

# Floods Management and Socio-Economic Development of Kambuga Sub County in Kanungu District, South Western Uganda

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**Abstract:** *The study assessed the impact of Floods management on the socio-economic development with reference to Kambuga Sub County in Kanungu district, South western Uganda. It was guided by three objectives; namely: To investigate the causes of floods in Kambuga sub county in Kanungu district, to examine how floods are managed in Kambuga Sub County and to examine the impact of floods management to the socio-economic development of Kambuga Sub County in Kanungu district. The study used data collected using the questionnaire and interviews which were argued by documentary review and during data collection, simple random and purposive sampling techniques were used. mixed approaches were used to analyse the data of 80 respondents that were selected from the sub county under the study. The study revealed that floods were brought by unsustainable human activities like deforestation, climatological factors and physical factors, the study also revealed that floods management had had a significant impact on the socio-economic development of Kambuga Sub County in terms of high crop productivity, food security, infrastructural development, ensuring easy access to social services like schools, churches, safe water, and hospitals among others. The study also revealed that floods could be managed by afforestation, early warning, terracing, proper drainage systems, early preparation, de-silting, conservation and restoration of wetlands and construction of contours. From the findings from the study, the study concluded that floods management had a remarkable impact on the socio-economic development of Kambuga Sub County. This is because respondents revealed that if floods management takes place, there can be food security, infrastructure development, increased incomes and high crop productivity. The researcher recommended for disaster preparedness through mass sensitization over the radios, TVs, newspapers, churches among others. It also recommended for evacuation of people settling in vulnerable areas such as people settling in floods plains, river basins and hilly areas to settle in other free and safe areas, recovery programmes were recommended by the study. This will help in the flood mitigation, recovery and preparedness that will in turn result to the socio-economic development of Kambuga Sub County. 25(31.2%) of the respondents who comprised of both males and females, the highest percentage agreed that poverty was the main cause of floods occurrence in Kambuga Subcounty, 25(31.2%) were of the view that floods were brought about by climatological forces, 20(25%) of the respondents were of the view that floods were brought about by unsustainable human activities such as deforestation, poor farming methods, diversion of channels among others, 05(6.2%) the least stated that floods were brought about by the nature of the land and poor drainage systems. Using the study findings, respondents cited different strategies to manage floods in Kambuga Sub County. The majority of the respondents corresponding to 30(37.5%) cited afforestation as a leading strategy to manage floods. This is followed by rain water harvesting systems as cited by 20 (25%) of the respondents, 10(12.5%) of respondents cited those floods can be managed by early warning, terracing and contours in Kambuga Sub County.*

**Keywords:** Floods Management, Socio-Economic Development

## SECTION ONE: INTRODUCTION

### Introduction

The study was about floods management and the socio-economic development of Kambuga Sub County in Kanungu District in Uganda. The overall intention of the study was to analyze the linkage between floods management and the socio-economic development in the area of study, to identify the causes of floods in the same area of study and to examine how floods are managed in Kambuga Sub County. This chapter presented the background to the study, statement of the problem, purpose of the study, objectives of the study, Scope of the study, Significance of the study as well as a conceptual framework. It highlighted the motivation of the researcher to carry out this study and stated the importance of the study towards the readers as well as the research setting.

### Background to the Study

Kambuga Sub County has been hit by floods over several years. These floods have caused miserly and suffering to the people, death, destruction of roads, bridges, churches, crops, animals and have increased government expenditure. Floods management in Kambuga Sub County that has been observed by government stakeholders, civil society organizations, politicians and the natives through public awareness campaigns, relocation, encouraging sustainable environmental management, afforestation, de-silting, rain water harvesting systems and farming has resulted to high crop productivity, increased soil fertility, increased income, infrastructural

development and improved standards of living among others thus resulting to socio-economic development of the same area under study.

### **Problem Statement**

There have been frequent floods in Kambuga Sub County in Kanungu district over the past years and these persistent floods have posed a threat to the Sub County under study. There has been afforestation and construction of houses using strong building materials as floods management strategies but the situation has almost remained constant. These floods have caused the death of people, destruction of crops, infrastructure and property, injury and increased mortality, affected health, education as well as the environment. Once floods are carefully managed, we can have improved standards of living, access to education, high crop productivity and infrastructural development among others. The area has suffered 3 consecutive times and these times have been considered by the communities as the worst because of the rainfall received and the level of impact creating an alarm of researching about the impact of floods management on the socio-economic development.

### **Objectives of the Study**

#### **General Objective.**

To examine the impact of floods management to the Socio-economic development of Kambuga Sub County in Kanungu district.

