

PROFILING DISASTERS IN KENYA AND THEIR CAUSES

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ABSTRACT

Disasters occur naturally or are caused by human activities. Most of the disasters experienced occur naturally with hydro-meteorological disasters leading. Human activities aggravate their occurrence and intensity. Global trends indicate that both natural and man-made disasters are on the increase and the more people are being affected. The most vulnerable are the poor who are exposed to various disaster risks. Most of these people are found in the developing countries where the level of disaster preparedness, resources and knowhow is still low. Kenya, like other developing countries of the world, has her populace vulnerable to disaster risks resulting in deaths and loss of property worth millions. About 70% of the disasters are hydro-meteorological in nature particularly droughts and floods. Other common disasters include road accidents, fire tragedies, collapsing buildings and disease outbreaks. Poverty has been referred to many as the spring board of many disasters in Kenya. Poverty has led to emergence of vices such as corruption, ignorance of law, political manipulation, inadequate resources and destruction of environment which leads to climate change. Culture and beliefs have also been associated with vulnerability to disaster risks. Therefore, to reduce the risks wealth creation will be vital for the country.

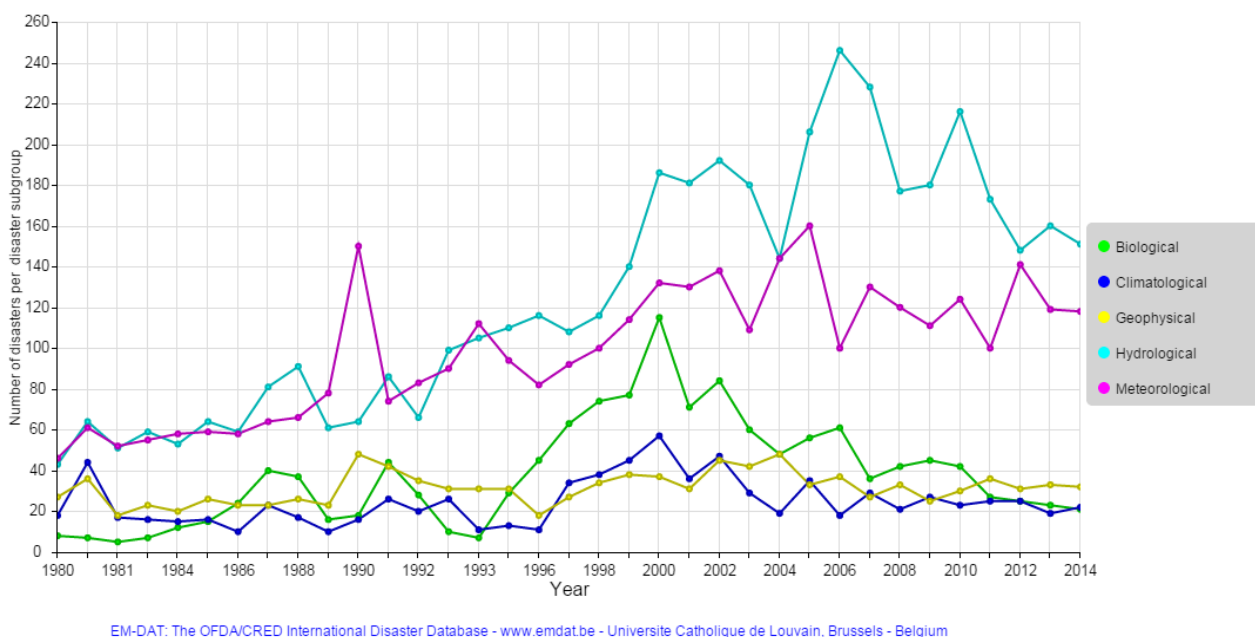
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INTRODUCTION

Disasters occur in all parts of the world ranging from being highly localized to global phenomena. According to Than (2005), Office of US Foreign Disaster Assistance (OFDA) defines a disaster as an event that kills 10 or more people or leaves at least 100 people injured, homeless, displaced or evacuated. Disasters, which are categorized based on their origin, are either man-made (anthropogenic) or natural in nature. However, natural disasters, particularly those related to weather occur frequently accounting for more than 70% of all global disasters. Such disasters include: floods, cyclones, tornadoes, blizzards and droughts. Human activities play a role in the frequency and severity of these disasters through global warming. Other natural disasters (geophysical in nature) that can be utterly devastating but occur less frequently are earthquakes, volcanic eruptions, tsunamis and avalanches. Man-made disasters occur as a result of human activities thus also referred to as anthropogenic disasters. They can be divided into technological, sociological and transportation disasters. In most cases, man-made disasters are unintentional, but, are caused due to some intentional activities. Save for a few which are intentional such as terrorism activities, most of them are as a result of accidents that could have been otherwise prevented if sufficient precautionary measures were put in place. Man-made disasters include: structural collapse, chemical leaks, spillovers, nuclear leaks, man-made fires, terrorist activities, accidents and politically instigated violence.

