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The Effects of Natural Disasters on Development: A Case of Uganda

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Abstract

Purpose: To examine the effects of natural disasters on development in Uganda.

Methodology: The study adopted documentary review as a data collection technique in which data is gathered from reports from different sources, journals, magazines, newspapers, institutional archives, reports and articles which have data linked to the research being undertaken (Creswell, 2014). A documentary review checklist was employed to solicit data related to an examination of effects of natural disasters on development in Uganda from the Ministry of Disaster Preparedness and Refugees archives. This method was preferred by the researcher over other methods because was able to gain permission to access information from different department at the Ministry of Disaster and preparedness archives. In addition, using document analysis takes out the personal aspect of the effect a researcher might have on an individual during an interview.

Findings: Epidemics have been the most important public health emergency in the districts of Uganda and neighboring countries. The situation has been worsened by the outbreak of COVID-19 being first reported in Wuhan, China in December 2019 (WHO, 2019). The most threatening epidemics in Uganda include Ebola, Marburg, Cholera HIV/AIDS and Malaria but the discussion on epidemics here will be limited to Ebola, Malaria and crop and animal diseases (Mullen et al, 2020). Floods and landslides are another type of natural disasters that affect development in Uganda leaving direct destruction or impacts on assets (Botzen et al, 2019). In addition, famine is the most dominant natural disasters Uganda faces from time to time despite having the necessary conditions for food security like fertile land and a favorable climate for agriculture as a large part of the population across the country fall victim to famine regularly (Government of Uganda, 2010). Disasters continue disrupting lives, livelihood and leaving adverse effects on individuals, communities, economies and even governments and ultimately affecting development.

Unique Contribution to Theory, Practice and Policy: It's therefore recommended that disaster management should focus on mitigation against identifiable Threats. The disaster management should also create more robust systems that can withstand a variety of known and unknown shocks. The disaster management theory may be used to anchor future studies in the disaster management sector

Keywords: *Effects, Natural, Disasters and Development*

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INTRODUCTION

Disaster management and development have become major issues of debate and public policy for many developed and developing countries in recent years (Kapucu & Liou, 2014). This is because in order to achieve development, policymakers, public experts and governments have to design various development policies and plans to ensure that their economies address the current and envisaged economic challenges arising from disasters, climate change including recessions. It is argued by (Kapucu &Liou, 2014) that, while focusing on development goals, the leaders of countries have to adjust their policy priorities as well as readjust valuable resources to deal with occurrences and challenges of a variety of natural, man-made, and technological disasters. This is mainly because disasters either directly or indirectly affect development.

Disasters have become common occurrences world over shaping events, disrupting lives, livelihood and leaving adverse effects on individuals, communities, economies and even governments and ultimately affecting development. Disasters present and threaten development of many countries in the world and Uganda is no exception. According to the United Nations, over the past twenty years disasters from natural hazards have affected 4.4 billion people, claimed 1.3 million lives and caused $2 trillion in economic losses. The findings also suggest suggests that the disaster losses globally topped $100bn for three consecutive years (2010–2012), far exceeding humanitarian aid and economic losses (Oxfam, 2013).

The prevalence of disasters especially as a result of natural threats is increasing world over according to the United Nations International Strategy for Disaster Reduction (UNIDSR). The 2011 reports indicate that weather-related disasters have tripled in 30 years putting the number of people exposed to floods and tropical cyclones having doubled and tripled respectively since 1970.

Development is affected, cannot be attained and fully enjoyed by people in a place or a society which has suffered disaster or is prone to disasters. This is because disasters exert pressure on the minimum available development infrastructure and livelihood of people especially the poor and the marginalized in society with effects being more pronounced in the developing world as compared to the developed countries in terms of resilience (Oxam, 2013).

Literature suggests that disasters and their consequences may produce severe negative effects on economic and social development of communities and interrupt their planned development goals and policies. On the other hand, disaster management, especially disaster recovery provides opportunities for policymakers and community leaders to reconsider their policy priorities and with time that promotes development (Kapucu & Liou, 2014).

Uganda and its communities remain vulnerable to disasters due to a number of factors and not limited to the following; poverty, urbanization, age, gender, disability, lack of information on early warning, inadequate health care services, geographical location like those in the low lands, mountainous areas among others, malnutrition, poorly designed development policies, food insecurity, high population growth and density, conflicts, lack of resources, poor governance, corruption and inadequate disaster preparedness or mitigation among others.

This paper will focus on the common multi-causal progressive occurrence natural disasters in Uganda (See ‘Annex A’) and how they affect various themes of development including service

delivery, agriculture and food security, science technology and innovation, urbanization, manufacturing industry and trade among others.

Definition of Key Concepts

Disaster

The concept of disaster has been understood in different various ways depending on the era and the purpose of users such as Governments, United Nations agencies and Scholars among others and it is an ongoing debate. This paper will adopt the World Health Organization definition which connotes that, it is the people who matter most, and without the people we have no disaster. A disaster is an occurrence disrupting the normal conditions of existence and causing a level of suffering that exceeds the capacity of adjustment of the affected community (WHO/EHA, 2002). It is a sudden adverse or unfortunate extreme event which causes great damage to human beings as well as plants and animals. Emergency is state in which normal procedures are suspended and extra-ordinary measures are taken in order to avert a disaster and a hazard is a natural or human-made event that threatens to adversely affect human life, property ora disaster. In order to mitigate the effects of disaster and promote development there is need to adopt disaster development continuum and the relief development continuum.

