INVESTIGATING FLOODING IMPACTS ON CHILDRENS EDUCATION IN CHIKWAWA DISTRICT, SOUTHERN MALAWI.

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Date

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DECLARATION

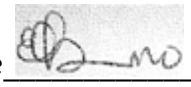
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ABSTRACT

The Sendai Framework for Disaster Risk Reduction, 2015–30, calls for countries to enhance disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation, and reconstruction as a pathway to disaster risk reduction. The present study was undertaken to assess the impacts of flooding on children's education in chikwawa district, southern Malawi. The study focused to analyze household vulnerability that expose school children to risk of flooding and to quantify how stakeholder interventions address effects of floods on the state of children's education. During the survey, data was collected from total of 80 households and three (3) schools. The population was purposively selected as it deals only participants with detailed knowledge or direct experiences in relation to the impacts of floods on children's education within the community. A structured interview schedule (questionnaire) was used to collect data, while some qualitative data collection methods included key informant interviews (KII), focus group discussions and informal interviews. Key findings indicated that schools are washed and completely destroyed followed by long time of recovery and rehabilitation this implies that the total number of students who register and attend classes is lower this is associated with the years the area is heavily affected by floods. The result now provides evidence that in the year 2015 and 2019 the three schools had the lowest number of teachers due to severe floods. The paper speculate that this triggered the temporary relocation of teachers hence this affected the performance of the learners in national examination in the area. A further novel finding is that coping strategies are being employed by the households in order to deal with the flood situation, this include evacuation to upper land, receiving humanitarian support and food rationing and reducing number of meals per day. The paper concludes by arguing that floods cause heavy damage to school infrastructure making pupils to stay at home for longer periods until the schools are renovated. Future studies could fruitfully explore this issue further by assessing and mapping the flood evacuation centers as most schools are turned into refugee camps, and issues of child labor as children are subjected to work and support their parents instead of going to school during the flooding disasters.

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ACRONYMS/ABBREVIATIONS

DODMA: department of disaster management affairs

MUST: Malawi University of science and technology

T/A: Traditional Authority

NGO: Non- Governmental Organization

EWS: Early Warning Systems

UNDP: United Nations Development Programme

MoE: Ministry of Education

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1. CHAPTER 1: GENERAL INTRODUCTION

1.1 Background

The steady growth of disaster risk, including the increase of people and assets exposure, combined with the lessons learned from past disasters, indicates the need to further strengthen disaster preparedness for response, take action in anticipation of events, (*Sendai Framework for Disaster Risk Reduction 2015 - 2030 1*, 2015). This process will help to integrate disaster risk reduction in preparedness and ensure that capacities are in place for effective response and recovery at all levels. This field has gradually broadened as flood related deaths as well as associated economic losses have increased over the past century in Africa (Di et al., 2010). However, it is worth understanding that floods occur as a result of the overflow of an expanse of water that submerges land that is usually dry (O'Connor et al., 2004). Again, floods are as a result of a mass of water in a river or lake exceeding the capacity of the body. This closely follows the algorithm that some of the water flows outside the normal perimeter of the body. This phenomenon has been widely observed as most flooding happens during and after heavy rainfall when rivers overflow sometimes they may be caused as a result of an earthquake in a water body, landslide activity and due to dam failure (Coulibaly et al., 2015). Flooding may be only a few inches of water or it may completely immerse buildings and vegetation.

Floods are disastrous when they occur with high magnitude or occur in unexpected places or times. In such cases, the affected communities may be caught by surprise and lives and property may be lost. In Chikhwawa district, floods are events of annual occurrence (smith, 2019). It is important to know that the impact floods, has on a community are not only as a result of its intensity, but also some factors like human induced soil degradation, deforestation, urbanization, settlement patterns and poor urban drainage. Such features increase the risk that floods will cause damage and will magnify the impacts of flooding such as destruction of infrastructure, disruption and displacement of education for children, (Sheheli & Khan, 2018).

In March 2019, Malawi experienced one of the heaviest floods in the lower shire that was caused by cyclone idai, (*Malawi 2019 Floods Post Disaster Needs Assessment Report*, 2019). A rapid assessment done by United Nations development program 2019 found that 60 people were killed, 87000 people were nearly displaced and 87, 0000 persons were affected in Malawi. A large number of these people were displaced, crops were submerged and water schemes polluted. In addition, children were also subjected to the disruption of their education. For instance, school walls collapsed and water caused damages to school furniture and school documents and files, (*Malawi 2019 Floods Post Disaster Needs Assessment Report*, 2019).

Over the years, heavy floods in Malawi have had a negative impact on school children. In many communities, an increase in family poverty influenced by floods has led to more children working rather than attending school, (Mtembenuzeni & Kushe, 2018). A popular explanation is that the schools are found at long distances hence the children fail to reach the schools especially during the rainy season hence high dropout reading into high illiteracy levels. With this review, this research constitutes a relatively new area which has emerged as it investigates specifically the flooding impacts on children's education in Traditional Authority kasisi, chikhwawa district, southern Malawi.

1.2 Problem Statement

In recent years, extreme river flooding has occurred in many parts of southern Africa including the 2015/2019 floods in Malawi. One of the adverse impacts of flooding is on children's education, (*Malawi 2019 Floods Post Disaster Needs Assessment Report*, 2019). According to the human capital theory, education is seen as the basis for individual and social development. Education makes people to be more productive whether it is in their households or at the market place. Preventing flood hazards from turning into disasters with negative impacts on children's education is therefore a priority in countries like Malawi, where exposure to flooding is real and expected to increase in the future.

