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A qualitative study to explore the immediate effects of cyclone Freddy on vulnerable learners education in Malawi

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Abstract

Purpose: The purpose of this study was to explore and identify effects of Cyclone Freddy on vulnerable learners in the flood prone areas both at primary and secondary school levels. **Methodology:** This study used a qualitative study method, which depended on mostly secondary data, using online interviews, reviews of online news articles, social media postings and United Nations reports and observations. Data was collected from the most affected areas of Blantyre Urban, Phalombe, Mulanje, Nsanje and Chikwawa districts. Purposive and convenience sampling was applied to the education institutions to get a deeper understanding of the phenomenon. The study also targeted teachers, parents, and students of the affected schools in the districts. The tools for collecting data were questionnaires using face to face interviews, focus group interviews which mostly included observations. Information was coded and participants in this study were assured of for anonymity and confidentiality.

Results: The results of the research provide a better understanding of the impacts of cyclones on education systems and possibly give pointers in terms of preparedness of education systems to cope with disasters of the same magnitude in future. Additionally, due to lack of rapid response on Psycho Social First Aid (PFA), a lot of the victims succumbed to trauma and depression. This made the go back to school campaign very difficult especially for the most vulnerable communities.

Contribution to theory and practices and policy: The research findings validates the theory of disaster preparedness that exhaust all areas of rapid response as a recovery strategy, such as evacuation, supply of immediate basic needs in the areas of shelter, food, beddings and psycho-social support especially (PFA). The Government (DODMA) through Ministry of Education and other line Ministries, the donor communities and implementing partners should embark on harmonizing efforts for disaster preparedness and recovery strategies to speed up operations. Watt, (2019), suggests that, while it is a requirement to take pro-active measures to put in place realistic strategies for future natural disasters, education should also be taken as a priority in the recovery strategies.

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Keywords: Climate change· tropical cyclones· disaster prone settlements· disaster risk reduction, recovery strategies, vulnerable learners, Psycho-social First Aid

1. Introduction

According to Shama, U., (2013) ^[22], environmental factors play a very big role in the education of any child regardless of age, colour, ethnicity, gender and race. One of the worst scenarios is when education is faced with natural disasters that may cause death, relocation serious injury and disease pandemics such as cholera among many more.

The purpose of this study is to explore in what ways Cyclone Freddy has affected the education system with much focus on vulnerable learners in the flood prone areas and to come out with recovery strategies on the come back to school campaign.

There have been numerous cyclones that have occurred around world the but still there are some notable cyclones that have brought devastating effects on the lives of vulnerable communities with specific focus on their children's education.

Severe tropical cyclones have the capability to disrupt normal life activities and vulnerable communities have not been spared. Every aspect of people's existence is affected, including educational activities with the destruction of infrastructure, loss of life and property as well. Effects of cyclones on education range from physical damage to infrastructure, institutional and administrative challenges and psychosocial impact on those that have been affected. These effects are worse in communities where cyclones are not common, because people mostly are ill prepared to cope with the impact of the cyclones. Immediate basic needs for survival such as food and shelter are often prioritised by aid agencies, whilst other needs such as education may end up being the responsibility of the affected communities and mostly this is not regarded as a lifesaving issue so it is given less priority by stakeholders in disaster management.

1.1. Background of the study

The effects of cyclone Freddy on the education especially on vulnerable learners in the southern region of Malawi in Blantyre Urban, Phalombe, Mulanje, Chikwawa and Nsanje districts were too severe, causing schools to be completely submerged in water, roofs blown off, pit latrines sinking and walls collapsing. This study intends to establish the impact of cyclone Freddy on learners and educators, recommend coping strategies and opinions towards recovering. Some of the violent cyclones that have made landfall in Southern Africa between 2018 and 2023 directly hitting Mozambique and neighbouring countries such as Malawi, Zambia and Zimbabwe are, Ana, Idai, Dumako, Gombe and Freddy. Nonetheless Freddy, proved to be the worst of them all since it made 2 landfalls within a period of 4 week; thus from March 2-12, 2023, and again from February 6-24, 2023. The second landfall devastated Malawi with heavy rains that reached up to 500 mm, causing flash floods which resulted into loss of life, washing away bridges, destroying learning institutions, hospitals and houses. The Ministry of Education communicated to the general public that schools in the Southern Region of Malawi were to be temporarily closed for 2 days then extended to 10 days immediately after Cyclone Freddy devastated Blantyre City with heavy rains and flush floods which claimed over 200 lives of some of the residents. Over 59 thousand residents became homeless and schools within Blantyre were turned into camps. According to Watt, (2019), cyclone Idai, caused trauma, lack of basic needs, insecurity, damaged school infrastructure, bridges and roads, but Cyclone Freddy caused extensive damage in the affected areas than ever known before. As already stated in the introduction, some schools were submerged in water, roofs blown off, walls collapsed, toilets sunk, entire villages swept away and lives were lost. Schools in the affected areas were closed as some of them were turned into holding camps which meant that re-opening of the schools was almost impossible and this needed an extra budget to maintain toilets and the structures to be fit for learning environments. (Education Cluster, 2023)

