



**FACULTY OF NATURAL RESOURCES AND  
ENVIRONMENTAL SCIENCES  
DEPARTMENT OF NATURAL RESOURCE ECONOMICS**

**CLIMATE RESILIENT PLANNING AND MANAGEMENT FOR LUWERO  
DISTRICT LOCAL GOVERNMENT, UGANDA**

**By**

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## ABSTRACT

Whereas there is undisputed evidence globally that the world is experiencing climate change as most climate models predict, the use of high resolution in downscaling and predicting climate parameters for lower administrative units is still a challenge. This study was conducted in Kamira S/C Luwero district to analyse climate risks and assess the current and future vulnerabilities for agriculture sector, investigate the effectiveness of the current adaptation options towards promoting community resilience to climate change, and analyse the possible future sector specific climate change adaptation interventions at community level.

The study drew on both primary and secondary data. Climate data was sourced from UNMA and the ICPAC website. The survey data was collected using questionnaires distributed to 100 randomly selected livestock and crop farmers in the area. Data management was done using Ms Excel and data analysis was done using STATA MP 14 used to generate descriptive statistics.

The study findings show that the climate trends of Kamira have been varying over the past years, presently and also in the future projections in rainfall and temperature. The farmers recognized that temperatures had increased over time and predicted future increases. This was closely similar to the future climate variations in terms of temperature under the IPCCs high emissions scenario RCP 8.5. The observed climate impacts on crops included crop failure, crop yield decline, and incidences of new pests. Declining pastures and water shortages were identified by livestock farmers. Both crop and livestock farmers practiced some adaptation measures to cope with the changing climate such as mixed cropping, soil conservation and change of planting dates. Livestock farmers made water investments and migration of animals to other areas with favourable conditions. In conclusion, climate variations have a great influence on earth life.

It was recommended that the government and civil society organizations increase their efforts in community sensitization on climate change and its impacts to agriculture. The local adaptation measures must be emphasized and promoted to build a climate resilient community. The policy makers should not ignore the local people's knowledge and perceptions on climate change while making community level plans for adaptation action.

**Key words:** *Climate change vulnerability, Adaptation options, rainfall & temperature*

## DECLARATION

I, **SEMAMBO Muhammad** do hereby declare that this research work has been through my own efforts and never has it been submitted to any Institution of higher learning for any award.

.....

SEMAMBO Muhammad

Date: .....

**APPROVAL**

This is to confirm that this Dissertation has been submitted with our approval as research supervisors.

**Twaibu SEMWOGERERE (PhD)**

Signature.....

Date.....

**Mr. George TAAKO EDEMA**

Signature.....

Date.....

## **DEDICATION**

I dedicate this work to Central and Local Government Institutions, Development Partners, National and Local Non-Governmental Organizations in Production, Environment and Natural Resources Sectors in climate change initiatives for consideration toward promoting community climate resilient planning at local government for livelihood improvement and sustainable development.

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## TABLE OF CONTENTS

ABSTRACT .....	i
DECLARATION .....	ii
APPROVAL.....	iii
DEDICATION .....	iv
ACKNOWLEDGMENTS .....	v
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
LIST OF ACRONYMS .....	xi
CHAPTER ONE: INTRODUCTION .....	1
1.0 Introduction .....	1
1.1 Background .....	1
1.2 Problem Statement .....	3
1.3 Justification of the Study.....	4
1.4 Objectives of the Study .....	5
1.4.1 Aim of the study .....	5
1.4.2 Specific Objectives.....	5
1.5 Research Questions .....	5
1.6 Scope of the Study .....	6
1.7 Conceptual framework .....	6
CHAPTER TWO: LITERATURE REVIEW .....	7
2.0 Introduction .....	7
2.1 Global perspectives and trends about climate variability and change .....	7
2.2 Common Approaches to Vulnerability Assessment .....	14
CHAPTER THREE: METHODOLOGY .....	16
3.0 Introduction .....	16
3.1 Description of the Study Area.....	16
3.1.1 Population .....	16
3.1.2 Ethnicity .....	17
3.1.3 Soils.....	17
3.1.4 Vegetation .....	17
3.1.5 Economic Activity .....	17
3.1.6 Climate .....	17
3.2 Research design.....	18
3.4 Sample size.....	19
3.5 Data collection .....	19
3.5.1 Sources of data .....	19