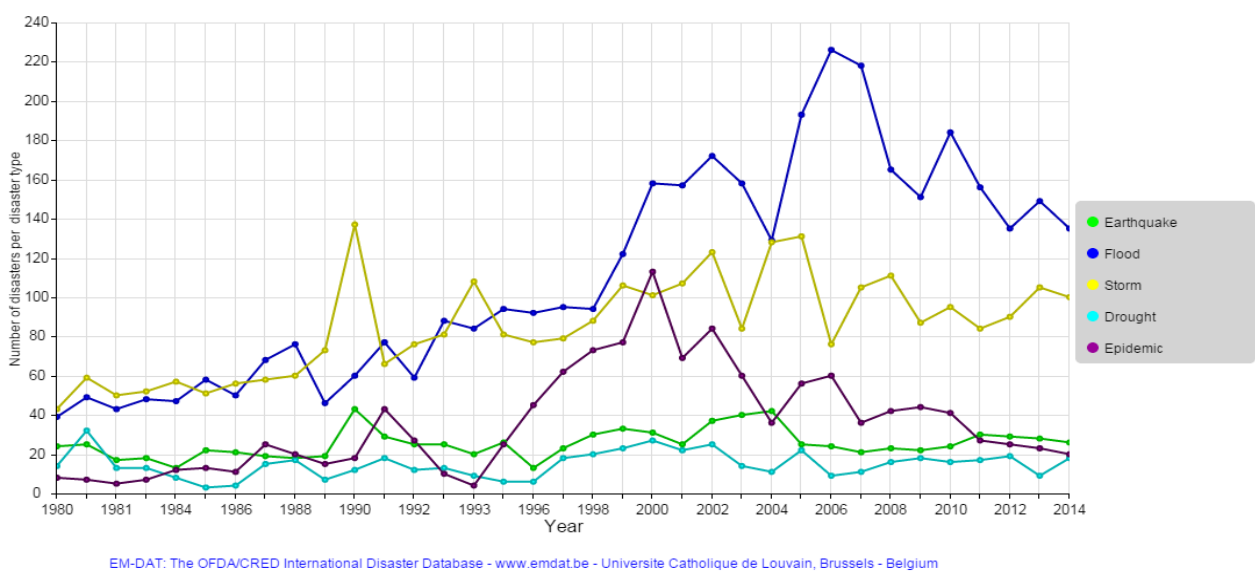
Reliefweb (2015) observes that although the frequency of geophysical disasters has remained relatively constant between 1994 and 2013, hydro-meteorological disasters have been on the rise (Figure 1). In the 1980s an annual average of about 100 hydro-meteorological disasters

were reported but this has risen to over 300 a year since 2000 (Than, 2005). Since 2000, an annual average of 341 climate-related disasters has been recorded, which is 44% above the 1994 - 2000 average and over twice the 1980-1989 average. In the last two decades (1994 – 2013), a total of 6,873 natural disasters worldwide were recorded. These disasters claimed 1.35 million lives or almost 68,000 lives on average each year while affecting about 218 million people per annum. Of all the natural disasters, flooding accounted for 43% of all recorded events and affecting nearly 2.5 billion people. Storms were the second in frequency killing more than 244,000 people and costing US\$936 billion in recorded damage making it the most expensive type of disaster (Figure 2). Although droughts accounted for only 5% of disaster more than one billion people or 25% of the global total were affected (Reliefweb, 2015). While disasters can be slow on onset such as droughts, most occur suddenly and perhaps unexpectedly causing massive loss of lives and property (Table 1).



EM-DAT: The OFDA/CRED International Disaster Database - www.emdat.be - Universite Catholique de Louvain, Brussels - Belgium

Figure 1: Global trends for natural disaster subgroups (EM DAT 2015)



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Figure 2: Global trends for various types of natural disaster (EM DAT 2015)

Table 1. Various types of natural disasters and their effects between 2010 and 2013

Date/ Year	Where	Type	Killed	Other effects
Feb - Mar 2000	Mozambique	Floods	- 800 people - 20,000 cattle	- 1,400 sq km of arable land affected - Many people left homeless
Jan 26, 2001	Gujarat, India	earthquake	20,000	- 167,000 injuries - 400,000 homes damaged
2003	Europe	Heatwave	14,802 in France	- 75% of wheat crops were lost in Ukraine - Europe forest fires
Dec 26, 2004	Indonesia, Sri Lanka, South India, and Thailand	Earthquake and Tsunami	200,000 to 310,000 people	- Billions worth of property damaged
2005	US	Hurricane		US \$81 billion worth property damage - 106,000 people injured
Oct 8, 2005	Pakistan	Earthquake	75,000 people	- Severe damage to buildings
2008	Myanmar	Cyclone	- 84,500 people	- 53,800 people missing
2008	Afghanistan	Blizzard	- 1,337 people - over 100,000 sheep and goats and 315,000 cattle	- At least 100 people underwent frostbite amputations
Jan 12, 2010	Haiti	earthquake	- Over 200,000 deaths	- 2 million people left homeless - 3 million people in need of emergency aid - 238 people missing - 164 injuries
Feb 22, 2011	New Zealand	Earthquake	185 people	- Estimated US \$16 billion worth of damages
Mar 11, 2011	Japan	Earthquake followed by tsunami	- 15 million dead or injured	- 2,814 people missing - Over 250,000 buildings damaged - 12.4 million people in need of food
2011	East Africa	Drought	--	- loss of livelihood for 9.5 million people
Nov 8, 2013	Philippines	Typhoon	- 6,000 people killed	- Over 3.6 million people displaced
Dec 2013	Philippines	Earthquake	- 222 people killed	- 350,000 people displaced - About 73,000 buildings damaged

Source: Josef (2013) and Huber (2013)

Transportation disasters dominate the category of man-made disasters in terms of loss of lives and frequency of occurrence (Figure 3). Globally, it is the leading cause of death among people aged between 15 and 29 and second most common cause of death for people aged between five and 14 years (source). Currently an estimated 1.3 million die due to road accidents globally each year and for every death up to 50 people are injured or disabled. Despite having 46% of the global vehicles in low and medium income countries, about 90% of the global fatalities from traffic accidents occur in these countries. Statistics show that if business remains as usual, death rates emanating from road accidents in low and medium income countries will double by 2020 reaching to 1.8 million and to about 2.4 million by 2030 per year. In Kenya, traffic deaths are the highest in East African region recording approximately 3000 deaths per year (WHO Global status report, 2009).