In Malawi, children living in Chikwawa district experience disruptions in their education due to flooding which causes displacements, damage to school infrastructure and school documents in flood prone areas. This is due to the occurrence of floods in chikwawa annually. Despite the fact that children's education is a major development issue and that children's rights to education need to be protected, not much has been done in Malawi to provide evidence on the impacts of floods on children's education. There is relatively lack of information on the damage floods impose on the education of children. The lack of scholarly attention to the impacts of flooding on children's education in the flood prone areas may have long term consequences for children and the communities on which they live in. this is so because communities may have little or no coping mechanisms at all in some cases. In particular no study, to our knowledge, has considered to investigate the impacts of flooding on children's education in chikwawa district. This study aims to contribute to academic literature on the impacts of floods on children's education in Malawi.

1.3 Main and Specific Objectives

This study aimed at investigating the flooding impacts on children's education in TA Kasisi, Chikwawa district. Other specific objectives include:

- To analyze household vulnerability that expose school children to risk of flooding.
- To investigate how stakeholder interventions address effects of floods on the state of children's education.

1.4 Research Questions

The study answered the following questions:

- What is the impact of floods on children's education?
- Why are households vulnerable to the risk of flooding?
- How do the interventions of stakeholders address the effects of floods on the state of children's education?

1.5 Significance of the study

Flood disasters according to many accounts are expected to increase due to climate change. One of the most serious effects of flooding at present and in future is on children's education. However, this can be avoided if households, communities and governments take timely action against floods.

Due to this, this thesis investigates flooding impacts on children's education in Chikwawa district, southern Malawi and it makes recommendations for strengthening household and community level resilience so that children's education is less vulnerable to flooding.

2. CHAPTER 2: LITERATURE REVIEW

A hazard is a situation that poses a potential threat to life, health, property or environment (UNISDR, 2009). A Hazard only becomes a disaster when it seriously disrupts the functioning of the community or a society and causes widespread human, social, economic and environmental losses that exceed the ability of the affected community to cope with their resources (UNISDR 2009). In chikwawa district, people suffer a lot of losses in human, capital and livelihoods due to flood disasters. The people that are displaced by the floods struggle a lot to make a living if aid is not provided to them quickly which is often the case. When floods occur both individuals and the community are affected because they cause losses to human lives, affect the health of the people, and cause damage to physical infrastructure, the environment and properties. Indirectly, floods can cause loss of economic and agricultural production, loss of livelihoods and decrease the social economic welfare (junkman et al., 2009).

It has been acknowledged that natural hazards like floods slow down and hinder the progress towards the achievement of the millennium development goals (UNESCO, 2000). Existing literature has identified the connection between hazards and educational outcomes in developing countries and has found negative impacts (Metzler, 2008). Flood disasters impact children's education in a number of ways; through the direct impacts of loss of lives, damages to the physical infrastructure to education for example; school buildings and material, roads and transport systems, decreased human resource pillars, and the indirect impact of loss of livelihoods, increased opportunity cost of going to school and in turn parents lack of capacity to send children to school, among others. Floods cause low enrolment of children in school, increased dropout rates and lower educational attainment (Baez *et al.,* 2010).

According to Shah (2013), the ultimate exclusion from education caused by floods occurs when students and staff are killed in unsafe schools. Thousands of teachers, educational personnel and students have died or been destabilized by floods (World Bank, 2001). For example, flooding in the Mekong Delta of Vietnam claimed hundreds of lives, the highest majority being young school going children. In the year 2000, 400 school going children died and in 2001, over 300 school going child deaths were recorded. In 2002, 99 children died out of a total death of 106 in the Delta. These death rates affected the number of children who were able to go back to school after the floods. Of the children who survived floods, most did not return to school (Tinh, 2003)

The damage caused by floods to physical infrastructure hinders school attendance for usually longer periods of time especially in developing countries where reconstruction of the damaged schools usually occurs long after the disaster. Delays in reconstruction of the destroyed schools (that is schools damaged beyond repair) require a level of reinvestment many times higher than the initial small incremental cost of building safely (Petal, 2008). Besides the negative impact on school attendance, floods damage to school infrastructure can have long-term adverse effects on children's educational attainment. When a lot of time is lost due to non-functioning of schools, the quality of education may drop. Similarly, when there are no plans for alternative teaching locations and students are denied continuous schooling, many will never be able to catch up and could drop out permanently. Also, when educational records are missing, students may fail to understand the situation and go on to further education. With the loss of income and housing associated with floods, delays in matriculation make it challenging for families to support children continuing their education (Petal, 2008).

One of the obvious dangers of floods is when pupils try to make their way to school during and after floods. In his study of the 2010 floods in Pakistan, Shah (2013) described going to school in the flood affected areas as a 'nightmare' as pupils had to either walk through flooded fields or take canoes to row through across inundated fields. In order to avoid drowning, pupils had to stop going home during break time to eat meals so as to reduce the number of crossings they made each day.

At the time of disaster, the cost of travelling daily to school rose as pupils had to pay a higher amount for boat rides in the morning and evening every day. These challenges and difficulties forced the children to discontinue schooling and engage in other activities.

In a similar study on the effects of the Budalangi floods in Kenya, Achoka and Maiyo (2008) reported high dropout rates among children affected by floods. These are pupils who dropped out of school completely and never returned, but rather engaged in child labor.

The destruction of education-related infrastructure such as schools and complementary installations and resources is one of the most direct ways in which floods can inhibit educational attainment, but perhaps more important is the drain on household resources that slow and sudden onset floods inflict (Baez *et al.,* 2010; Shah, 2013). Households frequently have to make rational decisions on expending resources for survival and coping with poverty, or on investments such as education to alleviate human vulnerability and enhance longer-term development projects. Unfortunately, for the poorest, there is usually no choice and human vulnerability deepens as resources are targeted towards survival, thus ignoring the call to enroll and retain their children in schools due to the high cost of education, but rather put their children to work in order to increase household income (Seballos and Tanner, 2011).

