

**ASSESSING THE ROLE OF INDIGENOUS KNOWLEDGE AND PRACTICES FOR
ADAPTATION TO EFFECTS OF RAINFALL VARIABILITY IN BUDUDA**

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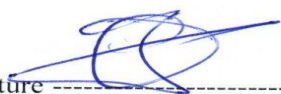
**A DISSERTATION SUBMITTED TO THE FACULTY OF NATURAL RESOURCES
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MASTER OF SCIENCE IN CLIMATE CHANGE AND DISASTER MANAGEMENT OF
BUSITEMA UNIVERSITY**

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DECLARATION

I, **Martin Ojok** do hereby declare that this research report has been developed through my efforts and has not been submitted to Busitema University or any other institution of higher learning for the award of a Master's degree or any other qualification.

Signature -----



30/05/2025

APPROVAL

This is to confirm that this dissertation is original and has been through the efforts of **Martin Ojok** as part of his fulfillment for the award of the Master's Degree in Climate Change and Disaster Management of Busitema University, Uganda.

Signature.....



Date.....



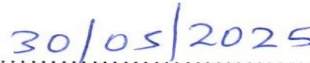
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DEDICATION

I dedicate my dissertation work to my family and many friends. A special feeling of gratitude to my loving parents, Augustine Oyena and Janet Oyena whose words of encouragement and push for tenacity ring in my ears. My siblings have never left my side and are very special.

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LIST OF ACRONYMS AND ABBREVIATIONS

C	Carbon
CC	Climate Change
CH ₄	Methane
CO ₂	Carbon dioxide
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GHG	Greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
Km	Kilometre
LDCs	Least Developed Countries
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
mm	millimeter
MWE	Ministry of Water and Environment
NAPA	National Adaptation Programme of Action
NCCP	National Climate Change Policy
NEMA	National Environment Management Authority
NGOs	Non-Governmental Organizations
UBOS	Uganda Bureau of Statistics
UNMA	Uganda National Meteorological Authority
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollars
IK	Indigenous Knowledge
NDC	Nationally Determined Contribution
EWS	Early Warning System

ABSTRACT

This study assessed rainfall variability in Bukigai Sub County Bududa district, a factor behind rampant flooding and landslides and the role of indigenous knowledge and practices as an adaptation strategy in response to the variability. The study adopted a mixed research approach where quantitative data used included annual and seasonal rainfall from 1991-2021 sourced from UNMA. Qualitative data was collected by administering questionnaires to 100 randomly selected household members of Bukigai Sub County in the parishes of Bunamubi, Bumatanda and Bumangoye, as well as key informant interviews and observations by the researcher. Time series, regression and trend analysis were used to investigate the anomalies in annual and seasonal rainfall. Survey data was analyzed using descriptive statistics, correlation analysis and regression to determine the dominant Indigenous adaptation practices and the role it plays in climate variability adaptation. In addition, Probit tests were run to find the casual relationship between the use of IK as an adaptation strategy and selected socio-economic factors. Results revealed significant trends of seasonal and annual rainfall variability. 76% of the respondents believed that there was climate variability and 24% did not believe. 99% of the respondents further admitted practicing one or more Indigenous adaptation strategies to cope with the changing climate. The strategies practiced were food stocking (91%), crop diversifications (89%) and grain preservation (84%). Probit tests revealed that none of the tested socio-economic factors (age, income and education level) was statistically significant in influencing the use of IK for adaptation at 5% significance level. The probit test also gave a pseudo R^2 of 6%, meaning that the socioeconomic factors tested could only explain 6% of the variations in the respondents' engagement in use of IK.

In conclusion, the findings of this study underscored the importance of Indigenous Knowledge and practices in facilitating adaptation to climate variability in Uganda. While there is a widespread recognition of climate change impacts and a high level of engagement in indigenous knowledge and adaptation practices, socio-economic factors alone did not significantly influence the adoption of Indigenous Knowledge. Future research should explore additional contextual factors and socio-cultural dynamics that may shape adaptive behavior, in order to inform more effective and targeted interventions for building climate resilience in vulnerable communities.

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