. Long standing land ownership issues were reflected in *Richard K. Bunei & 8 others t/a Geo-Estate Development Services v Lorien Ranching Company Limited & 799 others (being sued on behalf of themselves and on behalf of alleged 795 Members) [2017] eKLR* and *Civil Application 7 of 2019 Richard Koskei Bunei & 8 others v Lorien Ranching Company & 799 others [2019] eKLR* that has drag courts for 50 years now.

Additionally, both Laikipia County Government and Government of Kenya should review its food policies and frameworks to cushion Laikipia farmers from the adverse impact of low income, large family size, and old age of farmers as they work to boost food security. Perhaps affordable individual farmers insurance and cash crops insurance would work better to support Laikipia farmers. Both Laikipia County Government and Government of Kenya should collaborate and develop structured

farmers financing, training, provision of affordable farm inputs, machinery services, and extension services boost food production for food security.

Lastly, all the food and agricultural policies and frameworks that need to be in place to support food security in Laikipia County and in Kenya are already established according to this study respondents. Both Laikipia County Government and Government of Kenya should develop models and mechanisms of enforcing all food policies and frameworks in the country so that farmers and Kenyans at large realize the benefits and effectiveness of such food frameworks.

5.5 Suggestions for Further Study

This study focused to investigate the impact of the legal and policy framework on food security in Laikipia County. However, the unit of analysis was only one, Laikipia County. This study suggests the same research undertaken in other counties in Kenya to determine the trends, reliability, validity, and accuracy in the field of food security.

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APPENDICES

APPENDIX I: INTRODUCTORY LETTER

Dear Sir/ Madam,

RE: DATA COLLECTION

I am a Masters student at the University of Nairobi, conducting a study in partial fulfilment of requirement of the awards of a degree in Master of Arts in Environmental Law Titled: *“The Impact of Legal And Policy Framework on Food Sustainability In Kenya: A Case Study of Laikipia County”*.

I would highly appreciate if you could kindly participate in the interview to assist me collect data. Your information alongside others will help me in my research and will be used strictly for academic purposes. It will also be treated as confidential; therefore, do not write your name on the questionnaire.

Your assistance will highly be appreciated

Yours truly,

Researcher: Sheila Mwikali Mbiti (Z51/76062/2014)

Supervisor: Dr Collins Odote

Co-Supervisor: Dr. Nicholas Orago

APPENDIX II: THE KEY INTERVIEW GUIDE FOR LAIKIPIA FARMERS

1. Please list types of crops you grow in small or large quantities as a farmer.
2. Briefly explain how harvest you get from such crops sustains you and your family until the next harvesting season.
3. Briefly explain how your income level affects your farming practices and food for your family.
4. Briefly explain how your family size affects your farming practices and food for your family.
5. Briefly explain how your age and your farming practices and food for your family.
6. Briefly explain how your level of education and training affects your farming practices and food for your family.
7. Briefly explain how your marital or single parenthood affects your farming practices and food for your family.
8. Briefly describe the agricultural policies you are aware of and apply in your farming practices as a farmer.
9. Briefly explain the challenges you experience as a farmer in using or adopting such agricultural policies.
10. What roles your county government perform in agriculture and how have you benefited from them as a farmer?
11. Briefly explain how national or county governments' budget allocations affect you as a farmer and financial gaps that needs to be addressed.

Thank you for your participation in this study.

**APPENDIX III: THE KEY INFORMANT INTERVIEW GUIDE FOR
LAIKIPIA COUNTY GOVERNMENT OFFICIALS**

1. Please list types of crops grown in small and large scales in Laikipia County.
2. Briefly explain how crop growing pattern of Laikipia farmers influence food security in the county.
3. Briefly explain the level of food security in educated and uneducated households in Laikipia County and how level of education influence their agricultural practices.
4. Briefly explain the level of food security in poor and affluent households in Laikipia County and how their economic stability influences their agricultural practices.
5. Briefly explain the level of food security in married and single parent headed households in Laikipia County and how their social status influences their agricultural practices.
6. Briefly explain how age of the household heads influence their level of food security and agricultural practices.
7. Briefly explain how size of household in Laikipia County influences their level of food security and agricultural practices.
8. Briefly explain how effective and ineffective National Food and Nutrition Security Policy Implementation Framework (2017-2022) has supported Laikipia County food and agricultural agenda.

9. Briefly explain how effective and ineffective County Government of Laikipia Second County Integrated Development Plan (2018-2022) has supported Laikipia County food and agricultural agenda.
10. Briefly explain how effective and ineffective County Government of Laikipia last three consecutive financial year budget allocations on agriculture has influenced food security in the county.
11. Please list other food security laws or frameworks Laikipia County use and/or adopt in its agricultural and food security agenda and how effective they are.
12. Briefly explain as a county challenges you experience in implementation of National Food and Nutrition Security Policy Implementation Framework (2017-2022) and the solutions you propose.
13. Briefly explain as a county challenges you experience in implementation of County Government of Laikipia Second County Integrated Development Plan (2018-2022) and the solutions you propose.
14. Briefly explain as a county challenges you experience in implementation of county yearly agriculture budget allocations and the solutions you propose.
15. Briefly explain as a county other food security laws or frameworks you are implementing, the challenges and the solutions you propose.
16. What roles, services or functions you have been discharging as a county to support food security in the county?

