

Socio-Economic Factors Affecting Response to Floods By Humanitarian Organizations In Lower Kano Plain Of Nyando Sub-County, Kenya

¹ Shadrack S. Kipsang *, ²Dr. Ruth Simiyu, ³ Ombachi N. Kipkorir

^{1, 2, 3} School of Disaster Management and Humanitarian Assistance,
Masinde Muliro University of Science and Technology, Kakamega, Kenya,
P.O.BOX 190-50100, Kakamega, Kenya

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ABSTRACT

Floods are one of the extreme disaster events which result in widespread social disruption, trauma, and extensive property damage, loss of life and social economic loss. Several humanitarian organizations including KRCS, USAID, CARE, Handicap International, JICA and OXFAM have always come in handy to help the victims through various interventions. The purpose of the study was to investigate socio-economic factors affecting response to floods by humanitarian organizations in Lower Kano Plain of Nyando Sub-County, Kenya. The sample sizes for the study were, chief, and 8 CBO chairpersons and 388 household heads. Combination of simple and stratified random sampling technique was used to select respondents, while purposive sampling techniques was used to select area chief and 8 CBO chairpersons. The data collection instrument was questionnaires, interview schedules, focused group discussion, observation checklist. Secondary data obtained through printed, published and unpublished documents, and disaster management reports. The data collected was both quantitative and qualitative. The study found that floods in the region were also attached to some economic benefits such as fishing that was taking place during floods and so residents in flood prone areas could not move away from the flood prone areas. There were also inadequate availability of resources such as money to relocate to safer lands and this could be attributed to low economic status of the majority of the respondents. Most of the respondents could not relocate to safer grounds during floods because whatever was given by Humanitarian Organizations was so small that it could not sustain their needs during floods. On challenges facing the humanitarian organizations during flooding, the study found that poor communication between the managers and the field workers and between the managers themselves could hamper good operations by the organizations. The study also found that relief supplies into the organizations warehouses was fair since there were many challenges encountered during transportation of the relief supplies like poor donor supply due to lack of communication and planning and poor road networks. Poor roads were the major cause of delays of relief supplies into the organizations warehouses due to fewer efforts by the Government to construct and repair the roads infrastructure in the region. The government, through various ministries concerned with community development and disaster management, should design sustainable mitigation measures such as economically empowering the communities to minimize the impact of floods and the associated risks not only in Lower Kano Plain area but also in other flood prone areas. It emerged from the study that social factors discussed herein had an influence on vulnerability to flood risk. There is need for the government to prepare and mitigate the consequence of floods by assisting the most vulnerales like orphan, women's, the aged and widows to build flood proof/resistant house or houses rising above the ground. The study found out that quite a number of challenges are faced by relief aid workers during relief aid distribution in Kenya. Therefore, this study recommends that employee-manager relationship should be enhanced to enable the organization to achieve the long term goals. This would be achieved by managers adopting organizational culture that is open to communication and democratic style of leadership. Bottom up decision making culture should be encouraged by the management. The study found out

that there was poor communication between employees and top level management. Therefore, the study recommends that managers need to involve workers in decision making and empower them through trainings.

Keyword: House-holders livelihoods, Humanitarian Organizations, Challenges, Socio-Economic, resilience

I. INTRODUCTION

Regular floods are part of people's lives in various regions of the world, recurring with varying magnitudes and frequencies to which people have adapted for centuries. Usually a flood is an overflow of water that submerges land, low-lying villages and towns or an unusual condition affected by inflow of the tide. Flooding may occur as an overflow of water from water bodies, such as a river or lake, or sea or large natural water basins, or it may occur due to an accumulation of rainwater on saturated ground in an aerial flood (McEntire et al., 2010). Floods are experienced in the lower course of the Nyando River covering approximately 50% of the Nyando district. (Mungai et al., 2004:43). Over 5,000 people are affected every year by floods in Lower Kano Plains. This generally happens during the long and short rains, especially after spells of intense and heavy rain-falls in the catchments of the rivers. The average annual damage is about US\$ 850,000 with annual relief and rehabilitation measures costing US\$ 600,000 in the Kano Plains (Eitel & Ochola, 2006:1). Major floods documented in the area occurred in 1937, 1947, 1951, 1957-1958, 1961, 1964, 1985, 1988, 1997-1998, 2002 and 2003 (Ongwenyi et al., 1993:118-119; Eitel & Ochola, 2006:1).