#### **Specific Objectives.**

- (i) To investigate the causes of floods in Kambuga Sub County in Kanungu district.
- (ii) To examine how floods are managed in Kambuga Sub County in Kanungu district.
- (iii) To examine the impact floods management to the socio-economic development of Kambuga sub county in Kanungu district

## **SECTION TWO: RESEARCH METHODOLOGY**

### **Study Design**

The study employed a case study design that helped the researcher in gathering information where little knowledge was known. The researcher employed both qualitative and quantitative methods enabled him in drawing valid and dependable conclusion and recommendations about floods management and the socio-economic development of Kambuga Sub County in Kanungu district.

### **Study Area**

The study conducted in Kambuga Sub-County in Kanungu District. Kambuga Sub-County has the following parishes-Bugongi, Kiringa, Nyarugunda and Nyarutojo. Each parish contains 200 households but Nyarutojo parish was selected because it is where floods had frequently occurred

### **Study Population**

The population included all residents approximated to be about 100 residents of the village in Nyarutojo parish in which floods had occurred in Kambuga Sub County. Kambuga Sub County has approximately 3200 residents. It was however difficult to find and later determine who to consider with a lot of experience about floods management regarding the socio- economic development of Kambuga Sub County. For this reason, the researcher considered any person who had settled in Kambuga Sub County in Nyarutojo parish for the last decade when the floods occurred. These residents were interviewed to get their views and opinions about floods management of Kambuga Sub County.

### **Sample size and Sampling Procedures**

According to Taro Yamane's calculating method (1973), the formula has been set as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:

$n$ =means of sample size

$N$ =the population size

And  $e$ = the error of sampling or the confidence interval at 95% therefore  $e=0.005$ %.it represents also the level of precision.

Using the same formula  $n=N/1+Ne^2$

$$n=100/1+100(0.05)^2$$

$$n=100/1+100(0.0025)$$

$$n=100/1+0.25$$

$$n=100/1.25$$

$$n=80$$

The Yamane's formula gave me a representative of 80 respondents.

The researcher sampled 80 people that included (01) Sub County chief, (01) parish chief, (01) Giso, (77) residents (50 females and 27 males). It was carried out using the random sampling method as it was seen to be cheap. Purposive sampling was used to select specific respondents like the sub county chief, Giso and the parish Chief who were believed to be having knowledge about the problem under Study.

Names were written on the pieces of paper and were carefully folded and mixed in a container by the researcher for that parish where the floods had currently occurred; the researcher picked out pieces using the lottery method. A sample of respondents was selected randomly and was requested to get involved in the study.

**Table 1: Sample Size and Composition**

Category of Respondents	Study Population	Sample	Sampling strategy
Sub county chief	1	01	Purposive sampling
Parish chief	1	01	Purposive sampling
GISO	1	01	Purposive sampling
Residents (Females)	50	50	Random sampling
Residents (Males)	47	27	Random Sampling
<b>Total</b>	<b>100</b>	<b>80</b>	

### Sources of Data

#### Primary data source

Data was gathered directly from respondents about the problem under study. This source of data was preferred because it provided original information that would lead to meaningful conclusions.

#### Secondary data source

The researcher supplemented primary data with secondary data obtained from other writers and scholars inform of textbooks, journals, reports and newspapers.

### Research Methods.

#### Interviews:

Consisted of a cover note containing of the statement of the study and assurance of confidential treatment of the information that respondents gave. Their consent was thought before influencing them. And a schedule of the sample of the interview was shown.

#### Questionnaire:

Is a written list of questions that are answered by people so that information can be collected from the respondents. The questions are arranged in chronological order from structured to non- structured. These questions were given to respondents who knew how to read and write. These questions easily provided answers to the researcher and were easy to interpret by the respondents.

#### Observation:

This is the act of watching things carefully for a time. The researcher critically observed the respondents on certain aspects like the dressing code, feeding and tried to interpret them accordingly.

#### Data Processing and Analysis.

Data processing and analysis was done by the researcher himself after all the respondents had answered the questionnaire and been interviewed. Editing was thoroughly done to ensure that answers were accurate and consistent.

The researcher tried to deduce from the answers given to see whether applicable Questions were uniformly inconsistent that was noted on a different paper and data analysis was based on describing in detail the views, opinions and beliefs of respondents' interview.

The qualitative data from interviews and secondary documents was analysed using content analysis and logical analysis techniques.

Quantitative data analysis was done by Microsoft word on personal computer. The technique for quantitative data analysis was the frequency distribution and percentages which determined the proportion of respondents choosing the various responses. This was done for each group of items relating to research questions, tables, charts and graphs ensured easy understanding of the analyses.