1.2. Statement of the Problem

The statement of the problem is that Cyclone Freddy disrupted normal operations of the education system and normal life of the inhabitants of the affected areas. These included the education institutions normal operations, health systems, businesses, transport and road networks which reduced mobility to almost zero. National Publications Daily

News, (3rd March, 2023). In the education system the following were affected: the infrastructure, institutional and administrative operations of both primary and secondary schools and the psychological and mental health impact on the learners within the effected communities. Such being the case, some learners become orphans and homeless overnight, there was lack of basic needs such as food, shelter, medical assistance, and Psychological First Aid (PFA). The education system was at a standstill leaving learners and educators stranded with no hope of survival and no continuity towards a quick recovery to normal educational systems and operations.

2. Research Methods and Materials

2.1. Ethnographic

As a response to the devastating effects of cyclone Freddy, Government through line Ministries and other stakeholders in the category of Development Partners and Implementing Partners such as UNICEF, UNDP, OXFARM, Plan International, and many is others in the Education Cluster and disaster preparedness (DODMA) made an effort and also camped at the disaster area to collect first-hand information from the victims and service providers. Officers from line Ministries assisted by UN Agencies and the DODMA temporarily moved to the Southern Region representing child protection, Ministries of Health and Gender and others with an aim of getting into close contact with the flood victims so as to get an in-depth knowledge of the effects of the phenomenon for proper assistance.

2.2. Case study

This study used real time experiences of the victims during and after Cyclone Freddy devastated their areas. In areas where Cyclone Freddy had huge impact survivors narrated experiences they faced during and after the catastrophe. Some parts of Phalombe and Mulanje districts were completely cut off from the rest of the country for several days. Survivors did not have power, water, food and shelter. Later, some of the victims had stories to tell. For example, the following case study.

Jane (Name withheld), lost some members of her family including property and their home. She narrates her story., Heavy rains fell in our district for almost a week and in the middle of the night I heard a loud bang which sounded like an explosion or thunder. There was a lot of noise and that is when I realized that part of our house was gone. I held on to something I thought was chair or a table. I cannot explain what happened but I found myself on a heap of a lot of trash. I was trembling with fear but miraculously I was taken out of the place by unknown people to the nearest primary school. I heard one of them say, 'sanafe uyu' (meaning that I was still alive). I believe I might have passed out.

At the school I tried to search for my siblings and my mother, but to no avail. I was destitute, worried and I cried for a long time. I could not eat not because I was crying but there was no food for almost 2 days. My mother and one sibling were found a day later but my other 2 siblings and some members of my family have not been found to date. All the teaching and learning materials at our school were severely damaged which made our going back to school to be a far-fetched dream. Most families were still mourning for those who were not found but assumed dead.' Most of the times I dream that I am being carried away by water, and it is very disturbing.' She concluded.

Several children, parents and care-givers in the designated camps had a lot of stories to narrate, which was also a source of information that assisted in providing a more information from the flood victim’s experience which was first-hand information.

2.3. Use of information from media

The social media such as Facebook, twitter and WhatsApp were full of the devastating effects of the cyclone. Other platforms were the daily Newspapers of Nation and Daily Times which were in form of print out and online (electronic). Television stations such as MBC, Times TV and Mibawa Television and all the radio stations gave out information in their programs on the devastating effects of Cyclone Freddy.

2.4. Document / Information analysis

Information from the Education Cluster was obtained through officers from various Ministries and organisations who camped in Blantyre and closely monitored the affected areas in the southern region through data collection on the numbers of affected communities, infrastructure damaged and requests for resource mobilization to assist the cyclone victims. This study analysed the data documented by the mentioned stakeholders in their reports as a source of information from the affected areas.