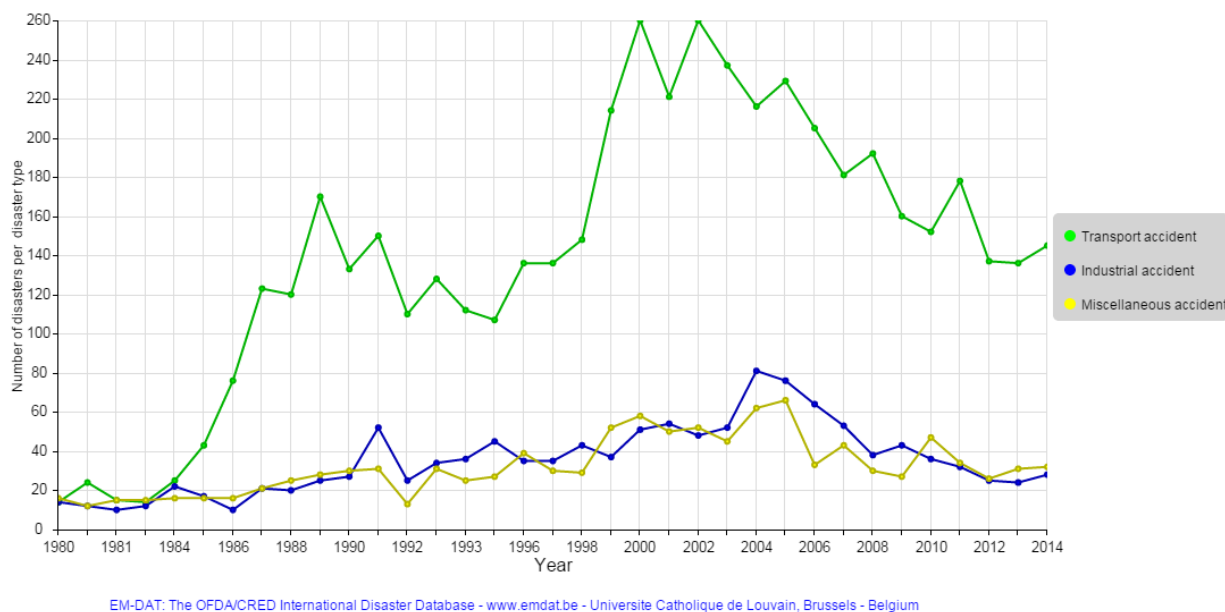


Figure 3: Global trends for man-made disasters (EM DAT 2015)

Fire disasters are very common in both developed and developing countries. They have diverse causes which are either man-made or natural. However, most of the fire disasters are man-made and include electrical faults (mostly due to overloading and short circuits), pantry area (cooking gas leaks, cooking oil, overheating of cooking medium), smoking (in/around combustible medium, falling hot ashes from the cigarette on a flammable material) and arsonist attacks. Overall, fire disasters are higher during dry period and some festive events when demand for electricity or use of fire is high. Some of the major fire disasters cause massive loss of lives such as the May 1993 toy factory fire in Thailand where 240 people were killed, the October 1995 underground fire in Azerbaijan (300 killed), the December 1995 elementary school fire in India (400 killed), and the April 1997 mina fire in Saudi Arabia where 343 people were killed (Cavallini, et al., 2007). The 2001 World Trade Centre explosion led to more than 3000 deaths while the August 2004 supermarket fire in Paraguay resulted in at least 423 deaths and 139 missing.

Generally, global trends indicate that both natural and man-made disasters are increasing (Figure 4 and 5). Unfortunately, the worst affected are the vulnerable people from developing nations. For instance, about 41% of the drought disasters were in Africa. Despite the fact that disaster impacts vary from one community to the other or from one nation to the other depending on the level of preparedness, poor communities and developing countries are the most vulnerable. Asian and Africa are leading in the occurrence of disasters.