There are other indirect ways through which floods negatively affect child education. A study of floods in Mozambique in 2000 found that in many areas schools which were not damaged by the flood waters were used as evacuation centers to accommodate the displaced people. This interfered with normal learning and contributed to time lost out of school by pupils (Christie and Hanlon, 2001). Similar consequences were reported in Pakistan during the 2010 floods (Shah, 2013) and in Kenya during 2013 floods that were triggered by the long rains of 2013 (Ministry of Education, Science and Technology, Kenya, 2013). In all these scenarios not only were the schools used as shelter by flood-affected people, but even the furniture was used as fuel for fire and other infrastructure of these schools was completely damaged by the displaced people.

Floods further affect primary education as it exposes people, especially children (being the most vulnerable / most at risk) to infectious diseases, and hence inhibits their school attendance (Zoleta-Nantes, 2000). At the same time, disruption to medical facilities and the increased demand on people's resources can reduce their access to necessary medical treatment (Rashid, 2000). Also important to note are the potential mental health impacts of flooding resulting from stress (Stanke *et al.,* 2012) and the impact of inadequate nutrition following disruption to incomes and food distribution systems (Baez *et al.,* 2010). All these effects have a significant impact on children's education due to low attendance and possible drop out. Some of such effects may not become manifested until long after the flood event.

Even though the vulnerability of school attendance to different forms of shock in developing countries is well established, the impact of climate related hazards such as floods on primary education has not been well analyzed (Metzler, 2008). Indeed, floods can negatively affect educational outcomes through a number of ways on the demand side such as lower attendance, lower learning outcomes and higher dropout and supply side of education such as long periods of teaching may be lost due to the destruction of schools and other relevant infrastructure, unavailability of human resource pillars like teachers. These channels, especially on the demand side, will be more evident in low-income countries (Metzler, 2008).

3. CHAPTER 3: METHODOLOGY

3.1 DESCRIPTION OF STUDY AREA

Chikwawa is one of the 13 districts in the southern region of Malawi. It covers an area of 4755 square kilometers with a population of 356682 (NSO 2018). It is located on the western bank of the shire river. The northern part of the district is mountainous while the southern part is a flat plain. This plain is used for settlement and agricultural practices. Chikwawa is prone to flooding because it lies in the lower shire valley where any increase in rainfall intensity in the highlands results in the swelling of the Ruo and Shire rivers causing devastating floods. In 2019 Chikwawa experienced one of the worst devastating floods due to cyclone idai, where all traditional authorities in the district were affected. This study was carried out in the area of traditional authority kasisi. According to the Chikwawa district council the population of Chikwawa grows at a rate of 2.19% annually. This population growth in the area increases the vulnerability of people, structures and goods towards floods disasters. Changes in environmental conditions such as precipitation, changes in river courses and catchment areas have also worsened the situation. Apart from floods, Chikwawa receives infrequent heavy rainfall subject to seasonal droughts.