3. Findings / Results

3.1. Effects faced in the course of cyclones in primary and secondary schools Both primary and secondary schools were closed after it was declared that the country was a state of a disaster area on 22nd March, 2023. According to the Education Cluster report, (2022), Tropical Cyclone Freddy was more devastating than any other disaster Malawi has ever experienced. By 22nd March, 2023, more than 500 people were feared dead with 533 people still missing, and over 560,000 people displaced in more than 570 sites. Nearly 4,000 people have been rescued since the onset of the floods. However, many more remain stranded in hard-to- reach areas.

3.2. Impact of cyclone Freddy on education

At least 624 schools (550 primary, 74 secondary 3 colleges and 6 universities) experienced some level of loss and damage. Seventy-two (72) classrooms, 87 teacher houses, 986 toilets and key school infrastructures were fully destroyed. Additionally, 460 classrooms, 423 teacher houses, 542 toilets and other key school infrastructure were partially destroyed. Over 724,800 learners (368,313 girls) were not able to access learning because of the cyclone.

Table 1: Affected schools by type and district

Education District	Primary	Secondary	Total
Balaka	10	0	10
Blantyre Rural	26	8	34
Blantyre Urban	31	3	34
Chikwawa	40	5	45
Chiradzulu	70	6	76
Machinga	27	10	37
Mangochi	19	1	20
Mulanje	67	8	75
Mwanza	4	1	5
Neno	3	1	4
Nsanje	59	5	64
Phalombe	68	10	78
Thyolo	43	7	50
Zomba Rural	76	7	83
Zomba Urban	7	2	9
TOTALS	550	74	624

Source: Tropical Cyclone Freddy Emergency Response, March, 2023, Malawi

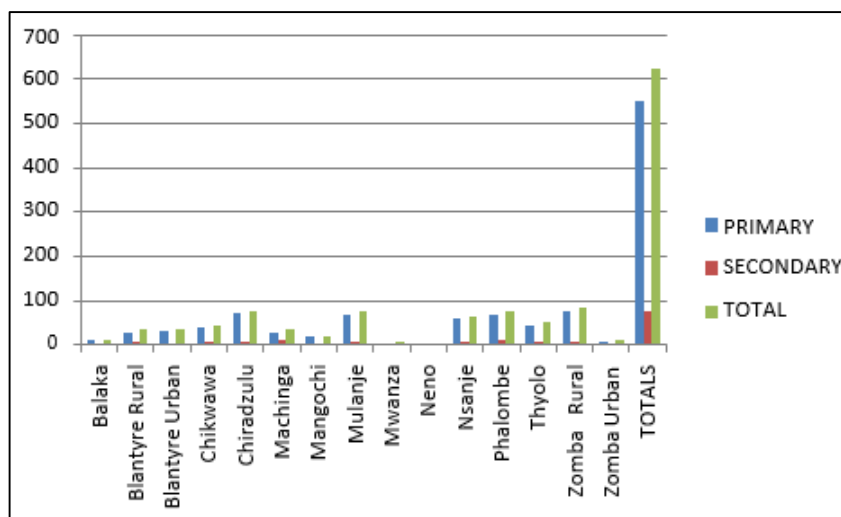


Fig 1

4. Discussion

This study has attempted to explore the immediate effects of cyclone Freddy on vulnerable learner's education in the disaster prone areas in Malawi. Cyclone Freddy brought a lot of negative effects on vulnerable learners in the most affected areas in the Southern Region of Malawi. According to the Government of Malawi, Tropical Cyclone Freddy Post-Disaster Needs Assessment, (2023), continuous heavy rains were accompanied by multiple flooding and landslides which were reported in the following districts:- Balaka, Blantyre, Chikwawa, Chiradzulu, Machinga, Mangochi, Mulanje, Mwanza, Neno, Nsanje, Ntcheu, Phalombe, Thyolo and Zomba. It was further reported that more than 2,267,458 people were affected, 659,278 displaced, 679 died, 537 were missing and 2,186 were injured. There was an estimate of 1,308,064 women and girls of reproductive age that were affected with 100,927 of these who were pregnant at that time. This report is in summary but was not zeroed in the learner vulnerability. However, the report brings out issues of infrastructure damage and some other devastating situations which directly affected learners in the disaster prone areas. Therefore, much focus is on the effects of Cyclone Freddy on education especially vulnerable learners.