Development

The concept of development has no universally accepted definition as it means many things to various people and scholars. There are various views and types of development including economic, social, political, spiritual, educational, and scientific arenas, among others as it cuts across all areas of life. This paper takes development to mean a multidimensional phenomenon ranging from high income per capita or Gross Domestic Product (GDP) as emphasized in the past and now shifting to the more current criteria of the United Nations Human Development Index (Odey, 2013) and thus embraces a maximalist or broader view involves not only technology, economy, or artifacts but a kind of growth between society based on social development and human development as well (Oduwule, 2013).

Natural disasters

A natural disaster is an event of nature, which overwhelms local resources and threatens the function and safety of the community (March, 2020). Uganda has witnessed a number of natural disasters that have culminated into loss of life and property and displacements with the following natural disasters being prevalent; epidemics, drought and famine, floods and landslides, earthquakes and hailstorms crop pest infestation, livestock and wildlife disease epidemics (Government of Uganda, 2010).

THEORETICAL REVIEW

Disaster Management Theory

Any significant discussion of disaster management theory needs to sketch out what exactly a disaster is, and what if anything human beings can do when one occurs. Like many issues relating to society and culture, a universal definition of a "disaster" tends to elude us, being instead contingent on the particular attitudes and ideals of the day. Still, a disaster can be generally understood as "a natural or human-caused event, occurring with or without warning, causing or threatening death, injury or disease, damage to property, infrastructure or the

environment, which exceeds the ability of the affected society to cope using only its own resources."

The Need for Disaster Management

The above definition has certain consequences when we speak about "disaster management" because it implies that the particular area which is being affected does not have the ability to fight through the event on its own. For many, the memory of Ebole virus western and Northern districts of Uganda, floods in eastern districts of Bududa Mbale and Rwenzuru districts of Kasese and Kilembe, recent outbreak of COVID-19 pandemic evokes just that sort of destruction. It seemed that the whole of the country Uganda was engulfed in chaos, misery and death. It is in such situations that disaster management comes into play to minimize the disruption caused by the event, and in doing so protect life and property, and civilization itself.

The Basic Theoretical Assumptions of Disaster Management

The use of the term disaster management implies the ability to "manage" a very destructive and chaotic event, as if it was akin to managing a group of steel workers, or managing your money. In reality though, it is more of mitigation against the various threats that arise due to a disaster, in order to lower the amount of total damage it can do. In some cases, where the disaster is expected, such as the possibility of a nuclear terrorist attack, steps may be taken to prevent it. Other times the disaster may be generally expected, but the time when it happens may not be known, such as in areas affected by earthquakes and hurricanes.

Disaster management therefore must always concern itself with analyzing potential threats, protecting against those threats, having contingency plans ready should threats materialize, and finally have a concrete plan or system in place to repair any damage sustained. This represents the standard theory of disaster management.

Different Theoretical Approaches

Going beyond the essence of what disaster management is, there are also different theoretical approaches that sometimes conflict with one another in terms of how best to protect against the dangers of disasters. For example, much of the contemporary thinking surrounding disaster management comes out of the management sciences discipline, which uses statistics and mathematical modeling to maximize managerial efficiency. Disaster management often makes use of such models for the purpose of determining which events are more likely than others.

The Limitations of Disaster Management

Due to resources being scarce, and time limited, it is impossible to protect effectively against every threat, so targeting efforts toward what is more likely seems quite practical. Yet the problem does not always lie with the known risks, sometimes it lies with the unknown risks. That makes it difficult to accurately predict events in the medium and long term future, making the current disaster management approach problematic.

This problem is even further compounded by unknown unknowns which are events that may be impossible to predict or anticipate, yet never the less can have profound effects on society at large. Contemporary theorist, Nassim Nicholas Taleb currently makes those types of events the focus of his work, dubbing them "black swans." According to his theory, which draws upon Chaos theory and the work of mathematician Benoît Mandelbrot, the sheer amount of variables at work within complex and dynamic systems such as an entire society, make it virtually

impossible to predict certain events that can have a revolutionary impact on the system as whole.

The Implications of Black Swans

While sometimes positive, black swans can be quite negative, as evidenced by the recent financial collapse on Wall Street, something that, according to Taleb, the risk management sciences failed to predict. In the context of this theoretical outlook, the focus of disaster management comes to rest not on mitigating against identifiable threats, but on creating more robust systems that can withstand a variety of known and unknown shocks. In many ways that approach is the opposite of what the world has been experimenting in the last decades, with an emphasis on interconnectedness, specialization and optimization over robustness and flexibility. While that approach has increased our efficiency in everything from communications to economics, it has also made various aspects of society such as financial markets, more susceptible to a systemic collapse. Thus in order to truly manage disasters, we may need to go back to systems which are more self-reliant, localized, and more capable of withstanding both known and unknown disasters. The study that was carried out focused on the disaster management preparedness on mitigating these risks and the means in place to curb the already existing effects associated with disaster. This study did not highlight how natural disasters such as floods, Ebola affect the development of these countries hence a conceptual gap that this study sought to address.