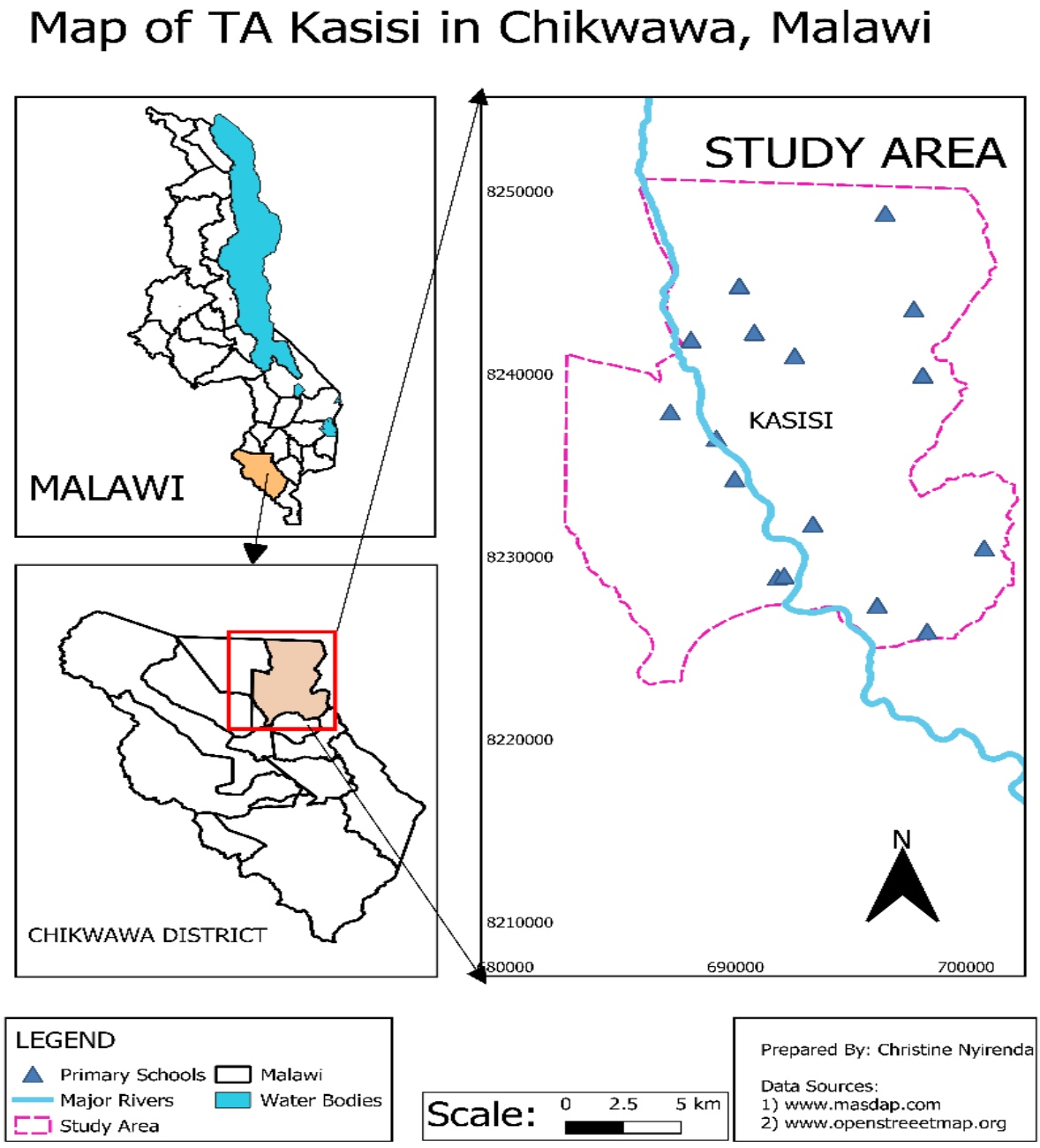


FIGURE 3.1: MAP OF CHIKWAWA DISTRICT.

3.2STUDY DESIGN

Considering that the primary goal of this study is to investigate the impacts of floods on children's education in chikwawa district, a review of school records data was done. Other research questions like investigating the factors of vulnerability that make children prone the risk of flooding and stakeholder interventions and their effects on children's education informed the research design.

The research was conducted using both qualitative and quantitative methods. This is so because a combination of all these methods provides a more comprehensive and convincing evidence and in turn a better understanding of the research problem (guest et al., 2013)

3.3SAMPLING

The qualitative component of this study is mainly based on experiences that people have gone through and can remember very well the details of the flooding event. A purposive sampling technique was used to select participants with detailed knowledge or direct experiences relevant to the impacts of floods on children's education within the community investigated. Due to occurrence of floods frequently in chikwawa, there is a presence of several organizations and government officials who could provide relevant information for the study.

The main respondents consisted of males and female members of the sampled community. They included school going children, local authorities, parents, officials in the selected schools, key government officials from government departments and NGO's. The selection of the respondents was based on the description of the type of respondents needed and in consultation with the right authorities. T/A Kasisi is in the BOMA zone which has a total of 14 schools but only 3 schools were selected and their school records were reviewed and analyzed. These schools were sufficient in providing information representing the situation in the flood plain.

In this study, the sampled communities were those located along the shire river, with primary schools that have been affected by floods. A total of 80 Households that have had primary school attending children or have dropped out were selected from the community.

3.4 DATA COLLECTION

In order to provide specific and generalized answers to the research questions, the following data collection methods and techniques were used: focus group discussions, key informant interviews, transect walk and school record review.

3.4.1 Focus group discussions

Two focus groups were selected from group village Njereza from the selected households. Respondents that were selected were those that had a good experience about the subject under investigation and were comfortable to speak freely. The respondents were engaged in discussions by the researcher using a discussion guide that had open ended questions. A whole range of issues were also discussed outside the guide. The group interaction was very helpful in providing information that answered the following: experiences on flooding impacts, factors that made children vulnerable to floods and interventions by stakeholders. The researcher ensured that every member of the group had an opportunity to share their views while guiding the discussions.

3.4.2 Key informant interviews

Two key informant interviews were conducted. Respondents were drawn from heads of households, local authorities, school authorities and NGO's that are operating within the traditional authority Kasisi area. A questionnaire with open ended questions was used. Open ended questions allowed the informants to answer the questions asked from their own reference not being forced to just agree to the prearranged questions. This allowed the respondents to express their thoughts more freely. This was helpful in gathering and recording detailed information to answer the research questions.

3.4.3 Informal interviews

Informal interviews were done with different households in group village Njereza. People here were so free to talk about different experiences they had faced during flood disasters.

3.4.4 Participant observation

Participant observations helped to understand the way of life of the community, culture, traditions, level of development in the community, various activities and interactions with stakeholders, and the way community cope with children's education and after flood disasters. The nature of

Primary schools and the attitude of teachers and children were observed and noted.

3.4.5 Document review

This technique provided quantitative data on school records. From the selected school's documents such as class registers were reviewed. This included data on enrollment rate, dropout rate, and repeating rates. A review of other school records like grades of the national examinations was also done. Other documents in the schools that had relevant information to the study were also reviewed and analyzed to assist in validating the results of the research.

3.5 DATA ANALYSIS

To make sense out of the data collected, the responses from the questionnaire were entered manually into a Microsoft Excel spreadsheet and later the data was transferred into a statistical package for social science (SPSS) 20.0 on Windows 10 and the use of Microsoft word. Under the graph builder in SPSS to produce the bar graphs and tables.