It is in this respect that the discussion revolves around bringing out significant implications that can be tackled by various stakeholders such as policymakers, educators, communities and the vulnerable populations in the affected areas. The significance of the study therefore is to understand vulnerable learner's needs, Policy Development, Resource allocation, Psychosocial impacts, Long term educational outcomes, Community resilience, Equity and Social Justice, Planning for Future Disasters, International Perspective and Advocacy and Awareness which can help to address both short and long term effects of natural disasters such as Cyclone Freddy in Malawi.

4.1. Understanding Vulnerable Learners' Needs

According to Theirworld's report Safe Schools, (2023), it has been reported that by 2030 there will be over 620 million young men and women who will be affected with natural disasters if no concrete action is taken to improve the recovery processes and strategies in the education systems for vulnerable learners. It should be noted that the most poor and marginalised communities are at most risk of the devastating effects of natural disasters such as cyclones and flash floods and mostly it is the education operations that suffers mostly where education capacity and resources are low or are not available. However, Theirworld's report Safe Schools, (2023), has warned that the recovery of education systems such as rebuilding, provision of teaching and learning materials is not a priority when it comes to saving lives of people. The results are that children are left to be learning in temporary structures for many years to come before the recovery strategies are implemented. For Cyclone Freddy in Malawi, the effects have left affected communities homeless, without food, clothing and other basic needs for children to return to normal schooling and livelihoods. There are so many challenges learners faced during and after Cyclone Freddy.

4.1.1. Challenges faced by vulnerable learners

1. Trauma

Most learners and teachers affected by cyclone Freddy underwent through fear, anxiety and depression. For

example, some learners lost parents, siblings and homes which rendered them homeless within a period of a short time. The helplessness brought about anxiety and was traumatizing for children who did not know where their next meal was going to come from and where to sleep. They did not know the whereabouts of their immediate families while others discovered that they lost their parents and siblings. Unfortunately, the affected places were very difficult to be reached by road or air as the rains were still falling heavily. For example, in Thyolo District they lost a teacher who fell in a pit latrine which was sunken due to the wet grounds. SHED data, (March, 2023). Fear and anxiety was for everybody at this time or learners, teacher, officers from the District and Education Division Offices and Psychological First Aid was a priority, which, unfortunately was not available due to circumstances beyond the rescuers control but it was much needed by the traumatized children and other individuals.

Apart from fear and anxiety, most learners faced the devastating effects of the cyclone especially for those that lost family members. It was a mourning period for most of the affected people but they had nowhere to turn to. Government and other stakeholders were helping so much in life saving interventions and giving shelter and food relief items.

2. Basic needs (Lack of shelter, food and clothing)

After cyclone Freddy hit some district in the southern region of Malawi, houses were swept away especially in Blantyre Chilobwe area where there was a mud slide, roofs blown off and structures destroyed. The immediate response was for the affected individuals to camp at the nearest schools and churches. For example, in Blantyre a lot of the victims were hosted at Manja for safety first while food items, clothing and blankets, medicines and psycho-social support came in a little late as it took some time to mobilize the much needed resources instantly. Some residents that were not affected were also found at the camp in search of food items. Some water pipes burst around Chigumula area causing scarcity of clean water for around 50, 000 people.

3. Recurrent issues of communicable diseases

As Cyclone Freddy devastated the inhabitants of some parts of Southern Region communicable diseases such as cholera was also on the higher side. In 2022, Malawi experienced a widespread cholera outbreak, with 36,943 cases and 1,210 associated deaths reported from 29 districts in the month of March alone as stated by World Health Organisation (WHO), 2022. Therefore, the devastating effects of Cyclone Freddy added to the vulnerability of cholera affected areas. However, the Malawi Government embarked on a cholera vaccine in all the districts targeting, schools, hospitals, markets and households.

4. Lack of Teaching and learning materials

Some schools were completely destroyed and covered by flood waters and mud which contributed to the destruction on teaching and learning materials. UNICEF, (2022), reports that there was no access by learners to such schools and teaching and learning completely came to a halt. Teachers were also affected as they had their houses and belongings damaged or washed away. This brought to halt all learning activities in the region.