METHODOLOGY

The study adopted documentary review as a data collection technique in which data is gathered from reports from different sources, journals, magazines, newspapers, institutional archives, reports and articles which have data linked to the research being undertaken (Creswell, 2014). A documentary review checklist was employed to solicit data related to an examination of effects of natural disasters on development in Uganda from the Ministry of Disaster Preparedness and Refugees archives. This method was preferred by the researcher over other methods because was able to gain permission to access information from different department at the Ministry of Disaster and preparedness archives. In addition, using document analysis takes out the personal aspect of the effect a researcher might have on an individual during an interview. The data was then presented in form of tables and figures.

Effects of Epidemics And Or Pandemics on Development

Epidemics have been the most important public health emergency in the districts of Uganda and neighboring countries. The situation has been worsened by the outbreak of COVID-19 being first reported in Wuhan, China in December 2019. It was declared a Public Health Emergency of International Concern (PHEIC) by WHO in January 2020 and a pandemic in March 2020. World leaders have been reported to refer to the outbreak of COVID-19 as a war which threatens the lives of people and their economies. Uganda adopted public health measures to curb the spread of the corona virus including closure of learning institutions, burning of public transport and gatherings, curfew and lock down which saw the closure of Uganda's air pace to passenger flights.

The above prevention measures affect livelihood of the community which depended on small enterprises, the local manufacturers especially those in carpentry, welding among others. Cross border trade especially in the border areas, learning and school colanders disrupted those who

tested positive hospitalized and many people traumatized. The President of the Republic of Uganda in his address to the nation on 18th May 2020 indicated Uganda's strategy in the fight against COVID-19 is to avoid the sickness and survive as a country that can still function in normal ways of a semi-modern or even more modern country (Museveni, 2020).He announced that the country had lost US$1.6billion from tourism and likely to lose US$1.3billion from the remittances of the Ugandans living abroad. He cited local manufacturing was affected due to the failure to bring in raw-materials, machinery, pharmaceuticals among others.

The pandemic is reported to be resulting into increase in social ills such as domestic violence (Xinhua, 2020), mental illness, stigma, substance abuse and related social dysfunctional habits. Apart from the mental anguish caused by the lockdown, there is a challenge of stigma and discrimination against persons and health workers who are exposed to the coronavirus let alone those who have recovered (Kaboggoza, 2020).

According to World Food Program (WFP, 2020), the number of people facing acute food insecurity (IPC/CH 3 or worse) stands to rise to 265 million in 2020, up by 130 million from the 135 million in 2019, as a result of the economic impact of COVID-19. WFP's Chief Economist, Arif Husain said:

"COVID-19 is potentially catastrophic for millions who are already hanging by a thread. It is a hammer blow for millions more who can only eat if they earn a wage. Lockdowns and global economic recession have already decimated their nest eggs. It only takes one more shock – like COVID-19 – to push them over the edge. We must collectively act now to mitigate the impact of this global catastrophe."

COVID-19 pandemic continues to disrupt lives and livelihood and economies across the globe and the burden is higher on the poor and those in non-formal employment, there are increasing cases of teenage pregnancies reported in the communities and media, death and thousands held in institutional and self-quarantine a situation that continues to have negative effects on development. Through the preventive measures and research Uganda continues to build capacity especially the health sector with Uganda Virus Institute, Makerere University, Kampala Capital City Authority, National Referral Hospital Mulago and other regional referral hospitals getting better equipped given the fact that no one can seek treatment abroad.

The most threatening epidemics in Uganda include Ebola, Marburg, Cholera HIV/AIDS and Malaria but the discussion on epidemics here will be limited to Ebola, Malaria and crop and animal diseases. The effect of Ebola virus Disease to Uganda's Development. The country's proximity to the Democratic Republic of Congo (DRC) makes it vulnerable to the Ebola Epidemic and the trend is worsened by the presence of conflict and influx of refugees from DRC as well as cross border trade among others. Uganda has been credited for successfully handling the outbreaks of epidemics especially the Ebola outbreak which it has developed capacity to handle over years. (Mwangi, 2019) and (Mullen et al, 2020) believe that Uganda has focused on preventing any future outbreak and detecting cases enabling the country contain and plan develop surveillance strategies.

Ebola virus disease (EVD) was first identified in 1976 with 23 recognized outbreaks in Africa. EVD is caused by any one of four pathogenic strains of Ebola virus: Zaire (EBOV), Sudan (SUDV), Taï Forest (TAFV), and Bundibugyo (BDBV) (Redding etal, 2019). Uganda has a history of responding to Ebola outbreaks dating back to 2000 when her first case was reported

according to study conducted by Makerere University School of Public Health and The Johns Hopkins Center, see table below;

Table 1: History of Ebola Outbreaks in Uganda

Years	Species	Number of Cases	Number of Deaths	Case Fatality Rate
2000-2001	Sudan Ebolavirus	425	224	53%
2007-2008	Bundibugyo Ebolavirus	131	42	32%
2011	Sudan Ebolavirus	1	1	100%
2012	Sudan Ebolavirus	11	4	36%
2012-2013	Sudan Ebolavirus	6	3	50%
2019-current	Zaire Ebolavirus	4	4	100%

Source; Makerere University School of Public Health and the Johns Hopkins Center, (2020)

In October 2000 to January 2001, Uganda was hard-hit when 425 people were infected and 224 of those died as outbreaks occurred in Gulu, Masindi and Mbarara districts. In December 2007 to January 2008, Uganda recorded 149 cases of Ebola, 37 of those succumbed to the virus in Bundibugyo district of Western Uganda and from June to August 2012 Uganda had another outbreak which infected 24 people and 17 of those died (Mwangi, 2019).