4 CHAPTER 4: RESULTS AND DISCUSSIONS

4.1 INTRODUCTION

This chapter sets out the findings from the research, starting with the impacts of flooding on children's education in the study area, the household vulnerabilities exposing school children to the risk of flooding and how stakeholder interventions address the effects of flooding on the state of children's education

4.2 IMPACTS OF FLOODS ON CHILDREN'S EDUCATION

4.2.1 Damage to school infrastructure and learning materials

Schools are easily washed away and completely destroyed when flood waters become high. This is so because most of these schools are built with poor building materials for example clay instead of cement. Although some of the schools sampled are built with concrete, parts of the structures are destroyed by heavy floods. During flooding, school documents and learning materials get wet and damaged, making them unfit for further use. School records are therefore lost. The time spent in rebuilding the damaged school structures is often long and without interventions from the government and humanitarian organizations, it takes a lot of time to rehabilitate since repair work will depend on community's contributions which in most cases is rare. The prolonged reconstruction period disrupts learning and sets the school children backwards.

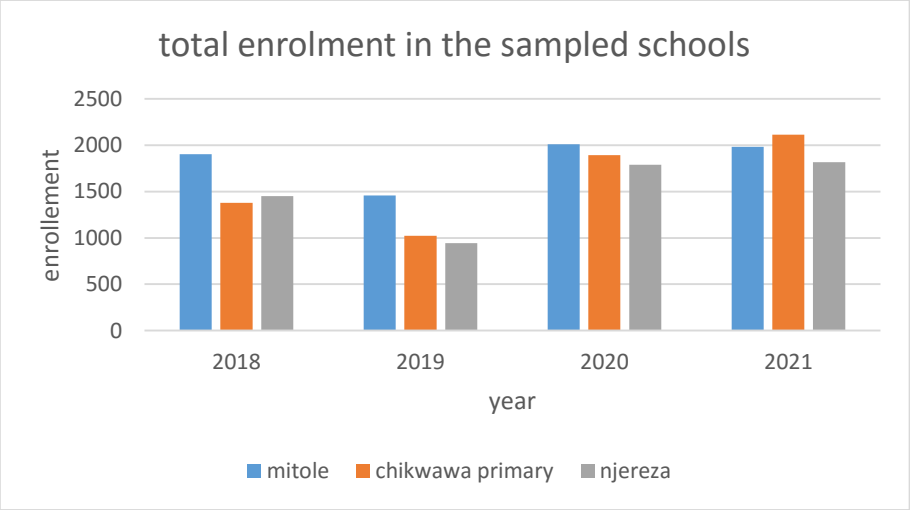
The research found that, after the heavy floods of the year 2019. Njereza primary school lost all of its teacher houses, three school blocks and four toilets. As at the time of the data collection for this study April 2021, only one house was renovated and one toilet functional.

During the same year, Chikwawa primary school lost the school library. 90 percent of the books and documents that were housed in were damaged and washed away.

4.2.2 Primary school enrollment

In addition to the damage to school infrastructure, floods have also been found to affect the total number of students who register and attend classes. The total enrolment of the sampled schools was a bit lower in the years the area was heavily affected by floods compared to other years when the area had no flood disasters. As illustrated in Figure 4.1 – a bar graph comparing the total enrolment of three sampled schools. The graph clearly shows that in 2019 the total enrolment for Njereza primary, Mitole primary and Chikwawa primary was a bit lower than in 2018, 2020 and 2021. This can be attributed to the fact that, in 2019 chikwawa was hit hard by cyclone idai which caused devastating floods. This caused a lot of problems for instance: parents had no capacity to send children to school, lack of physical access to school by children, teachers and government officials, nature of school infrastructure and the general atmosphere in which children go to school was affected by the floods. This resulted in lower enrolment of students to schools.

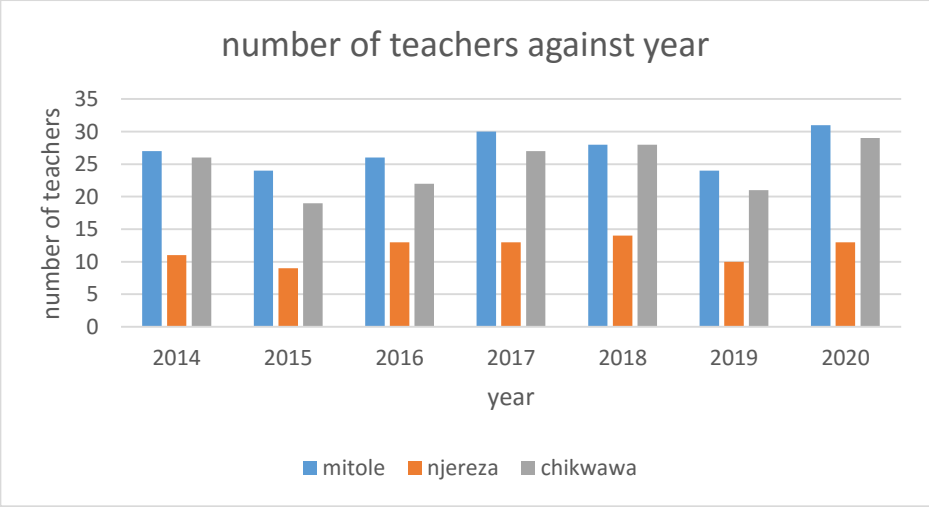
Figure 4.1 total enrolment in the sampled schools



4.2.3 Number of teachers available in schools.

Teachers are the key human resource pillars that influence the effective functioning of schools. The research examined flood effects on primary education by looking at the capacity of teachers in flood affected schools. The capacity of teachers was examined in the context of number teachers present at each school affected by floods from 2014 to 2020.