5. Child protection issues

Shi, (2018) describes child protection during and after natural disasters as an attempt to prevent issues that exposes children to exploitation, abuse, harmful practices and violence against children became almost impossible as priority was given to life saving strategies. In case of the effects of Cyclone Freddy, there are still unresolved issues of child protection which included child labour, sexual harassment and assault, orphanhood and homelessness were adding to depression and trauma in learners. Education Cluster, (2022), reports that adolescent girls became more vulnerable to teenage pregnancies and child marriages due to the closure of schools. Overcrowding of displaced people in shelters meant that, in some sites, men, women, and children are all using the same sleeping areas, which increase the risk of sexual violence and limits privacy. UNICEF, (2022), observed that disruption of protection services and children's safe spaces were amplified by overstretched protection capacities and mass mental trauma of children, families, communities, and even frontline workers also experienced some sort of trauma due to fatigue and limited resources.

4.1.2. Impact of Natural Disasters on Education

The immediate impact of Cyclone Freddy on education in the affected was hopelessness due to the damage on houses, schools and road infrastructure. In places such as Phalombe and Nsanje districts some schools were completely submerged a thing which disrupted education services. It is evidenced that all the pillars of education were disrupted and impacted. For example, learners were denied access and Equity, Quality and Relevance and Governance and due to the roads which were washed away, school infrastructures that were partially or totally destroyed and others turned into camps plus teaching and learning materials destroyed by the cyclone while in the non-affected areas teaching and learning continued with the aim of being assessed at the end of the academic year.

There was total disruption of necessary services in schools due to the impact of Cyclone Freddy and these were Water Sanitation and Hygiene (WASH) programmes, child protection issues and school feeding programmes in the affected schools

The Education Cluster reported that there was loss of school days that came about due to the closure of schools in the flood prone areas. It has been reported that learners lost a minimum of three weeks of schooling as recovery efforts were being put in place. Schools that were turned into camps faced problems such as classes being conducted under trees, lack of teaching and learning materials and having teachers that were also disturbed by the phenomenon and some were also traumatized. UNICEF, (2022), reports that over 400 schools were occupied by IDPs which made the recovery process very slow and impossible in other camps since they were side effects like lack of toilets, cholera infection threat and non-availability of food and clean water. Ministry of Education development agendas were completely affected as most of the development partners diverted their efforts towards emergency work and recovery processes. Implementation of financial assistance on bursaries, WASH programmes for unaffected areas and construction work on additional classrooms were also disrupted.

4.1.3. Vulnerable Learners and Marginalized Communities

With the growing populations both in urban and rural

settings, communities have embarked on settling in areas there were not meant for construction. Such places are found along the river banks, hilly and sloppy areas, which indicates that there is so much concentration on population issues thereby bringing poor settlement planning and thereby giving chance to weak local authorities to allocate such land to whoever wants to buy without taking into consideration whether there is an increase to hazard risk. UNHABITA, (2015), projected that the world's urban population will increase to 1,2 million by 2030 and that 54 per cent of the population is now living in cities. Currently NSO, indicates that the City of Blantyre has a population of 800,264 with a 3.64% growth rate per annum. Due to poverty and no proper planning, most of the people in the flood prone areas have settled in low-lying areas, riverbanks and sloppy areas. Chugthai, (2013), explains that people have settled in such areas without proper understanding of the risk and vulnerabilities which are involved when the rains cause flooding with cyclones as one of the worst natural disasters. Therefore learners are the most vulnerable group to be affected when it comes to the go back to school campaign. These are communities that live around schools which have been completely or partially submerged such as Carmushka ABC in Phalombe and Mpatasa in Nsanje districts. Referring to the effects of Cyclone Freddy; homes and school infrastructure were destroyed, schools, teaching and learning materials were damaged and roads became impassable. The teachers were equally affected and traumatized to the extent that teaching halted; learners were traumatized and depressed as PFA was not available. To crown it all, the inhabitants lacked basic needs and traumatized as some of them lost their loved ones.

4.1.4. Long-Term Effects and Recovery

Cyclone Freddy and the previous cyclones brought devastating heavy rains and winds which brought with them long-lasting effects in the affected areas such as infrastructure damage, economic shocks, environmental changes, health hazards, and psychological impacts.