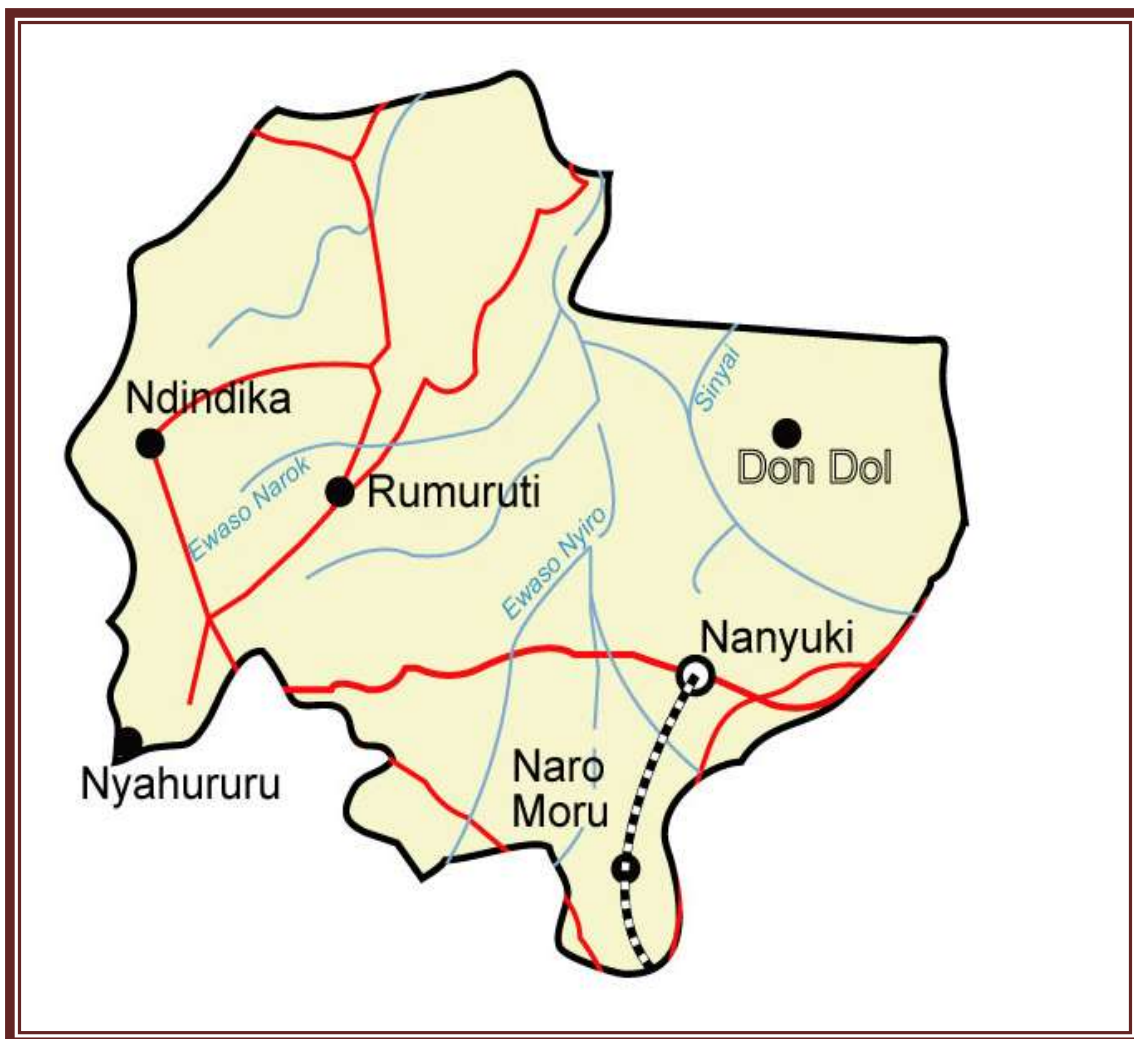
Thank you for your participation in this study.

**APPENDIX IV: THE INTERVIEW GUIDE FOR MINISTRY OF
AGRICULTURE EXPERTS**

1. As food security expert, do you think types of crops grown and crop growing pattern in Laikipia can enable the county become food secure? Briefly explain.
2. As agricultural expert, how are family size, family type and head of household age, level of income, and level of education likely to influence family food security?
3. Briefly comment on viability or effectiveness of National Food and Nutrition Security Policy Implementation Framework (2017-2022) in enabling counties become food secure.
4. Briefly comment on viability or effectiveness of County Government of Laikipia Second County Integrated Development Plan (2018-2022) in enabling the county become food secure.
5. From expert observation, is Laikipia County Government on track in its constitutional agriculture delegated roles?
6. Please comment on counties mode and pace of implementation of food security frameworks or policies and what should be addressed.
7. Please comment on adequacy of national and counties agricultural budget allocations and what needs to be addressed.

Thank you for your participation in this study.

APPENDIX V: LAIKIPIA COUNTY MAP



Source: Google (2020)