3.5.2 Data collection tools.....	19
3.5.3 Data collection methods.....	20
3.6 Ethical considerations .....	21
3.7 Data management and analysis .....	21
CHAPTER FOUR: RESULTS AND DISCUSSIONS .....	22
4.0 Introduction.....	22
4.1 Climate risk analysis .....	22
4.1.1 Annual and Seasonal (MAM and SON) Rainfall Trends for Kamira Sub-County 1981-2018 .....	23
4.1.2 Annual and Seasonal (MAM and SON) Rainfall Projection for Kamira Sub-County 2006 -2040.....	26
4.1.3 Annual and Seasonal (MAM and SON) Temperature Trends for Kamira S/C 1981-2018 .....	28
4.1.4 Annual and Seasonal (MAM and SON) Average Temperature Projection for Kamira S/C 2006-2040 .....	31
4.2 Respondents perspective on Climate Change .....	34
4.3 Evidences of climate change according to the community.....	35
4.4 Respondents perspective on climate change being caused by human activities.....	36
4.5 Respondents perspective on climate change being caused by natural processes.....	36
4.6 Respondents perspective on climate change in the future .....	36
4.7 Respondents perspective on scientists’ predictions on impacts of climate change ..	37
4.8 Respondents perspective on Kamira responding to climate change if empowered ..	37
4.9 Respondents perspective on whether climate change has ecological impacts.....	37
4.10 Climate change impacts and vulnerability to crop farming .....	37
4.10.1 Access to weather information by crop farmers .....	37
4.10.2 Frequency of forecasted information .....	38
4.10.3 Use of the information about when to plant crops .....	38
4.10.4 Farmers recall of weather in the 2017/2018 crop season.....	39
4.10.5 Characteristic of rains 2017/2018 crop season.....	39
4.11 Sensitivity of crops to climate variability .....	39
4.12 Observed impacts of climate variability on crop production .....	41
4.12.1 Crop failure and yield decline .....	41
4.12.2 Decline in crop quality .....	42
4.12.3 Pests .....	42
4.12.4 Reduced soil moisture .....	42
4.12.5 Change of planting seasons.....	42
4.12.6 Changing of crop types .....	43
4.13 Climate change impact and vulnerability to livestock .....	43



4.13.1 Stock size .....	43
4.13.2 Period of Cattle keeping.....	43
4.14 Specific climate change impacts to livestock identified .....	43
4.14.1 Declining pastures .....	44
4.14.2 Increased conflicts for grass and water .....	44
4.14.3 Decline in product prices .....	45
4.14.4 Reduced cash flows and declined milk production.....	45
4.14.5 Increased labour costs .....	45
4.14.6 Changes in abundance of vectors and shifts in disease patterns .....	45
4.15 Investigation of effectiveness of current adaptation options for promoting climate resilience .....	46
4.15.1 Crop adaptation strategies identified and their effectiveness.....	46
4.15.2 Effectiveness of some of the adaptation practices .....	47
4.15.3 Livestock adaptation strategies identified and their effectiveness.....	49
4.16 Analysis of possible future sector specific climate change adaptation interventions at community level.....	53
<b>CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>59</b>
5.1 Conclusions.....	59
5.2 Recommendations .....	60
5.2.1 Recommendations to crop and livestock farmers .....	60
5.2.2 Recommendations to civil societies and government .....	60
5.2.3 Recommendations to policy makers .....	61
5.2.4 Areas of future research .....	61
<b>REFERENCES.....</b>	<b>62</b>
<b>APPENDICES .....</b>	<b>66</b>
Appendix 1: Definition of terms .....	66
Appendix 2: Questionnaire .....	67
Appendix 3: KII Checklist .....	76

## LIST OF TABLES

<b>Table 3 - 1:</b> Luweero district annual temperature and rainfall.....	18
<b>Table 4 - 1:</b> Characteristics of rains in 2017/2018 crop season.....	39
<b>Table 4 - 2:</b> Observed climate change impacts on crop production in Kamira Sub County .....	41
<b>Table 4 - 3:</b> Specific climate change impact to livestock farming identified.....	44
<b>Table 4 - 4:</b> Different crop adaptation strategies identified .....	46
<b>Table 4 - 5:</b> Livestock adaptation strategies identified .....	50
<b>Table 4 - 6:</b> Analysis of possible future climate change crop adaptation interventions at community level.....	53
<b>Table 4 - 7:</b> Analysis of possible future climate change livestock adaptation interventions at community level.....	56