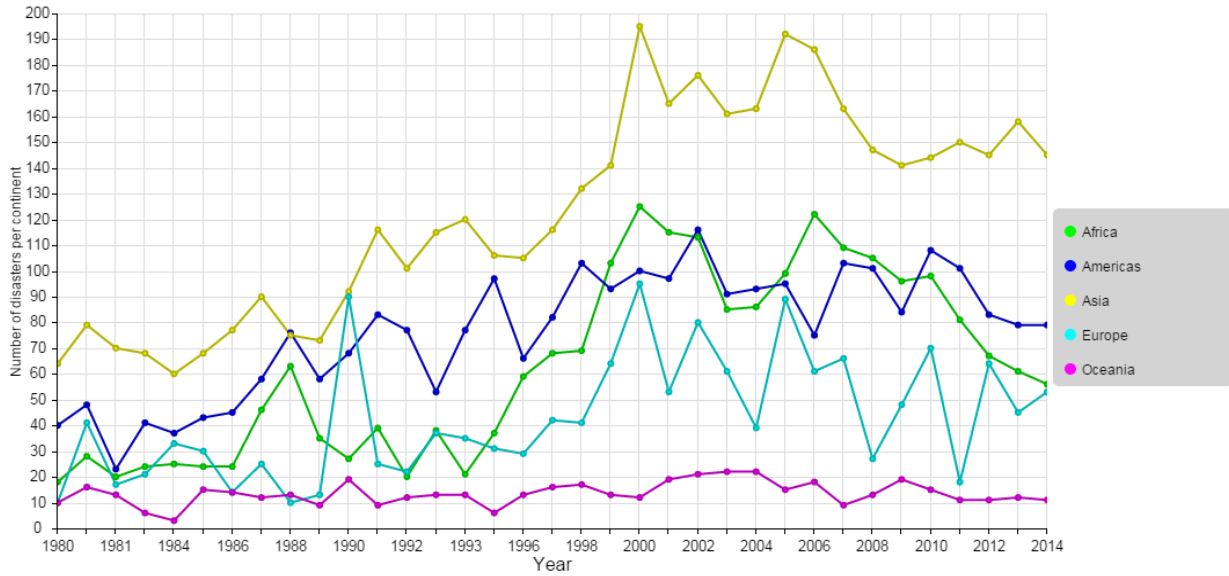


Figure 4: natural disasters trends by continent (EM DAT 2015)

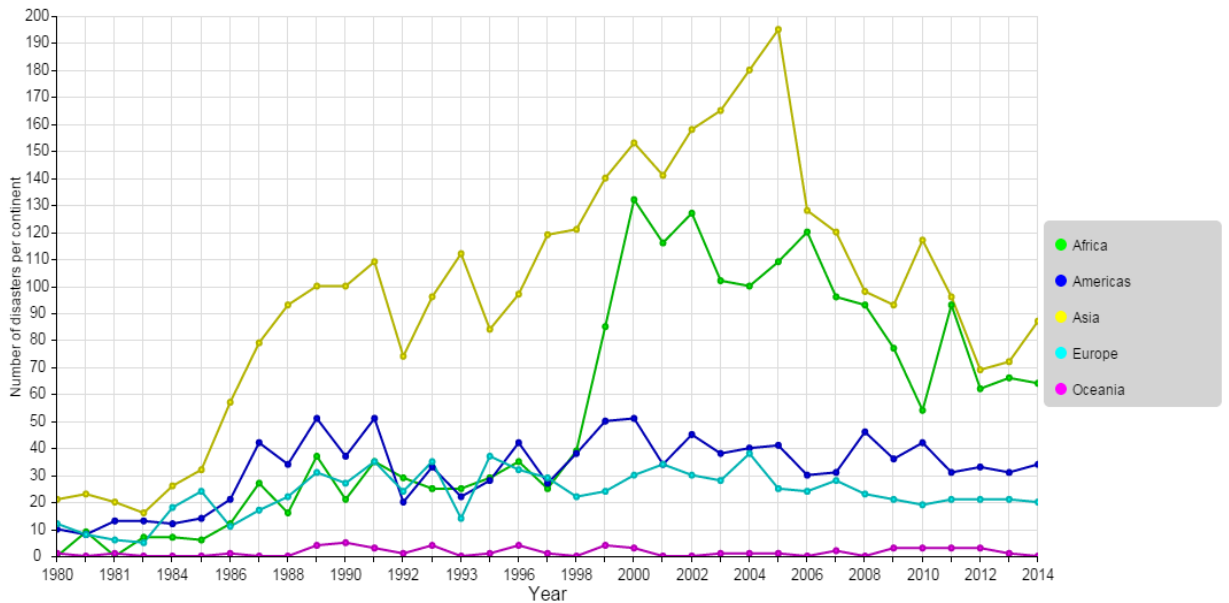


Figure 5: Man-made disasters trends by continent (EM DAT 2015)

DISASTERS IN KENYA

Over the years and like any other parts of the world, Kenya has been exposed to a variety of both man-made and natural disasters such as fires, droughts, floods, landslides, HIV/AIDS, human conflicts, drug abuse, traffic accidents, oil spill, industrial accidents and terrorism. The diversity, frequency of occurrence and magnitude of the disasters has been on the rise in the last two decades resulting in increase in number of people affected. However, over 70% of the disasters are hydro-meteorological in nature. These comprise of droughts, floods and landslides. In some parts of the country, particularly the northern corridor, droughts are a norm rather than exception. Though less frequent compared to droughts, when they occur floods displaces thousands of people and lead to loss of life and property.

Droughts

Droughts can generally be defined as a prolonged period of abnormally low rainfall. However, droughts have been defined from various viewpoints depending on the interest of the end user of climate information. Various types of droughts have been suggested and can be broadly categorized as meteorological, hydrological and agricultural drought. Meteorological droughts occur when the amount of rainfall received is below normal. It is based on the degree of dryness in comparison with the normal (average) rainfall conditions and the duration of dryness. Hydrological drought occurs following a prolonged period of precipitation shortfall that negatively impacts on water supply leading to water shortages. When precipitation shortfall results to soil water deficits affecting agricultural productivity, the drought is categorized as agricultural. As such, meteorological drought can occur without necessarily having agricultural drought. In the last two decades, Kenya has experienced several episodes of drought, both short-term (2 years and below) and long-term (above two years). Some of the notable droughts occurred in 2004 and 2008 -2011. The severe drought of 2008 – 2011 had overall effect of about Ksh 968.6 billion (Ksh 64.4 billion for the destruction of physical and durable assets and Ksh 904.1 billion for losses in the flows of the economy across all sectors) (GOK, 2012). The impact of the drought was sector dependent with livestock experiencing the largest damages and losses as shown Table 2 below.