From the above, EVD has led to loss of human lives and disrupted the normal way of life in the community and led to economic loses. Reflecting alarmism owing to the disease, as well as Ebola-related mortality and morbidity, economic activity always shrinks. These effects of the epidemic is reflected in falling sales in markets and stores, lower activity for restaurants, hotels, public transport, construction and educational institutions (ECA, 2015).

These has been the case in Uganda because of public health measures such as a state of emergency and restrictions on people's movements in the affected regions especially in Kasese district and surrounding areas bordering DRC including the Central Business Districts of Kampala and Wakiso. Service delivery especially health services for the local communities is affected, education sector crippled as schools are closed thus leading to school dropouts thus increasing literacy rates, arise in teenage pregnancies, spread of sexually transmitted diseases, suffering to vulnerable groups like children, women and the elderly thus affecting life expectancy, stigma and marginalization of the victims, their families and sometimes even health workers to mention but a few.

Ebola outbreak impacts all sectors of the economy, and can have long-lasting effects and as seen below.

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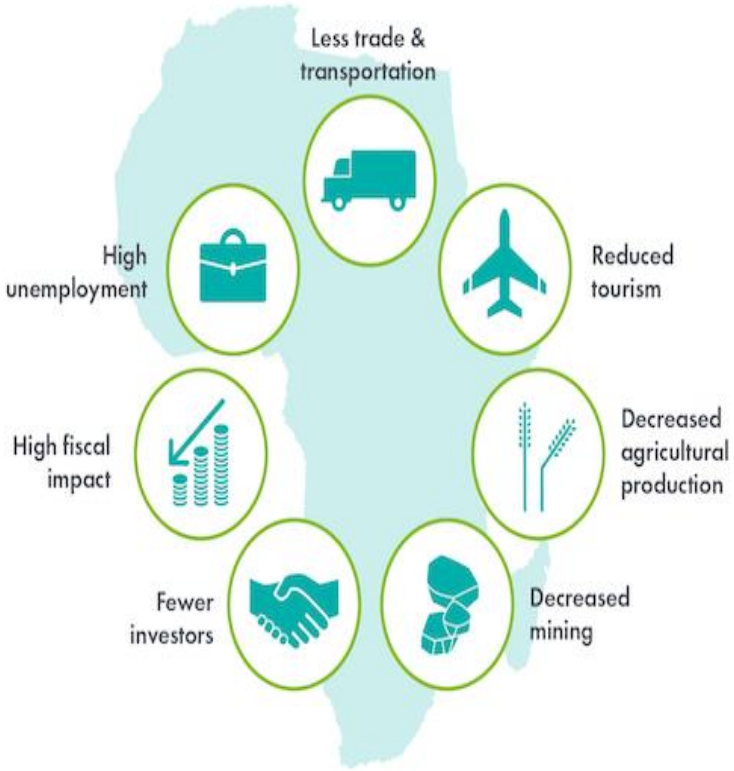

Source: Secondary Data

Figure: 1 *Shows the Impact Has Ebola Had on Parts of Africa* ***(****Mercy Corps, 2019)*

The economy of Uganda has suffered the above ranging from less trade and mobility for the small scale business to cross border trade, reduced tourism being one the foreign exchange earning sector. The district hosts three national parks namely Queen Elizabeth National Park, Rwenzori Mountains National Park and Kibale National Park which are busy throughout the year. Tourism provides alternative employment to the youthful population and is a source of local revenue to the District, which enhances the Government's social service delivery and contributes to the local economic development by providing markets for local products, improvement in housing infrastructure and the promotion of culture and traditional crafts.

Consequently, the above trend affects tourism in the East African Region as tourists using the East African Tourist visa cancel their bookings. All travelers coming from Uganda, Rwanda, Burundi, the Democratic Republic of Congo and South Sudan have to go through the screening process as a surveillance measure instituted by the Republic of Kenya (Mwangi, 2019). Agriculture notably cotton and coffee production and processing: mining, urban and cross border trade, production of hydroelectric production, industry and investment drop whenever WHO and the ministry of health confirm any outbreak in the country. Public finance is affected as revenues are lowered and increased expenditure on health puts extra pressure on fiscal balances and thus leading to external borrowing to bridge the financial gaps.

According to Aceng et al. (2020) the government of Uganda has contributed to a tune of 6.8 million USD dollars and 25.21 million USD dollars Financial Contribution to EVD preparedness by Donors. The above measures were taken by the Ugandan government effective 1st August, 2018, when four cases of Ebola were confirmed in North Kivu Province in eastern Democratic Republic of the Congo (Mahama, 2018). The above shows that the country is forgoing finances which would have used in other sectors of the economy to mitigate future possible outbreaks. Other sectors affected are public revenue leading to decrease in gross domestic product arising reduction or a slower economic activity and a contraction of the tax base in most sectors, especially in tax administration and services as local governments may fail to collect local revenue and fewer royalties collected on the dominant natural resource activities (ECA, 2015).

Gender and sex differences have a profound impact on how women and men experience, respond and recover from infectious diseases and disasters generally. Evidence reveals the disproportionate risk of infection, duration, severity and mortality between women and men from emerging infectious diseases such as Ebola (WHO, 2011) is higher among women as compared to men.