## LIST OF FIGURES

<b>Figure 1 - 1:</b> Conceptual framework (Own processing) .....	6
<b>Figure 2 - 1:</b> Mid-21 <sup>st</sup> century rainfall projection for Uganda (March 2036 - May 2065) .....	9
<b>Figure 2 - 2:</b> Projected change of annual temperature and rain fall over Uganda .....	10
<b>Figure 3 - 1:</b> Map showing the study area (Own processing) .....	16
<b>Figure 4 - 1:</b> Annual rainfall trends for Kamira sub county (1981 - 2017) .....	23
<b>Figure 4 - 2:</b> MAM rainfall trends for Kamira sub-county (1981-2017).....	24
<b>Figure 4 - 3:</b> SON rainfall trends for Kamira sub-county (1981-2017).....	25
<b>Figure 4 - 4:</b> Annual rainfall projection for Kamira sub-county 2006-2040 based on IPCC's representative concentration pathway (RCP8.5).....	26
<b>Figure 4 - 5:</b> MAM and SON rainfall projection for Kamira sub-county 2006-2040 based on IPCC's RCP8.5 .....	27
<b>Figure 4 - 6:</b> Annual average temperature for Kamira sub-county (1981-2017).....	28
<b>Figure 4 - 7:</b> MAM average temperature trends for Kamira sub-county (1981-2017).....	29
<b>Figure 4 - 8:</b> SON average temperature trends for Kamira sub-county (1981-2017).....	30
<b>Figure 4 - 9:</b> Annual average temperature forecast for Kamira sub-county (2006-2040) based on IPCC's RCP8.5 .....	31
<b>Figure 4 - 10:</b> MAM and SON average temperature projection for Kamira sub-county (2006-2040) based on IPCC's RCP8.5 .....	33
<b>Figure 4 - 11:</b> Climate variability/ change events in Kamira S/C.....	35
<b>Figure 4 - 12:</b> Frequency of information access by farmers. ....	38

## LIST OF ACRONYMS

AWP	Annual Work Plans
CAF	Cancun Adaptation Framework
CCA	Climate Change Adaptation
DDP	District Development Plans
FGD	Focus Group Discussion
GIS	Geographical Information System
GHG	Greenhouse Gases
ICPAC	IGAD Climate Prediction and Application Centre
IGAD	Intergovernmental Authority on Development
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
NAP	National Adaptation Plans
NAPA	National Adaptation Programme of Action
NCCP	National Climate Change Policy
NCCP-IS	National Climate Change Policy-Implementation Strategy
SDGs	Sustainable Development Goals
S/C	Sub County
SNCCI	Standard National Climate Change Indicators
SPCR	Strategic Program for Climate Resilience
UNFCCC	United Nations Framework Convention on Climate Change (UNFCCC)
WMO	World Meteorological Organization
MAM	March April May
SON	September October November
°C	degrees centigrade
mm	millimetre
RCP	Representative Concentration Pathway

# CHAPTER ONE: INTRODUCTION

## 1.0 Introduction

In this chapter, I discuss the background to the study, the major and specific objectives, research questions, statement of the problem, justification and significance of the study and the conceptual framework.

## 1.1 Background

According to the World Meteorological Organization (WMO), climate change refers to a change in average weather conditions, or time variation of weather within the context of longer-term average conditions usually 30 years or longer term. Climate change considers statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically decades or longer). The changes may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere and in land use (IPCC, 2014). The United Nation Framework Convention on Climate Change (UNFCCC) in its Article 1, defines "climate change" as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods".

Intergovernmental Panel on Climate Change (IPCC) defines resilience as the “capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2014).

The current pace of changes in the global climate mainly due to human inducements calls for assessing climate change impacts, adaptation planning, implementation of adaptation technologies and monitoring for a sustainable production and livelihoods development at community levels (Lavell, et al., 2012). Community members must be empowered to be climate resilient; withstanding and adapting to a changing climate. This could be done through sensitization, implementation of adaptation measures and adaptation financing.

Projections by the IPCC indicate that if greenhouse gas emissions continue to rise at their current rate, the world will be faced with a catastrophic future in the form of sea-level rise, shifts in growing seasons, biodiversity loss, as well as increased frequency and intensity of

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