Failure of the long rains (March–May) in 2004 caused a severe drought which led to crop failure. As a result, over 2.3 million were people in need of humanitarian assistance (Kandji, 2006). Other droughts that had significant impact in livelihoods and economy in general include the 1999- 2000 La Nina drought that led to power rationing in Kenya leading a loss of approximately US \$20 million to Kenya Power and Lightening Company (KPLC) and serious disruption of economic activities. The national gross domestic product (GDP) contracted by about 0.3% as the aftermath of the drought. By June 1999, an estimated 1.7 million people were in dire need of food assistance with the figure rising to 4 million by December 2000 (Duran, 2005). The drought was declared a national disaster. Table 3 shows recent droughts and the associated impacts in Kenya

Table 2. Sectorial economic impact of 2008-2011 drought

<i>Sector affected</i>	<i>Impact (USD)</i>	<i>% impact</i>
Agriculture	1,453.8	12.5
Livestock	8395.3	72.2
Fisheries	49.9	0.43
Agro industry	85.9	0.74
Health and nutrition	137.3	1.2
Education	47.8	0.41
Energy	388.8	3.3
Water and sanitation	1058.8	9.1
Environment & tourism	9.1	0.07
<i>Total</i>	<i>11,627.2</i>	<i>100%</i>

Source: GOK, 2012

Table 3. Recent droughts and their effect in Kenya

Year	Disaster type	Area of Occurrence	Effects
2012	Drought	Widespread	3.75 million people in dire of food by July 2012
2011	Drought	Garissa, Isiolo, Wajir, Mandera, Mombasa, Marsabit, Nairobi, Turkana, Samburu and Turkana Counties	4.3 million people were in dire need of food
2009	Drought	Widespread	70-90% loss of livestock by Maasai pastoralists
2007-08	Drought	widespread	4.4 million people affected, 2.6 million people at risk of starvation, up to 70% loss of livestock in some pastoral communities. 3.5 million in need food by September.
2006	Drought	Widespread	40 human lives lost and about 40% cattle, 27% sheep and 17% goats lost 2.5 million people close to starvation. Declared a national disaster
2005	Drought	Widespread	About 3 million people in need of relief aid for 8 months to March 2005
2004	Drought	Widespread	70% loss of livestock in some pastoral communities
1999-2001	Drought	Widespread	4.4 million people affected

Flood and Landslide

Floods, just like droughts, are recurrent phenomenon affecting many parts of the country. However, the worst affected areas are the low-lying swampy tracts in Lake Victoria Basin namely Budalangi and the Kano Plains and the Tana River floods. The subsequent effects are loss of lives, infrastructure, food reserves and erosion. In recent times, episodes of urban flooding have been observed in Nairobi City and Narok town (Figure 6).



Figure 6: Flooding in Narok town

Occasional floods are also experienced in drylands where heavy storms fill up the dry river valleys causing flash floods downstream. Such episodes are common in Turkana, Samburu and eastern Kenya. The 1997/98 El Niño floods remain the most remarkable floods in the history of Kenya. Over 1.5 million people were affected in different parts of the country. Like floods, landslides are triggered by heavy rainfall and are common in hilly areas of the country. They result from the weakening of slope stability due to increased soil moisture. They are common in central and western Kenya. Landslides are not frequent and are highly localized affecting a handful of people. However, they lead to loss of live and livelihood source of the affected families. In 2000 for instance, about 2000 people were affected by landslides that occurred in Meru Central, Murang'a and Nandi. Five deaths were reported during the 2004 Landslides in Nyeri, Othaya and Murang'a. Table 4 shows some recent floods and landslide disasters in Kenya.

Table 4. Recent floods and landslides and their effects in Kenya

Year	Disaster Type	Where	Effects
2015	Floods	Widespread	15 people killed and thousands displaced Infrastructure destroyed
2014	Floods	Narok Town, Nairobi City	Property and infrastructure destroyed
	Landslides	Muranga County	
2013	Floods	Tana River County	82,000 people displaced
	Landslides	Nyeri, Murang'a, Kisii	2000 people displaced
2012	Floods	Nyanza/Western	84 people killed, 30,000 displaced About 280,000 people affected countrywide
	Landslides	ElgeyoMarakwet County	10 people killed, hundred displaced
2010	Floods	Budalangi, Tana river, Turkana	73 killed, 14,585 people affected
	Landslides	Bududa, Mt Elgon, Samburu	3000 people buried, property destroyed
2008	Floods	Rift valley, Kitale, Makueni, Mwala/Kibwezi, Bundalangi	24 people killed with 2396 affected
	Mudslides	Pokot central	11 people killed
2007	Mudslides	TaitaTaveta County	3 dead
2006	Floods	Widespread	7 deaths, 6,500 people displaced
2005	Storm	Merti – Isiolo	4,000 people cut-off between Isiolo and Merti for 7 days
2004	Floods/ Land Slides	Nyeri/OthayaKihuri	5 people dead
2003	Floods	Nyanza and Westen, Tana River Basin	60,000 people affected by severe floods
2002	Floods	Nyanza, Busia, Tana River basin	150,000 people affected
	Landslides	Meru Central, Murang'a, Nandi	2,000 people affected
1997-98	El Nino Flood	Widespread	1.5million people affected

Fire Disasters

Fires accidents have the most diverse causes of all the disasters. As a result they occur frequently ranging from damage of a single item to large areas such as forests or agricultural lands. Wildfires are more frequent in ASAL areas. The extent of damage however, depends on the type of fire (nature of the material ablaze), the meteorological conditions (wind) and the effectiveness of the intervention. As long as fire is under control, it is very useful to man but once out of our control, it causes massive destruction. Kenya has not been an exception to fire disasters. For instance, in 1977, an electrical fault in the telephone system at the original African Heritage House in Nairobi sparked an inferno that destroyed the entire gallery, workshops, stores, the restaurant and the garden café. In addition to the huge damage, the loss of preserved African culture was incalculable. One of the worst fire disasters in the 1990s was the Langoni fire in Lamu that occurred in 1982. This fire, though led to very few deaths, it left 4, 000 people homeless and destroyed businesses. In 2009, Lamu had also another fire incident that rendered 80 % of entire settlement burnt and left over 2,500 people homeless.