There has been a lot of infrastructure damage in the impact areas. Extensive damage was made to schools, hospitals, roads, bridges and some structures such as power lines, water and sewer pipes. The extensive damage needed to be assessed and required to take significantly a long time to full recovery. The disturbance caused due to the damage cyclone Freddy made, they contributed heavily to the economic shocks and setbacks in the already vulnerable communities and especially in the rural areas. Damages were made to peoples' livelihoods, small scale businesses and total damage to the agricultural produce brought untold suffering to the vulnerable communities in the affected areas for an extended period after the catastrophe. The floods caused environmental damages which resulted into damages to vegetation and causing soil erosion which in turn will need long term solutions such as reforestation, soil erosion control measures and habitat rehabilitation which at the moment the target for rehabilitation is on the elderly and those with disabilities.

There were also some health challenges which came along with the effects of cyclone Freddy such as contaminated water sources and widespread infections of cholera and diarrhoea. Health care facilities were scarce due to the impassable roads and displaced communities which also included medical personnel. DODMA with the help of the donor community addressed the problem by administering

first aid and refer serious cases to the nearest or referral hospitals. The challenges people faced due to the impact of the cyclone brought trauma and stress which in many cases ended up in depression by some individuals. The short term efforts by government was to embark on a cholera vaccination in the country and provided clean water to the affected communities; while long term recovery efforts included rehabilitation of some damaged infrastructure, building houses for the elderly and vulnerable and construction of bridges and roads.

4.1.5. Recovery Process

The recovery process from cyclones is complex and often involves collaboration among governments, humanitarian organizations, and communities. The focus is not just on rebuilding what was lost but also on creating more resilient and sustainable communities that are better equipped to face future disasters.

On immediate relief efforts were made to provide tents, schools as camps, food and clean water from well-wishers from the surrounding communities, medical assistance from Malawi Red Cross (MRC), DODMA, the donor community and neighbouring countries. Some of the task teams such as the Education Cluster conducted assessment to evaluate the extent of the damages and planned for long-term recovery which focus at infrastructure.

I. Assessment and Planning: After the cyclone, assessments were conducted by DODMA, through line Ministries and the donor community, which assist the government to come out with an evaluation on the extent of the damage the cyclone brought. Further to this, the evaluation assisted DODMA to come up with long term plans for recovery, such as construction of the damaged bridges, schools, hospitals and houses for the elderly and most vulnerable victims. This involved governmental bodies, NGOs, and international organizations alongside neighbouring countries that assisted with food, temporary shelter, and air transport to drop relief items in hard-to- reach areas.

II. Reconstruction, Rebuilding and community resilience building:

This phase of recovery after devastating effects of a cyclone needs huge amounts of money and expertise. The works will include reconstructing damaged infrastructure, restoring utilities, and rebuilding homes and communities which are vital for recovery. There is also need for proper planning in readiness for future disasters for example, putting in place detectors on early warning systems, such as meteorological warnings for floods, training of preparedness for communities and service men and an inclusion of community participation for sustainable development like survival skills.

III. Economic Recovery: Reviving local economies has been a difficult task for Malawi due to the economic shocks the country has faced. After Cyclone Freddy followed cholera outbreak, isolated cases of Covid 19, polio threat and the devaluation of the Kwacha. Nonetheless, some of the flood victims have been included in the social cash transfers to boost their livelihoods, construction of stronger houses by well-wishers for the elderly and vulnerable, construction and rehabilitation of damaged school infrastructure and building of roads and bridges in the most affected areas. During the construction works some skilled people within the area found employment opportunities. The country has embarked on the

introduction of mega farms using irrigation to sustain the economy of the country and alleviate hunger for the affected regions as a long term measure. There is a possibility of creating employment opportunities for people living around the mega farm and also food security.

4.1.6. Specific Cases: Cyclone Freddy in Malawi

Primary schools were the most affected since they are more than the secondary schools and most of the infrastructure in rural areas was totally destroyed by Cyclone Freddy.

Most school infrastructure was either washed away or immersed in water causing the immediate halt of learning activities and closure of schools.

Teaching and learning materials were destroyed, such as books, furniture and including teachers' houses. For the schools that were submerged in water and mud, all the books, desks and chairs including the buildings were destroyed. For example, at Carmushka ABC CDSS the school was completely submerged in water, destroying furniture and other teaching and learning materials as shown in the pictures:-



Source: DSE, Ministry of Education

Fig 2: Images of damaged classrooms and school furniture at Carmushka ABC CDSS in Phalombe District.