Additionally, women face higher risks with the burden of caring for their families and most times eat last and least in times of food crisis, care for injured and sick and lack access to land and other factors of production. The situation is worsened by the fact that they do not have the same access to early warning information as men largely to their socially ascribed gender roles, behavior and lower levels of literacy. Women account for 43% of the agricultural labour force in developing countries and an estimated two-thirds of the world's 600 million poor livestock keepers (FAO, 2012).

Women in Kasese for example dominate the agricultural sector, cross border trade in jewelry , 'Kitenge' African cloth fabric and extractive mining at Kilembe area and Lake Katwe were they mine salt for survival thus the epidemic leaves them vulnerable to abuse and the collapse of their businesses and thus loss of income for those who survive the disease. Epidemics and diseases continue to threaten the enjoyment of development at personal and national levels, surveillance, control and funding is crucial to the efforts to boost human and economic development.

Another prevalent epidemic threatening Uganda's Development is Malaria. Malaria is one of the most severe public health problems worldwide. It is a leading cause of death and disease in many developing countries, where young children and pregnant women are the groups most affected according to the World Health Organization's World Malaria Report 2017.

The Centre for Disease Control in 2018 estimated that 405,000 people died of malaria with the majority being young children in sub-Saharan Africa. According to Baluku (2016) "Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected female Anopheles mosquitoes. It is a parasitic infection that attacks a person's red blood cells and one of the leading infectious causes of death worldwide, especially among young children and pregnant women in Africa.''

Individuals at high risk of death from malaria reside in areas where malaria is endemic such as northern Uganda with high prevalence of pandemic malaria. A study published by the American Journal of Tropical Medicine & Hygiene showed that malaria is still the major cause of death in Uganda with approximately 70,000 to 100,000 Ugandans dying each year from the

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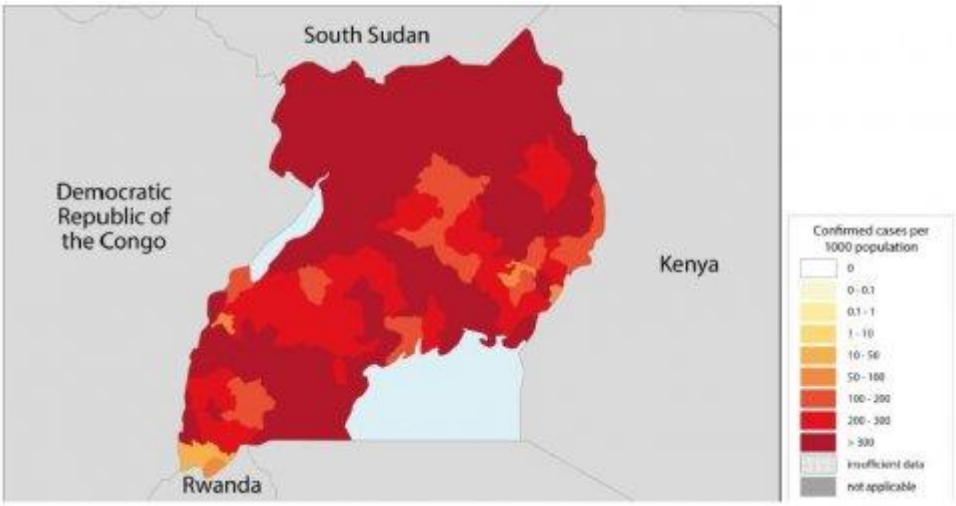
disease. Statistics from the Ministry of Health show that malaria is still the leading cause of death in Uganda, accounting for over 27% of deaths and Uganda has the world's highest malaria incidence, with a rate of 478 cases per 1,000 populations per year (Wetaya, 2016).

According to the above literature, the mortality rate remains high among children with most of them succumbing to the disease before their fifth birthday in sub-Saharan Africa Uganda inclusive. Pregnant women and travelers outside remain vulnerable to malaria leading to high maternal mortality rates. The situation is not helped by poor accessibility to health facilities let alone being equipped to handle malaria emergencies in terms of location, staffing and availability of medical supplies a gap currently being filled by village health teams. Malaria is considered a pandemic with endemic areas highly being in northern Uganda especially Lango sub region, north eastern, eastern and some parts of Central Uganda despite the fact that it is a preventable disease. Uganda Vision (2020) confirms that 90% of the country is hyper-endemic for malaria save for some high altitude regions in Western Uganda as seen in the map on the distribution of severe malaria across the country below.



Source; Secondary Data

Figure 2: WHO World Malaria Report (2018): Distribution of Malaria Cases

The above shows the malaria disease burden is enormous and country wide and this apart from mortality has other social and economic effects to individuals and the state. Individual costs to individuals and their families include expenses for travel and purchase of drugs for treating malaria at the expense of buying food or investment, lost days of work instead of one being at school, office or being engaged in other productive sectors of the economy like farming, manufacturing, mining among others, expenses for preventive measures and for burial in case of deaths. Governments costs include maintenance, supply and staffing of health facilities, purchase of drugs and supplies, public health interventions against malaria, such as insecticide spraying or distribution of insecticide-treated bed nets, lost days of work with resulting loss of income and lost opportunities for joint economic ventures and tourism with huge loses in economic growth (CDC, 2020). The COVID-19 situation with prevention guidelines like lockdown, curfew and banning of public transport and COVID-19 prevention guidelines and operating standard procedures among increased the mortality rate and health mobility burden to families and the country.