Thousands of flood-affected families in Kenya have been curtailed by lack of a national disaster management body, poor coordination, poor rural infrastructure and other challenges. Many Kenyans had been displaced by floods, according to a recent Kenya Red Cross Society (KRCS) report. The floods, caused by heavy rains in mid-March and early April, have affected areas in Kano plains in Nyando region. Disaster response in Kenya is often inadequate and characterized by a failure to act on early warnings. Further, what the government is doing now in the name

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of disaster response is neither effective nor adequate. I am yet to see a special kitty set to help the disabled, pregnant women, children and the sick. The bulk of what they are doing is only focused on distribution of food (Adato, and Meinzen-Dik, 2002).

Leading international non-governmental agencies work through volunteers to fight flood in Kenya including KRCS, USAID, CARE, Handicap International, JICA and Oxfam the different humanitarian organizations have been involved in humanitarian activities pre, during and post flooding on several occasions in the area. Their strong role in development works side by side with the recovery from a disaster and prevention and preparedness for any future disasters (Ariyabandu, 2003:26).

The challenges humanitarian organizations during floods are among them communication flow, employees competence, flow of relief supplies and staff motivation. Effective communication is critical to drive material along the relief aid network within and among the field/aid workers. Research shows that two way communications with both internal and external parties is critical for successful output (Krause, 1999) during a disaster, communication is as important as food and water.

Poor infrastructure, for example, roads have been impassable "Poor infrastructure, and the complete absence of roads in some settlements makes rescue and relief efforts difficult, costly and risky for aid workers. According to KRCS, projects to empower vulnerable communities in rural areas, who are often worst-hit by disasters, can help to build resilience. The potential benefit of resilience projects is enormous and helps a

lot to empower communities in areas synonymous with floods (UNEP, 2009).

The ability to have real time information on victims, volunteers, logistics, and financial information allows the Kenya Red Cross to respond in an efficiently coordinated manner (Rudduck, 2002). This is because the state of the internal information and communication systems within an NGO is an integral component of how successfully the organization is able to respond to complex humanitarian emergencies that include food and non food aid response. Although NGOs voice the desire and willingness to cooperate, the pressure of competition is enormous, presenting challenges to joint inter and intra communication and information (Horey and Fallesen, 2003).

Also competencies, or individual characteristics, were recognized as significant predictors of employee performance and success, a few employee competencies that have been proven time and again as mandatory for effective performance. Not-for-profit organizations tend to center around new competencies such as governance effectiveness, boardroom contribution, and service to community (Chait, Ryan and Taylor, 2004; cited in Thach et al., 2007). Following the initial emergency phase there are always delays in the arrival of assistance from abroad. Immediate needs must be met primarily with locally available resources from the affected area this pose another major challenge. Logistics determines an aids workers timeliness and accuracy of distribution. This also affects the aid workers morale in their work (Van Wassenhove , 2006).The main objective of a humanitarian assistance management system is to strengthen national capacity so that supplies are effectively managed from the moment donors offer assistance and through their arrival and distribution in the affected area The agencies most involved in this field, in addition to the health sector, include civil

i. Statement of the Problem

The global scenario in relation to disasters is becoming bleaker (Ariyabandu, 2003). Further, recent studies of the United Nations on global warming and climate change have predicted that global warming could bring about drastic climate changes, resulting in droughts,

protection agencies, customs agencies, Red Cross societies, and other NGOs capable of mobilizing national and international assistance.