Source: UNICEF Malawi/2023/Rogers Siula

Fig 3: Part of the damaged classrooms at Chingoli Primary School in Mulanje

According to UNICEF, (2023), a leaner spent a night in a damaged classroom as the roads were washed away. Similar occurrences happened at Carmushka CDSS where school

furniture and books were immersed in water and were totally destroyed a thing which made teaching and learning come to a halt and a possible increase in the dropout rates in the affected areas.

5. Summary of findings

The effects of Cyclone Freddy have been devastating and there has been an internationally methodology on how to determine the damages with regards to economic losses, recovery needs after the disaster led by the government. The cost of the damage and recovery costs were as follows as indicated by the Education Cluster, (2022):-

1. Partial and total destruction of various education infrastructures in 624 schools in primary and secondary schools and tertiary institutions were also affected. For example, destruction of school infrastructure led to the closure of some schools which were turned into shelters for the displaced communities.
2. Over 724,800 learners (368,313 girls) including 3,656 learners with disabilities were affected. Properties were washed away, walking and hearing aids
3. The total value of the effects (damage + Loss) of the cyclone on the education sector is estimated at US\$ 42,087,535.26, with damages totalling to US\$ 30,252,764.19 and US\$ 11,834,771.075 in loses.
4. It was estimated that the education sector to recover from the impact of the cyclone, US\$ 78,147,75.81 was needed before the devaluation of the Kwacha 44%.

5.1. Factors contributing to impact and loss

Cyclones and other natural disasters can have a devastating impact on education in vulnerable communities in underdeveloped countries. Several factors contribute to the damage and loss in education during and after cyclones. According to DODMA, the education sector was hit by Cyclone Freddy at the time it was recovering from previous disasters. World Bank, (2012), indicates that over 82% of the Malawi population which is found in the rural areas and mostly poor do not have the capacity to be resilient enough to take care of learners during or after any type of natural disaster. As such, this has contributed to the high increase of costs to help the affected population to recover and be able to send learners back to school. The following factors have impacted on the going back to school campaign a non-starter. Loss of livelihoods, Psychological and emotional trauma, economic damage, health and safety concerns, infrastructure damage, displacement of students and teachers and disruption of school feeding programmes. These are the factors that have affected all the flood victims especially in the low income areas of the towns and cities and for those in the rural areas.

1. Loss of livelihoods: Families in underdeveloped countries may depend on agriculture or small businesses that are vulnerable to cyclones. When these livelihoods are destroyed, parents may prioritize immediate economic recovery over their children's education, leading to dropout rates. Psychological and emotional trauma: Cyclones can cause psychological and emotional trauma among students, teachers, and their families. The fear and stress associated with the disaster can affect mental well-being and hinder students' ability to focus on learning. Economic hardships: Vulnerable communities in underdeveloped countries often lack the resources to quickly rebuild or repair damaged schools and infrastructure. The economic impact of cyclones

can lead to a decrease in government funding for education, making it even more challenging to recover and rebuild the education system.

2. Infrastructure damage: Cyclones can cause severe damage to school buildings, classrooms, and other educational facilities. Roofs can be blown away, walls can collapse, and flooding can render buildings unusable. This disrupts the learning environment and can make it unsafe for students and teachers to continue their education. Poor workmanship and inadequate maintenance, Displacement of students and teachers: Cyclones often force people to evacuate their homes, leading to the displacement of students and teachers. This can result in a significant interruption in the learning process as students may need to relocate to different areas, and teachers may be unable to continue their work. Loss of learning materials and equipment: Educational materials, books, computers, and other teaching aids can be destroyed or damaged during cyclones. This loss of essential resources can hinder the education system's ability to provide quality learning opportunities.

3. Disruption of the academic calendar: Cyclones can lead to prolonged closures of schools, disrupting the academic calendar and causing delays in students' education. This can result in learning gaps that are difficult to bridge. Disruption of school feeding programs: Many underprivileged students rely on school feeding programs for their daily nutrition. Cyclones can disrupt these programs, leaving children malnourished and less able to concentrate on their studies.

4. Health and safety concerns: Cyclones can create health and safety risks, such as contaminated water sources, the spread of diseases, and inadequate shelter. These issues can make it challenging for schools to operate and for students to attend classes without putting their health at risk.