## SECTION THREE: PRESENTATION OF FINDINGS

### Findings on the causes of floods

Table 4.1 showing the various causes of floods in Kambuga Sub County

Response	Frequency	Percentage
Human activities	20	25
Climatological forces	25	31.2
Poverty	25	31.2
Nature of the landscape	05	6.2
Poor drainage systems	05	6.2
<b>Total</b>	<b>80</b>	<b>100</b>

#### Source: Field data 2017

The table above reveals that 25(31.2%), more respondents observed that because most people were poor they had no effort to control floods and could settle in vulnerable areas such as flood plains claiming they were more fertile and according to this study, this was in line with Hanson, etal(2007).25(31.2%) were of the view that floods were brought about by climatological forces and they gave an example of global warming that has always led to prolonged rainfall this was in line with Doreen(2003),20(25%) were of the view that floods were brought about by unsustainable human activities such as deforestation,overgrazing,poor tillage, diversion of channels among others that was earlier stated by Nott(2006),05(6.2%) the least percentage stated that floods were brought about by the nature of the land and poor drainage systems.

### Findings on Floods management in Kambuga Sub County

**Table 4.2 shows floods management strategies in Kambuga Sub County**

Strategy	Frequency	Percentage
Afforestation	30	37.5
Early warning	10	12.5
Rain water harvesting systems	20	25
Conservation and restoration of wetlands	10	12.5
Contours	10	12.5
<b>TOTAL</b>	<b>80</b>	<b>100</b>

**Source: Field research, 2017**

Respondents cited different strategies to manage floods in Kambuga Sub County. Respondents corresponding to 30(37.5%) cited afforestation as a leading strategy to manage floods this observation was in line with Marrero (1980). This was followed by rain water harvesting systems as cited by 20(25%) of the respondents, 10(12.5%) of respondents cited that flood can be managed by early warning that was related to information, preparedness and non-structural mitigation measures. This finding was in line with Lara et al (2010), conservation and restoration of wetlands and contours in Kambuga Sub County. Wetlands absorb and filter water that could accumulate and cause flooding.

### **Findings on floods management and the socio-economic development of Kambuga Sub County**

**Table 4.3 Floods management and the socio-economic development of Kambuga Sub County**

Impact	No. of respondents	Percentage
Urbanization	05	6.25
Poverty	10	12.5
Loss of lives	50	62.5
Improvement in service delivery	05	6.25
Loss of property	05	6.25
Government expenditure	05	6.25
<b>Total</b>	<b>80</b>	<b>100</b>

**Source: Field data 2017**

The table above reveals that 05(6.25%) of the respondents were of the view that floods management could lead to urbanization, improvement in service delivery, reduction on government expenditure as earlier stated by Ninno et al(2003), lead to the loss of property and loss of lives one of the respondents who was interviewed revealed that though floods had had an economic loss but had led to enough water supply required for house building, irrigation as well as stabilizing of ecosystems in flood plains. 10(12.5%) of the respondents revealed that floods management could reduce on poverty. In addition, it was observed that floods management could affect the socio-economic development both positively and negatively. 50(62.5%) of the respondents revealed that floods occurrence had led to the loss of the lives and this finding was in line with the early observation stated by Parker(2000), many people especially women and children were vulnerable to floods than men, this not being enough with only people, animals like cows, goats, sheep and chicken too were losing their lives. 05(6.25%) of the respondents stated that floods management had contributed to the improvement in service delivery. More 05(6.25%) suggested that floods management was associated to loss of infrastructure such as roads and bridges as well as increasing government expenditure. This finding is in relation to Ninno (2003).

### **Summary of findings**

25(31.2%) of the respondents who comprised of both males and females, the highest percentage agreed that poverty was the great cause floods occurrence in Kambuga Subcounty, 25(31.2%) were of the view that floods were brought about by climatological forces, 20(25%) of the respondents were of the view that floods were brought about by anthropogenic activities such as deforestation, poor farming methods, diversion of channels among others, 05(6.2%) the least stated that floods were brought about by the topography of the land and poor drainage systems.

Using the study findings, respondents cited different strategies to manage floods in Kambuga Sub County. Most respondents corresponding to 30(37.5%) cited afforestation as a leading strategy to manage floods. This is followed by rain water harvesting systems as cited by 20 (25%) of the respondents, 10(12.5%) of respondents cited that flood can be managed by early warning, terracing and contours in Kambuga Sub County.

## SECTION FOUR: CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

It is evident that most of the floods in Kambuga Subcounty are human related though some are nature based. These floods have threatened the lives of people, destroyed a lot of property and animals, increased government expenditure and destabilized the social styles of the people.

Floods management has been a global concern that has attracted many organisations to resettle the destitute, provided food and clothing items to the displaced.

The outbreak of water borne diseases was seen to be the cause of floods in the same area and River Mitano being the only River in the area has left many people prone to these diseases.

Most households are coping up with the severity of these floods but still they are still vulnerable.

### Recommendations

- Farmers should adopt sustainable land management practices such as Fanya Juu and planting of grass bunds in their agricultural fields
- The masses should be sensitized on the early warning systems to get prepared for floods
- There is a need to extend Agricultural Advisory services to people in Kambuga Subcounty.
- To extend more health facilities to areas prone to floods

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