Crop and livestock epidemics are common in many parts of the country and cause social and economic loss to the country. The Disaster Management policy 2015 cites common animal epidemics include swine fever, foot and mouth, Nangana, bird flu crop diseases epidemics include coffee wilt, banana bacterial wilt, cassava mosaic, brown steak. Pests and diseases are a major problem and may lead to food insecurity. The above situation translates to crop failure, malnutrition, absolute poverty, food insecurity and loss of income to the communities involved in especially commercial farming.

With agriculture being the backbone of Uganda's economy as Ssali, (2018) urgues agriculture is the backbone of Uganda's economy. The sector employs 75% of the country's population that translates into 20% of the country's GDP and about 48% of export earnings. A study by Ministry of Agriculture, Animal Industry and Fisheries(MAAIF) revealed that Uganda recorded an annual loss in priority crops due to pests and diseases estimated at USD 35-2000 Million(bananas) USD 60-80 Million (Cassava), USD 10 Million(cotton) among others in the financial year 2018/2019 (Parliament Watch, 2018). The economy is therefore affected at both individual household level to the national economy and more is funding should be allocated to pest and vector control in animal diseases if development is to be realized and enjoyed across the board.

Effects of Floods and Land/Mudslides on Development

Floods and landslides are another type of natural disasters that affect development in Uganda leaving direct destruction or impacts on assets. Direct impacts refer to the damage to assets like property caused directly by a natural disaster, with the losses occurring at the time of the disaster or shortly thereafter including residences, businesses, productive capital, infrastructure, crops, livestock, and monetized damage including physical and mental health impacts (Botzen et al, 2019). A flood occurs when large amounts of water cover a place that is meant to be dry, Floods are seasonal and usually occur in periods of intense rainfall and el-Niño phenomena.

Landslides and mudslides are rapid movement of a large mass of mud, rocks, formed from lose soil and water. It usually follows heavy rainfall and high ground water flowing through cracked bed rocks and earth quakes and lead to movement of soils or sediments. Community settlement on steep slopes and other uncontrolled land use practices increase the likelihood of landslides and mudslides prevalence and the most affected areas for both disasters are Mt. Elgon region, Rwenzori region and Kigezi and low lying areas in urban centers of Kampala, Eastern and Northern Uganda (Government of Uganda, 2010).

Poverty, population growth and urbanization force people to continue living in unsafe areas in Uganda despite the previous incidents of flooding and landslides. A Study conducted by Uganda National Commission for UNESCO has shown that Bududa District has highest incidents of deaths from landslides. In 1997 over 66 landslides occurred in this area killing 48 people, in 2010, three hundred and sixty five people died in one landslide at Nametsi, in 2012 eight people died and many other deaths that have continued to occur in the district regarded as the most sensitive to landslides in Uganda (Uganda National Commission for UNESCO, 2019) and Kasese district in Rwenzori region has the highest overall threat of flooding in the country (Government of Uganda, 2016)

The above disasters have led to loss lives due to drowning or being buried by rubbles, destroyed public health facilities such as water sources and sanitation facilities triggering outbreaks of

water borne diseases and malaria, hence compounding community vulnerability to health hazards. There has been physical damage to structures like schools and hospitals, destruction of electricity and road infrastructure, crops, animals and submerging human settlements causing displacement. (Kajubi and Mukwaya, 2014) argue that flooding is especially a problem as it leaves roads impassable thus affecting mobility. According to them floods in 1961/2, 78/79 and 2007 saw widespread infrastructure damage, displacement and destruction of livelihood assets with the table below reflecting effects of one event in 2014.

Table 2: Shows the Major Impacts of Kasese Floods in May 2013

Impact type	Description
Mortality	10 lives lost
Water borne disease	Increased risk of water borne disease due to water supply damage
Displacement	25,445 forced from homes, Red Cross distributed 3300 shelter and NFI kits
Housing	Severe damage to almost all housing units in Bulembia district and Kilembe town
Infrastructure	
Bridges	19 bridges washed away
Hospitals	Damage to Kilembe Mines hospital, including loss of equipment
Sewage treatment	Damage to sewage treatment
Water supply	Destruction of water supply systems
Energy	Three hydropower plants on River Mubuku affected

Source; Secondary data (Kajubi and Mukwaya, 2014)

The El Nino floods in Uganda in 1997/8 for example had a mortality of 1,000 died in flood related accidents, 525 people died due to cholera related to the floods, health morbidity 11,000 hospitalized and treated for cholera, 150,000 displaced, Infrastructure damage to road infrastructure worth USD 400 million, Agriculture plantations flooded accounted for 60% fall in exports and disruption in water supply among others

Floods, landslides and mudslides continue to affect the development of the people of Uganda and the economy as well similar incidents occurring this year in Bugisu, Teso, Acholi, the suburbs of Kampala City and Kasese district after river Nyamambwa burst its banks in June this year destroying the rebuilt Kilembe hospital, bridges, roads, power production disrupting settlement, mining activity and increased mortality and health mobility thereby threatening development (See related images on the next page)

A Rubble That Left Over 50 School After Flooding in Kaseses 2020 Children Dead and 100 Missing After Landslide2010 in Bududa.