Fire disasters have also been recorded in learning institutions some of which are as a result of arsonist attacks or electrical failure. For instance, arsonist started fire in Bombolulu Girls High School in Mombasa in 1998 destroying property and killing 25 girls. In March 26th 2001, the Kyanguli Mixed Secondary School arson fire shocked many in the country. A school dormitory was set ablaze by arsonists leading to loss of about 68 students. Though the dormitory had two exits, by the time of the tragedy, only one exit was operational. The other exit was locked and keys misplaced. In January 28, 2009, an inferno caused by an uncovered generator razed down Nakumatt Downtown Supermarket in Nairobi leading to loss of tens of lives and hundreds of millions worth of property (Figure 7). During the incident, the guards and the management locked the main doors to prevent looting. This led to more deaths. After the inferno at least 29 people were confirmed dead with 47 missing with a likelihood of them being charred beyond recognition. Ironically, the supermarket was located just a hundred meters away from Nairobi's only public fire station.



Figure 7: Nakumatt Downtown fire tragedy in Nairobi

In February 1, 2009, three days after the Nakumatt Downtown Supermarket, a road accident at Sanchang'wan shopping centre in Rift Valley that involved a fuel tanker led to loss of 120 lives. This was after residents of Sanchang'wan rushed to siphon off some of the 47, 000 liters of fuel the fuel tanker was ferrying while others stood at a safe distance spectating. Unfortunately, when the tanker exploded, the flames trapped those who were siphoning and

the spectators. Later in the year in August, a similar disaster occurred in Kapokyek village near Kericho killing about 45 people.

The Sinai Pipeline Fire tragedy occurred in Mukuru-Sinai slum in Nairobi in September 12, 2011 when a failed gasket at a nearby fuel tank leaked about 19 million cubic meters of petrol into an open storm drain that flowed right through the slum. The inferno razed hundreds of slum shanties and killed about 120 people with 116 people being hospitalized. The exact total number of deaths remains as estimates due to the congestion in the slum. In March 2009, forest fire razed about 30,000 hectares of Mau forest in a single arson attack. Later in January 2012, Kiptagich area of Western Mau Forest caught fire destroying approximately 1500 hectares.

Structural collapse

Disasters associated with collapse of buildings have been on the rise in the recent past in Kenya becoming death traps and causing huge financial losses. For instance, in January 23, 2006, a five-storey building under construction in the central business district in Nairobi, Kenya collapsed killing 11 and trapping over 200 workers under the debris. Other incidences involving collapse of buildings include: October 2009 and January 2010 in Kiambu town, June 2011 in Embakasi, June 2011 in Langata Southern Bypass, September 2011 in Luanda, June 2012 in Mlolongo along Mombasa Road (5 people killed and 10 injured), January 2013 in Nairobi CBD (11 people killed and 200 trapped), December 17, 2014 in Nairobi (1 person killed) and May 12 2015 in Mukuru Fuata Nyayo area of South B (9 people killed). Such disasters occur due to structural failure.



Figure 8: Collapsed buildings in South B, Nairobi and Kiambu respectively

Transportation accidents

In Kenya, road accidents are the third leading causes of death after malaria and HIV/AIDS. With over 3,000 deaths annually from road accidents (Figure 9), the World Health Organization (WHO) has placed Kenya as among the countries with the highest rate of accidents globally and the leading in East Africa. Ironically, like other developing countries, Kenya has a low motorization level of about 1.3 million vehicles. About 85% of the road accidents are caused by human factors, 11% is associated with vehicle conditions while 4% are as a result of the environment. Speeding and drunken driving are the major human factors that lead to road accidents. As such, most accidents occur on Saturday when most people take alcohol. According to NTSA, Wednesday is the safest day to travel on Kenyan roads recording an average of 200 victims. An average of 400 people gets involved in accidents on Saturdays and 320 on Sundays, Tuesdays and Fridays. All in all, majority of the accidents occur between 6 and 10 pm. In addition to speeding and drunken driving at this time of the

day, reduced enforcement of traffic rules and pedestrians crossing at undesignated areas has been the major cause of the accidents.



Figure 9: A wreckage of a bus involved in an accident on Kenyan roads

Despite efforts by the government to reduce road accidents, the number seems to be increasing causing more fatalities and loss of lives. Statistics indicate that more than 13,000 road accidents occur annually, resulting in an average of about 3,000 fatality and more than 11,000 injuries. The most vulnerable to road accidents are the low to middle income population who largely use public service vehicles and two-wheeled means of transport which are the biggest cause of road deaths in Kenya. Statistics indicate that about 46% of the road accident deaths are from the pedestrians, cyclists and riders of motorized two wheelers and their passengers. For instance, in May 2010, about 144 pedestrians died from road accidents while about 189 sustained serious injuries. In Kenya today, *bodaboda* accidents is an emerging disaster. Out of 100 people involved in *bodaboda* accidents, three lose their lives. On average, at least 500 people die of *bodaboda* accidents annually accounting for about 14-16% of total number of road fatalities. In 2012 for instance, deaths emanating from *bodaboda* accidents were 415. High accident rates can be attributed to lack of knowledge of highway codes, carrying more than one passenger (as prescribed by the law), improper overtaking, failure to comply with safety regulations and speeding. With these accidents, the socio-economic loss is huge especially in health and labour sectors. Overall, estimates show that Kenya loses approximately 45 billion shillings excluding the actual loss of life as a result of road accidents Table 5 shows some of the notable road accidents and resultant deaths.