Figure 4.2 number of teachers in schools between 2014 and 2020



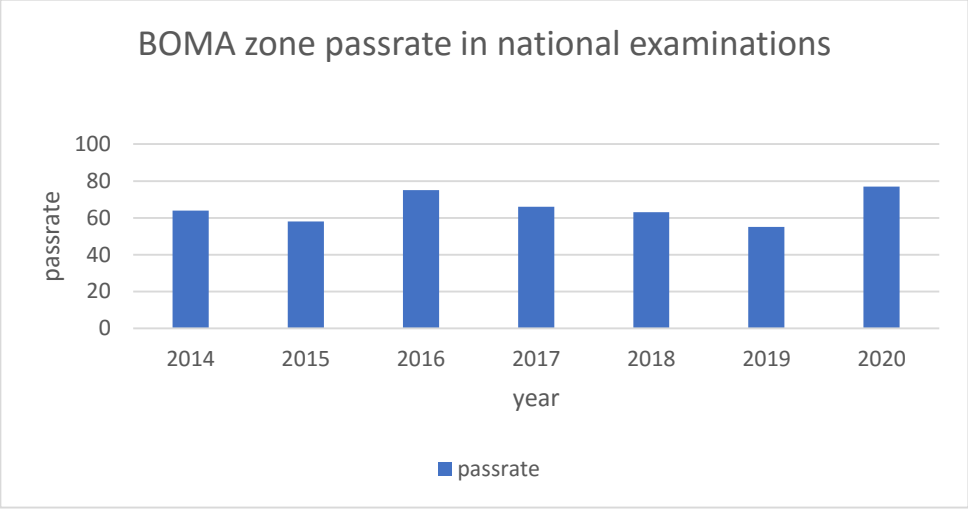
The results as presented in figure 4.2 indicates that the total number of teachers in each sampled school varied from year to year. According to the key informant interviews that were carried this change depended on the severity of the floods. For instance, the data shows that in the year 2015 and 2019 chikwawa experienced severe floods and during these years all the three schools had the lowest number of teachers. This decrease was triggered by the temporary relocation of teachers from the flood plains to upper lands. However, with less severe floods the schools experienced a gradual increase in the number of teachers.

The data in figure 4.2 when analyzed in the gender context revealed that there were more male teachers than females in the sampled schools. This difference in gender was very strong during severe floods of 2015 and 2019. Whereby in the year 2019, in Njereza primary there was completely no female teacher, chikwawa primary had only two female teachers and mitole primary had 5 female teachers. This bias is caused by the harsh teaching and living conditions that are caused by floods. For instance, inaccessible roads, poor sanitation and damage to personal property.

4.2.4 Performance in national examinations

The performance of school children in national primary school leaving certificate examinations is a strong indicator of floods impact on primary education. Within the Malawian context, performance in national primary examinations dictates the secondary schools which the primary graduates will attend. When a child performs good in national primary examination they stand a good chance of attending a good secondary school. To assess floods impact on performance in the national primary school examination, the research collected and compared pass rate data for the BOMA zone schools.

Figure 4.3 pass rate in national examinations for BOMA education zone schools



The findings as illustrated in figure 4.3 reveal that in the years that chikwawa district was hit by severe floods the pass rate in national examinations dropped down. For instance, in the year 2015 the pass rate dropped to 58% from 64% in the previous year and in 2019 again, the pass rate dropped to 55% from 63% the previous year. According to the key informant interviews, the reduction in the pass rate was as a result of disturbance of learning and teaching as schools were being used as evacuation centers, destruction of school infrastructure and learning materials and death and injury of teachers among other reasons.

4.3 HOUSEHOLD VULNERABILITY EXPOSING SCHOOL CHILDREN TO THE RISK OF FLOODING

4.3.1 Poverty

Communities in TA kasisi are poor. Their livelihood highly depends on subsistence farming. They cannot afford to build good houses that are flood resilient. The little money they earn from fishing, crop production and livestock production is used to buy immediate household needs. Any extra pressure on these households makes life very difficult for them. This makes them to be very vulnerable to the event of floods.

About 95 per cent of the interviewed households were of the view that government neglects their area. They feel that their area and Chikwawa as a whole is the least developed in the country. To them, the government is not doing enough to remove them from the vicious cycle of poverty for instance, one man who was a key informant from group village Njereza informed the researcher that" alluvial soils make the plain very fertile for agriculture and if the government provided them with loan schemes and irrigation machines and materials it would help them to produce more rice and maize for commercial purposes".

Generally, the communities believe they are not getting adequate and genuine support from the government so that they had better manage the situation and continue to live the way they live now.

4.3.2 Limited to the area and basic social services.

Flooding makes it difficult for the area of TA kasisi to be accessible during rainy season because the muddy roads become impassable. There are no proper roads and vehicles cannot access some places. Government officials from the ministry of education who need to visit communities to either monitor the performance in schools or pay official visits to the local authorities find it very hard to travel to the areas.

This also affects the transportation of school materials, food, medical suppliers and other community basic services. Although there are public transport facilities that travel to some of the areas, they however do not reach all the areas.

Goods that are designated to reach areas where vehicles cannot go are dropped at the nearest villages and transported further to the destination by head, wheelbarrows or through boats.

The area of traditional authority Kasisi also has limited basic social services. For instance, hospitals are not in good condition and they have limited staff capacity. During flood events, the people do not get enough medical support. The health facilities themselves are also normally affected by floods which sometimes destroy the structures, medicines and documents. Schools are not spared the conditions are very poor. There is also limited supply of electricity, quality water and sanitary facilities. The limited social services in the area expose the communities to the high level of vulnerability and when it floods, it becomes very hard for the people to support themselves.