Famers Counting Loses

An Old Woman Helped in Teso to Cross a Flooded Bridge 2012

Traders Stranded in Teso

Mines and Tronder Hydro Plant in Kasese Destroyed by Floods May 2020

Residents Cross a Temporary Bridge 2014

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One of the Flooded Wards at Kilembe Hospital, 2013

Children Receive Food After 2007 Floods in Teso

Effects of Drought and Famine on Development

Famine is the most dominant natural disasters Uganda faces from time to time despite having the necessary conditions for food security like fertile land and a favorable climate for agriculture as a large part of the population across the country fall victim to famine regularly (Government of Uganda, 2010). Drought is the prolonged shortage of water usually caused by lack of rain. Drought and famine are related because crop and livestock productivity suffer in droughts and predisposes the population to food insecurity which is the severe shortage of food that may lead to malnutrition and death (Government of Uganda, 2016) and this paper adopts the World Bank definition of food security as access by all people at all times to enough food for an active and healthy life.

Though famine and severe drought are common in Uganda, soaring food prices remains a threat to development of the country. Northern, Eastern (Teso) and North Eastern (Karamoja) register high cases of mortality and health mobility cases in the country and WFP in July 2020 reported that Poor households in Karamoja and refugee settlements continue to have food consumption gap in Uganda. Karamoja region continues to suffer food shortages due to erratic rain patterns and the region heavily relies on food aid from charity organizations like World Food Programme (Jones, 2019).

The shortage of water also affects the Karamojong being a pastoral community they have lost lives and livestock during drought leading to conflict between the Karomojong and the

neighboring Iteso and Karamojong. Karamojong children constitute the highest number of homeless street children in major towns and cities of Uganda and involved in child labour including commercial sex exploitation as a result of child trafficking (UNICEF, 2015) and he report cites child labour as one of the causes for mortality among the adolescents.

To date various appeals are being made to save the starving communities in Karamoja with images of the children and elderly dominating the social, print and electronic media and office of the prime mister through the ministry of disaster preparedness and refugees distribution food to the communities in the interim. There's need to find sustainable interventions for Karamoja sub region and other drought and famine prone areas in the country.

According to the Agriculture and Nutrition 2017 fact sheet by the Office of the Prime Minister, food insecurity is the most significant cause of malnutrition in Uganda. Malnutrition is still unacceptably high in Uganda with many households in Uganda remaining food insecure and lack access to food. Malnutrition cases include chronic malnutrition (stunted growth& underweight) and acute malnutrition (anemia, Vitamin A and iron deficiency) with almost one third of children under five years and one of three women suffering from malnutrition. The above affects development as it reduces agricultural productivity as a healthy and productive workforce is needed to improve and sustain the sector to pave way for development moreover poor growth in children hinders the potential of Uganda's future work labour force. A study by UNICEF (2015) reveals that Uganda loses USD 899 million worth of productivity per year due to high levels of stunting, iodine deficiency disorders and low birth weights.

Evidence suggests that food insecurity was one of the causes that got some urban unemployed youth actively involved in the 2011/12 urban Ugandan protests also known as ''walk to work'' demonstrations as the poorest households spent more than 65% of their income on food (Kamara, 2014).

The above highlights how drought and famine as a result of food insecurity in the country have affected development in the country. The drought of 1998 affected 126,000 people, another drought occurred in 1999 affecting 700,000 people altogether and killing 115 people the drought of 2002 left 79 dead (Government of Uganda, 2016) and the impact spread to further crop failure, livestock and even internal conflict.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Disaster management and development remain major issues of debate and public policy concern for many developed and developing countries in recent years as disasters have become a common occurrences shaping events, disrupting lives, livelihood and leaving adverse effects on individuals, communities, economies and even governments and ultimately affecting development across the globe.

Disasters continue to exert pressure and threaten the existence of the available development infrastructure in the country like roads, schools, hydroelectric stations, hospitals among others thus posing challenges to the livelihood of people thus threatening both human and economic development. The ministry of disaster preparedness under the office of the Prime Minister continues to engage other stakeholders in disaster management planning to mitigate the impact

of disasters which continue to threaten lives and the economic progress the country has achieved.

Common multi-causal progressive occurrence natural disasters including human epidemics including Ebola, Malaria and the current COVID-19 pandemic, crop and animal pests/diseases, floods, landslides/mudslides and drought and famine affect human and economic development in Uganda. Efforts for surveillance, vaccination, research and control are in place with various government agencies and development partners to control disasters in the country and indeed new innovations and resilience policies have been developed in the country.

The poor, children, elderly, youth and women remain more vulnerable to disasters and suffer high mortality and health mobility rates as they have limited access to early warning information, ownership to factors of production like land, illiteracy, and weak immunity and bear the caring role in the family and society translating to lower life expectancy.

Poverty, population growth and urbanization among other factors continue to predispose people to disaster because they have no alternatives. The Rwenzori region, Mt Elgon, northern, north eastern and eastern parts of Uganda is vulnerable to most disasters and considered endemic.

In order to mitigate impacts of disaster and achieve development, policymakers, public experts and government of Uganda has to adjust its policy priorities as well as reallocate valuable resources to deal with occurrences and challenges of a variety of natural, man-made, and technological disasters(Kapucu & Liou, 2014). This can be achieved by carrying out research and surveillance on epidemics and other disasters and casual factors to provide relevant disaggregated data to support policy formulation and funding of disaster management programs in order to achieve development as envisaged in Uganda's Vision 2040 implemented through the National Development Plans.