Table 5(Part-I). Some of recent road accidents in Kenya

Date/ Year	Type of accident	Where	Deaths	Injured
Jan 7, 1998	Bus plunges into Nithi River	Meru	58	42
Mar 29, 2000	Two buses collide	Kericho	74	
Nov 7, 2000	Bus flew over a bridge	Meru	45	35
Aug 15, 2001	Minibus plunges into Mwanja River	Machakos	23	
Apr 14, 2007	Matatu overturns and bursts into flames	Garissa	15	61

Table 5(Part-II). Some of recent road accidents in Kenya

Date/ Year	Type of accident	Where	Deaths	Injured
Feb 4, 2012	Two mini buses collide	Kisumu-Kakamega highway	26	
2012	Bodaboda accidents	Countrywide	415	1,984
Aug 29, 2013	Bus accident	Ntulele, Narok	42	44
Dec 24, 2013	Collision of two buses	MtitoAndei	18	67

Disease Outbreaks

Episodes of cholera, malaria and Rift Valley fever outbreaks are reported in Kenya. HIV/AIDS is pandemic and has been declared as a national disaster by the Kenya government. Disease outbreaks in Kenya are closely associated with extreme climates. More often than not, outbreaks occur during heavy rainfall and droughts periods. Table 6 shows some of the disease outbreaks in Kenya.

Table 6. Recent incidences of disease outbreaks and their effects in Kenya

Year	Where	Disaster type	Casualties
2015	21 counties in Kenya	Cholera outbreak	- 131 dead - 6529 cases reported
2008	Nyanza, western, NEP, Wajir district, Migori, Suba, Homa Bay, Siaya, Bondo, Kisii, Naivasha&Nakuru	Cholera outbreak	- 122 dead
	Bungoma West district	Waterborne diseases	- 11 dead
2007	Siaya/Suba	Cholera outbreak	- 10 dead
	Countrywide	Measles outbreak	- 41 dead
2006	Kacheliba and Alale Division in West Pokot	Meningitis outbreak	- 20 dead - 70 cases reported
2005	Kitui, Makueni and Machakos	Food poisoning	- 13 dead - 66 cases reported
2004	Makueni, Machakos, Kitui, Embu, Mbeere and Thika districts	Food Poisoning Aflatoxin	- 123 dead - 333 affected
	Bungoma	Leptospirosis	- 12 dead - 859 affected

Terrorism Attacks

Incidences of terror attacks in Kenya are not new phenomena. However, the frequency of recent terror attacks has brought into the limelight the magnitude of the attacks. A notable sharp increase has been witnessed since the Kenya Government launched a military offensive against Al-Shabaab militants dubbed as "Operation Linda Nchi" in October 15, 2011. Like the *bodaboda* (motor cycle and bicycle) accidents, terror attack is now an emerging disaster. It is estimated that since 2012, the Al-Shabab terror groups have claimed lives of over 600 people in Kenya and destroying millions worth of property (Figure 10). Table 7 show some terror attacks in Kenya and fatalities caused.



Figure 10: The 1998 bomb attack of U.S. embassy in Nairobi

Table 7(Part-I). Some of the terrorism events in Kenya and their effects

Date/ year	Nature of the attack	Causalities
Aug 7, 1998	Al-Qaida terrorists attack U.S. embassy in Nairobi	15
Nov 28, 2002	Terror attack on Israel owned Paradise Hotel in Kikambala, Mombasa	None
Nov 28, 2002	Terrorists fired a missile at an Israeli Arkia Airlines jet but missed their target	None
Oct 24, 2011	Al-Shabaab launches a series of low-grade terrorist strikes in Nairobi	2
Oct 24, 2011	Attackers hurl grenade at a commuter bus stage in Nairobi	1
Oct 27, 2011	Al-Shabaab militants attack a vehicle transporting examination material in Lafey, Mandera	4
Nov 5, 2011	Two grenades hurled at the East African Pentecostal Church in Garissa town	2
Nov 24, 2011	Twin grenades attacks at Holiday Inn hotel and a shop in Garissa	3
Jan 11, 2012	Suspected Al-Shabaab militants kill six people in Gerille camp, Wajir District and kidnapped two government officials.	6
Mar 10, 2012	Four hand grenades hurled at Machakos bus station in Nairobi	6
July 1, 2012	Twin church attacks in Garissa town	17
Sep 21, 2013	Armed gunmen attacked the Westgate Shopping Mall in Nairobi	69
June 16, 2014	Suspected Al-Shabaab militants launched a major assault on a police station, hotels and government offices in Kenyan coast	48
Nov, 22 2014	Gunmen attacked a bus traveling from Mandera to Nairobi	28
Dec 2, 2014	Suspected Al-Shabaab militants attacked and killed a further 36 quarry workers	36
June 15, 2014	Suspected Al-Shabaab militia attack Mpeketoni village in Lamu County	50
April 2, 2015	Suspected Al-Shabaab militants attacked Garissa University College	147

The most memorable attacks of our time are: the 1998 Al-Qaida terrorists attack U.S. embassy in Nairobi, the Westgate Shopping Mall in Nairobi and the Al-Shabaab militants' attack of Garissa University College.