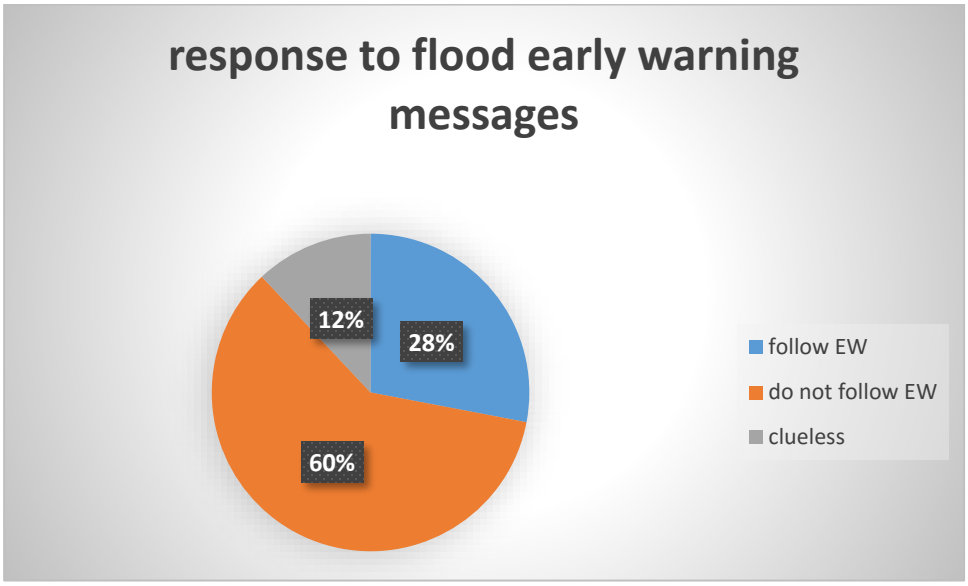
4.3.3 Adherence to flood early warning systems

An early warning system (EWS) is a set of capacities needed to generate and disseminate timely and meaningful hazard warning information to enable individuals, communities and organizations to prepare and act appropriately and sufficiently to reduce harm or loss (UNISDR, 2009).

EWS information provide the communities with the opportunity to make decisions on how to prepare for the event, how to reduce the likelihood of being affected adversely and to prepare for evacuation. Malawi has a meteorological department that is responsible for hydrological data management. However, some of the weather stations within the country are not fully functional due to poor maintenance and lack of skilled personnel to run them. This affects the accuracy and timing of warning messages.

According to traditional authority Kasisi, his area uses a river gauge system to give flood early warning messages to the people. The river gauge is installed in shire level and is calibrated with number that measure the water height. Members of the area civil protection committee are responsible for checking the river gauge reading at different times especially during the rainy season. When the water level is very high and it seems to them that a flood can happen, they pass a message to the traditional authority so that he instructs his subordinates to warn the people about possible floods. Even though this system is inaccurate, some people take precautionary measures when they receive the warning message. Some people hear the message but neglect it because they have nowhere to evacuate to and fear of leaving their assets behind. This makes them vulnerable to the impact of floods when they really happen as per warning.

Figure 4.4 shows how people of group village Njereza responded to flood early warning messages.



From figure 4.4 only 28 per cent of the respondents followed flood early warning messages as announced by the village man. 60 per cent did not follow and 12 percent were clueless.

The communities do not have much trust in the early warning messages because the river gauge system is not reliable and false alarms that led to disappointment when the floods did not occur as announced. Another man from a focus group discussion informed the researcher that" there is no motivation to take the warning messages seriously because they don't specify the degree of flooding that is expected".

4.3.4 Illiteracy

From the household interviews that were carried in group village headman Njereza, it was discovered that 90 percent of the parents have not had the chance to attend secondary or tertiary education. This is due to problems caused by floods in the area and social economic problems that are inherent.

80 percent of the people interviewed valued education but their environment is not conducive and they do not have enough capacity to attain secondary or tertiary education.

A few people that manage to attain tertiary education do not come back home to develop the area. The limited capacity of most people from the area to attain secondary or tertiary education limits their capacity to come up with good ways on how to develop their area and make it resilient to future flood hazards. The absence of highly educated people to be placed in good positions at the local authorities make it difficult for the community to make their voices heard and they are unable to push government to pay attention in the development process of their area. This situation makes the community vulnerable to the effects of floods.

4.4 STAKEHOLDER INTERVENTIONS IN REDUCING IMPACTS OF FLOODING ON EDUCATION IN CHIKWAWA

4.4.1 Recovery, Rehabilitation and Reconstruction activities

Humanitarian organizations such as Goal Malawi provide support such as seeds which are drought resistance and have a fast maturity rate they also provide the community with goats, this is to allow them to be able to generate some income for their families. This support helps to get the people back on their feet. The government on the other hand is responsible for the rehabilitation of public infrastructure that are run and owned by the government such as schools, hospitals and roads that are damaged by the floods. The manner in which government takes action to spend resources for a recovery programme is very slow as actions need to follow all the protocols in place. However, the reconstruction and rehabilitation of schools among others is delayed, this implies that even when flood displaced children are sent back to their communities from the camps, attendance in schools is delayed as they wait for the government to renovate their schools.

One school teacher at Njereza primary school mentioned that "my school was destroyed by the floods in 2019 and the government has made no effort to repair the damage as at the time of the data collection for this research in April, 2021. Such delays in making damaged schools functional disrupts the continuation of teaching and learning activities and it demotivates school children".

Nevertheless, it is important to mention that government and other humanitarian agencies do assist in the recovery process for the area and also provide support in rebuilding, reconstruction and rehabilitation of infrastructures despite the fact that the support is usually delayed and insufficient.

4.4.2 Enrolment of children in upper land schools.

The Malawi government through the ministry of education plays a key role in ensuring that children who are displaced and are willing to go to school are registered and enrolled in upper land schools.