Recommendations

Policymakers, public experts and government of Uganda need to adjust their policy priorities as well as reallocate valuable resources to deal with occurrences and challenges of a variety of natural, man-made, and technological disasters in order for the country to mitigate disaster and thereby achieve development.

There is need to take advantage of new risk assessment technologies: Conducting scientific studies under the ministry of disaster preparedness and refugees to allow for more enduring safety standards in risky areas and emerging health risks like pandemics.

There is need to take a multidimensional approach to vulnerability and the responses to it: Ministry of disaster and preparedness must be incorporated into risk management. The mapping of vulnerabilities can contribute to a greater understanding of the risk by identifying areas that require particular attention and make practical plans to settle, resettle and move communities.

There is need strengthen learning networks and disaster management structures: Ministry of disaster preparedness and refugees can employ information webs to exchange experiences and improve decision-making on disaster management as well create strong disaster management structures from the grass root to the national level.

There is need to planning for uncertainties: A risk management strategy must be quick to adapt, adjusting its requirements and specifications according to each given situation. Risk management strategies require cooperation and adaptability to ensure their feasibility and sustainability over time.

There need for creative thinking: To tackle an increasingly unpredictable context, the ministry of disaster preparedness and Refugees and District Disaster Management Committees should turn to creative and unconventional risk management strategies in order to overcome disaster risks in the country. This is because ecological limits are not bound by jurisdictions as many sources of environmental risk overflow in districts prone to disaster, which means risk management strategies must only focus on what happens within these districts limits.

There is need for robust early warning systems that can save lives: Early alert systems can prevent human and material losses if they are calibrated to respond to different types of threats and if the citizens are familiar with them.

There is need for construction of strong and modernize infrastructure such as bridges in areas where floods take place, modern health infrastructure to counter epidemics and viruses: Investment in infrastructure should not only deal with construction, but also quality control and maintenance. Ignoring the conditions of infrastructure exacerbates natural hazards.

There is need to promote a multi sectoral and agency approach to mitigate disasters within Government, CSOs and Development partners: This informed by the assertion that risk cannot be handled by a single agency and thus response should not be sectoral but multi sectoral. Therefore, everyone involved in a local government administration, central government running, community development, private sector and development partners should partake in risk management.

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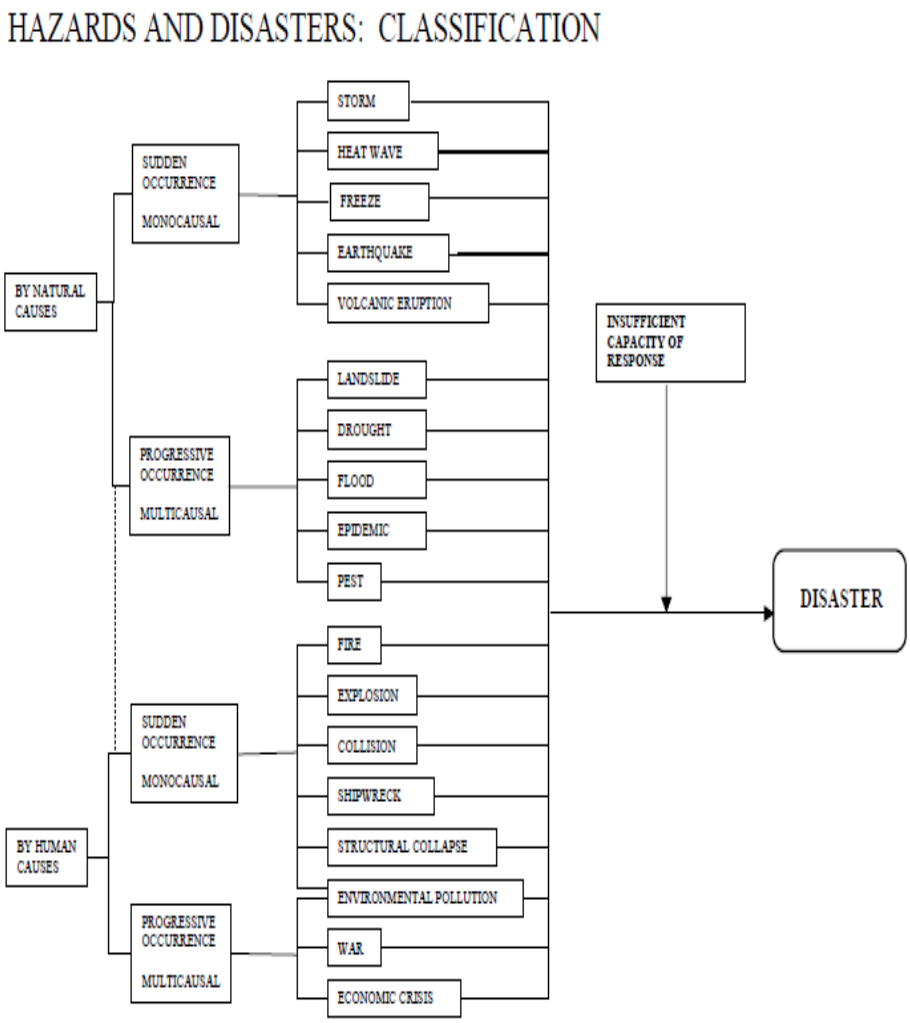

ANNEX A- Adapted from WHO/EHA Training package report 2012