FACTORS INFLUENCING DISASTERS IN KENYA

Whereas disasters attack when least expected, the frequency of both natural and man-made disasters can be attributed to human causes. This include: increasing poverty levels, corruption, lack of political will, beliefs/ culture, lack of adequate resources and blatant ignorance of the law. The main natural factor influencing occurrence of disasters is climate change.

Poverty

Poverty is the spring board of all disasters in the country. A combination of falling household income, rising cost of living and poor governance have worked to escalate poverty in Kenya where about 46% live below poverty line. In Nairobi for instance, about 60% of residents live in slums with no or limited access to even the most basic services. This makes the poor the most vulnerable to disasters. To eke a living, the poor work in very dangerous environment that are prone to disasters. In most cases, they dash to accident scene with an aim of looting. For instance, the need to siphon fuel in Sachang'wan oil tanker tragedy led to loss of lives. HIV/AIDS prevalence rate is common in poverty stricken areas. A study by Huho (2005) on socio-cultural and economic impacts of floods in Budalangi revealed that, the area having a semi-arid climate, residents of the flood prone area did not want to be evacuated since they will lose on relief assistance. More so, the vulnerable poor are easily corrupted by the rich minority, particularly the politician dividing them along tribal lines.

Corruption

Even though corrupting is not a stand-alone cause, it cuts across all other causes increasing the frequency and severity of the disasters, may it be natural or man-made. Opinion polls in Kenya have consistently indicated corruption as the leading cause of underdevelopment. Bribing of traffic officers by rogue motorists and cyclists has largely contributed to ever increasing road accidents. Corrupt government engineers have in various occasions authorized construction of sub-standard buildings which eventually collapse. Corruption on issues of disaster management such as procurement and distribution of relief food to hunger stricken people have aggravated problem of malnutrition and starvation in drought stricken areas.

Lack of political will

The politics of Kenya are based along tribal lines causing hatred amongst citizen. As a result, Kenya has experienced politically instigated violence which arises every election year since 1992 with exception of 2013 elections. The worst violence occurred in 2007 where over 1300 lives were lost. Political incitement against people evacuating conservation areas have led to increased destruction of forests such as Mau. An example of such incitements was a statement by the former President Moi in 2009 that "Rain comes from the sky not forests." The aftermath of continued destruction has been increased runoff and occasional flash floods as experienced in Narok town. The former Prime Minister Raila Odinga attempts to conserve Mau forest between 2007 and 2013 were thwarted by politician from the communities to be evicted. The 2015 National Youth Service politics that led to demolition of sanitation facilities in Kibra, Nairobi is a sure way of triggering diseases.

Ignorance of law

The major disasters associated with ignorance of law include road accidents and structural collapse. Statistics indicates that most *bodaboda* transport accidents result from blatant disregard of traffic rules and lack of safety regulations. Whereas it is a requirement that the rider and the passenger wear reflective jackets and helmets, over 70% of the *bodaboda* users do not adhere to these safety regulations. In most cases, the cyclists carry more than one passenger. Drunk driving and over speeding has been the major cause of road accidents both to motorists and cyclists. In addition, more often, there are warnings over an upcoming drought /floods given by meteorological department, but seldom do people heed.

Inadequate Resources

Coupled with increasing human population, low technology, inadequate infrastructure and human resource are some of the resources influencing the occurrence of disasters. During the Sinai fire tragedy for instance, limited knowledge in the management of fire disasters among the community members hampered their efforts to rescue the victims. Poor roads hindered accessibility to Sinai fire site. The tragedy was also compounded by poor coordination from the response teams. The 2009 Mau forest fire went out of control in most affected areas due to lack of firefighting equipment. In order to reduce the impacts of droughts and flooding, it is necessary to have relevant instruments that aid in early warning signs. It is important for the government to invest in modern weather forecasting instruments.



Figure 11: Firefighting using twigs in Mau forest

Beliefs and Culture

Traditional beliefs and culture can be associated with some of the disasters. For instance, the practice of wife inheritance and cleansing ceremonies among some communities in Nyanza and western Kenya has led to spread of HIV/AIDS. In addition, the belief that sleeping with a virgin girl will cure HIV/AIDS has also led to new infections in Nyanza. Attachment to ancestral land has thwarted the efforts of relocate communities living in areas prone to floods in Nyanza, western and coast. Similarly, the Ogiek community living in the forest has resisted relocation by the government.

Climate Change

Disasters associated with extreme weather events linked to climate change account for up to 70% of all disasters in Kenya. These disasters cancel progress made on poverty reduction exposing people to disaster risks. Droughts are the most common leading to loss of livelihood source. However, only few deaths are reported emanating from droughts. This is because droughts are slow in onset and therefore people seek for coping strategies. More deaths are

reported as a result of floods Vis a Vis droughts. Landslides occur as a result of heavy rains and are common in central and western parts of Kenya.

CONCLUSION

Disasters are common occurrence in Kenya with their frequency and the number of people affected increasing. As much, as the number of the affected people can be attributed to increase in human population, human related activities have exacerbated the frequency of occurrence. Poverty is the spring board of increasing disasters as it leaves the poor citizens vulnerable to factors that trigger disasters such as corruption, political manipulation, destruction of natural resources that influences climate change, inadequate fixed and human capital to combat disasters and ignorance of set out laws. Therefore, to reduce and mitigate disasters, poverty reduction is critical. This can be achieved through elimination of corruption and embracing national values.

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