The government ensures that support is provided to the schools hosting these children. Sometimes extra classrooms are constructed and tents erected as emergency classrooms and extra teachers are provided to ensure that there is sufficient capacity for the extra children.

The government also provide school supplies such as books, black boards, tents and other materials to cater for the extra pupils. Children are enrolled in schools which are closer to where they live to ensure that distances are relatively shorter.

While this is a good intervention to ensure that children continue with their schooling and do not stay at home for long periods, this strategy is only beneficial to well to do families who have enough resources to send their children to upper land schools. Poor families find it difficult to send their children to upper land schools because they cannot afford the extra costs that are required.

4.4.3 Relief aid

The government of Malawi through the department of disaster management affairs and other organizations provide relief aid to support the affected people. DODMA has food stocks that are pre-positioned in Blantyre. This is done in preparation for response to all disasters that happen in the southern region districts. This reduces the time taken for emergency supplies to arrive in the affected areas. This enables faster and focused delivery of relief aid.

The communities interviewed mentioned that "the support we receive from government is short lived and often not sufficient to cater for the welfare in terms of food, medication, shelter, children's education and nutrition needs of the children".

DODMA provide tents which are erected in isolated places to host the displaced people. It also provides people with food, water, cooking utensils, blankets and other basics needs that are needed to sustain life at the camps. The government also provides the communities with school tents and materials to ensure that education for children is continuous even when the community is in a state of a disaster.

5 CHAPTER 5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The main conclusion that can be drawn is that, in the years that chikwawa district was hit by heavy floods (2015 and 2019), the enrollment rate in schools reduced, pass rate in national examinations reduced and also the number of teachers available at a school reduced. Floods also caused damage to school infrastructure making pupils to stay at home for longer periods until the schools are renovated. This aspect of the research suggested that there were many indications that communities in traditional authority Kasisi are not prepared to leave the flood plain despite having recurring floods. These basic findings are consistent with research showing that on numerous occasions the government had planned for the evacuation of people to the upper land but all the attempts were rejected by the people. This conclusion follows from the fact that the government failed to provide better livelihood alternatives.

The data indicate that poverty in the area of traditional authority Kasisi is very high. This result casts a new light that When floods occur, the effect is immediate because most families do not have the capacity to prepare in advance and recover from the adverse impacts in a timely manner. This may be considered a further validation of the use of the different coping strategies and resources are used for food and other basic services and not for the education of school children. Flood Early warning systems which are supposed to warn and inform people about imminent floods, their intensity and duration are not fully functional and does not give the warning in good time. This affects how people prepare for the impending incident. Other basic social services such as hospitals, quality water and electricity are limited. Increases the people's vulnerability to the impacts of floods.

There are different interventions being undertaken by the government, NGO's and other stakeholders in order to address the adverse impacts of flood disasters on the state of education. These interventions include enrollment of children in upper land schools, relief aid and rehabilitation, recovery and reconstruction. These interventions do to some extent,

directly or indirectly minimize the impacts of floods on children's education by providing opportunities for the children to continue schooling. However, most of the interventions undertaken to mitigate flood impact are not seen as having desired effect because most of them are reactive instead of proactive. This is to say action is only taken when the floods happen instead of planning for them in advance before they happen.

5.2 Recommendations

- There is need to have a collective effort from various actors, government and NGO's. To consider advocating for a school curriculum and system which ensures that children do not go to school during the peak periods of floods. This means that, the school curriculum and calendar need to be based on the flood situation. Through the department of meteorological services, the ministry of education can be aware of periods when the level of water in Shire River is expected to be high. During this period, schools should be on holiday. This will prevent the school children from travelling during the peak periods of the floods and will reduce the risk of the education of the children being affected by floods.
- Savings and insurance. Insurance and savings would guarantee some sort of compensation to the flood victims that have lost everything. Insurance would enable the people to bring back better their life after a severe flood. People can insure their lives and assets through different companies of their own preference such as NICO life insurance and van guard insurance. The availability of insurance schemes will help to reduce pressure on parents and allow them to send their children back to school as soon as the flood situation normalizes.
- Child labor is commonly practiced in the area of TA kasisi in the after math of flood disasters. Children are subjected to work and support upkeep instead of going to school. Organizations that work on children's rights such as UNICEF should work through community leaders, the district commissioner and the national government to strengthen policies on child labor and put in place control mechanisms to ensure that parents and guardians do not exploit children. If child labor is discouraged and

emphasis is placed on education for every child initiatives education in the area will improve.

- There is need for the government to build evacuation centers in the area so that schools should be functioning even when the area is in a state of a disaster. When floods occur people of traditional authority Kasisi tend to find refuge in schools. This is so because the area has no evacuation centers that can accommodate them during disasters. This delays education for children since learning and teaching activities cannot be done while the schools are being used as evacuation centers.
- Government also need to build schools and other basic facilities in upper lands where the risk of flooding is very low. This will force people to relocate in order to be able to use the facilities. In that way, the risk of the people being affected by flooding will reduce and schools will be functional throughout the year. This will improve education in the flood plain.
- Communities therefore need to develop their own systems they can use to alert themselves on flood hazards. Early warning systems that are instituted by the department of meteological services are not fully functional. This makes people not to rely on them for flood warning. They can use their own indigenous knowledge and experience on flood incidences to inform people to be better prepared well ahead of the floods.

5.3 limitations of the research

- During the course of this of this study, the researcher encountered so many challenges such as unavailability of data as most of the school documents were destroyed and washed away by floods, lack of funding which limited the amount of data collected and due to covid-19 it was not possible to cover the planned sample size.

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7 Appendices