5. Limited access to education resources: Vulnerable communities may already have limited access to quality education resources and facilities. Cyclones exacerbate these inequalities and further limit educational opportunities for the most marginalized groups.

Therefore, addressing these challenges requires a comprehensive approach that combines disaster preparedness and response, investment in resilient infrastructure, and support for vulnerable communities. International organizations, governments, and NGOs play a crucial role in mitigating the damage and loss in education during and after cyclones in underdeveloped countries.

5.2. Recommendations

1. Policy Development

Taking into consideration of the findings of the study, there is need for development or review of new or existing policies and strategies. For example, the revised re-admission policy especially on the re-entry and go back to school campaign for those that dropped out of school to have a second chance. If go back to school, they remain vulnerable due to lack of basic needs that were destroyed during Cyclone Freddy. It is also presumably wise to include disaster preparedness strategies such as provision of teaching and learning materials to vulnerable learners or cash transfers. However, policy development cannot stand alone as it needs to be accompanied with both short and long term recommendations. For example, long term educational outcomes after the impact of Cyclone Freddy can be rehabilitation or construction of new school infrastructure to avoid more educational setbacks such as high dropout rates

due to early marriages, discontinuity of the curriculum, trauma and depression for both teachers and learners.

2. Resource Allocation

After the devastating effects of Cyclone Freddy, experience has shown that a lot of resources are given as relief on food shortages, shelter and health facilities while education recovery has been neglected in many instances. It is therefore recommended that stakeholders should pay much attention to the vulnerability of learners during natural disasters on the provision of Teaching and Learning Materials such as books, writing material, including learning shelters in form of tents, toilets and school furniture in form of desks and chairs.

3. Psycho-Social Impacts

It has been discovered that Cyclones and other natural disasters can have profound and devastating psychosocial impacts on learners, especially vulnerable populations. Many of the affected populations have succumbed to depression resulting into suicide and other antisocial behaviours. Understanding these impacts can inform strategies for addressing trauma, anxiety, and other emotional and psychological challenges. It is therefore recommended that provision of PFA for the traumatized and depressed learners and including teachers and members of the community affected by the natural disaster in the earliest time as possible.

It is in this respect to recommend government and stakeholders should train and hire counsellors for the education sector or consider employing Counsellors with experience or trained on PFA in each and every district as a disaster recovery strategy.

4. Community Resilience

DODMA need to sensitise communities to have an understanding on how education is affected by natural disasters and pandemics. Training such populations will assist in the preparedness to adapt and recover from such events. For example, provision of a full scale awareness campaign and sensitization on the construction of strong school infrastructures, such as classrooms, toilets and hostels, dykes, drains, and avoiding settling along river banks and wetlands. It is also recommended that more studies need to be conducted so that it is easier to plan for future disasters and responses. These strategies will ensure that education services remain accessible during and after disasters.

5. The study has highlighted some disparities natural disasters impact on learners from vulnerable communities. It is therefore recommended that these issues should be addressed as short and long term interventions and equity and social justice should be considered in resource allocation and implementation of activities.



Source: @Thoko Chikondi /AP Photo/Picture alliance

Fig 4

6. Conclusion

In conclusion, a research study on the effects of Cyclone Freddy on vulnerable learners in education has the potential to drive positive change in disaster preparedness, response, and recovery efforts. Hameid, (1018), observes that many areas which are exposed to natural disasters have the capability of helping stakeholders to come up with new policies that can assist reduce their vulnerability. This focus is likely to ensure support to the most vulnerable members of the population to continue their education and rebuild their lives after such catastrophic events.

With reference to the research findings on the immediate effects of Cyclone Freddy in Malawi, it can be concluded that the most affected areas were also vulnerable in terms of resources and demographic factors such as poor settlements; for example settling along the river banks for some of them, poor infrastructure for some rural schools, loss of learning

time as schools were closed and turned into camps and the unavailability of immediate PFA for the traumatized. Despite efforts by Government and other stakeholders efforts to recover all losses brought by the cyclone, there were more complications that followed after the cyclone. Such as, recovering learning time lost due to closure of schools, relocating families dispersed by the impact of the cyclone, provision of food items to the victims whose areas became impassable was done through the use of a helicopter. There is need to replicate this study so that other factors which affect vulnerable learners during and after natural disasters could be understood better as evidence has indicated that education and PFA are not considered as a priority during disasters and as such, the effects are long term especially for the vulnerable communities.

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