Humanitarian relief supplies that arrive following a major disaster, whether natural or complex in origin, cause serious logistical and administration problems for national and international authorities. Humanitarian supply chains generally suffer due to poor planning which leads to increased costs or the inability to deliver goods, and poor collaboration, un-road worthy vehicles and bad roads and political influence (JICA, 2007).

Coordination is often difficult because of the many groups involved (military, government, NGO's), and often inadequate infrastructure. In many humanitarian aid organizations, transportation is the second largest expense after personnel. The uncertainty in vehicle demand can originate from internally or externally-based sources. The factors that are externally based are analogous to firm operating conditions and can be modeled as such (Bose, 2008).

Consolidated the areas of needs that motivate employees, these are; hygiene, achievements, recognition, responsibility and growth or advancement. People are motivated and able to continually work harder and more efficiently and that employee should be paid on basis of the amount and quality of work performed. Ouchi (1981), employee who are involved and committed to an organization will be motivated to increase productivity. The managers provide rewards such as long term employment, promotion from within and participatory management. Motivation for employees has been found to be a tricky business and managers often fail to understand the concepts, principals, and myths, about motivation so as to put into practice (World Disasters Report, 2014).

floods, cyclones and volcanic eruptions in many places that had no or little experience of such phenomena earlier – by which millions of people might be affected (Ariyabandu, 2003:26). Nelson (2012) also noted that floods have a negative impact in a community that live

in flood prone areas. In Kenya, it is emerging as the most prevalent climatic disasters, with the prevalence rates standing at (27%) and affecting (5%) of the population (GoK, 2007). Floods related fatalities constitute a whopping (60%) of disaster victims in Kenya according to the United Nations Environment Programme (UNEP, 2009). Among the areas that experience floods every year are Budalang'i, Kano Plains, Rachuonyo, Migori, Tana River District and Coast Province. Besides the evident loss of homesteads and the displacement of people and animals, floods also have other effects such as loss of crops, diseases outbreaks such as malaria, cholera and dysentery (Gadain et al., 2006). These results into further loss of lives, decreased live hoods, decreased food security

ii. Purpose of the study

The purpose of this study was to investigate socio-economic factors affecting response to floods by humanitarian organizations in Lower Kano Plain of Nyando Sub-County, Kenya

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LITERATURE REVIEW

It is a fundamental tenet of emergency management that there is no disaster without people (Cutter, 1996). Natural disasters hit populations regardless of their social status or economic conditions; the consequences of these natural disasters, however, do affect people differently according to their social and economic environment (Doherty, 2004). According to this principle it is the existence of a community which turns a mere event into something which is threatening in human terms and which therefore brings about a reaction.

According to Otiende (2009), it is equally true, but much less widely accepted as an axiom that both preparedness for and response to hazards are greatly facilitated by an understanding of the community on whose behalf preparation and response are undertaken. Sadly, in some of our emergency service organizations there is no more than a rudimentary understanding of the nature and dynamics of communities and the relevance of a comprehension of community characteristics to disaster management (Benthall, 2008).

and increased poverty. The incidence of poverty in Nyando basin is high, ranging from an average of (68%). Although the government, NGOs and other humanitarian organizations have put alot of effort to effectively manage this menace and limit its disastrous effects to the people living in flood prone areas, floods have continure to raise havoc and in many instances, loss of properties and life have been reported. This therefore raises the question of whether these bodies concerned are experience challenges when responding to this disaster. It is for this reason that this study sought to investigate socio-economic factors affecting response to floods by humanitarian organizations in Lower Kano Plain of Nyando Sub-County, Kenya

The cultures which have developed in these organizations tend to be hands-on and crisis-focused in their stances; in general, they have paid little attention to careful examinations of the communities which they protect. Messages warning of impending hazards are mechanistically constructed, paying little heed to the principles of communication, and as a result they are frequently misunderstood or ignored (Cutter, 1996).

Furthermore, there is little consideration of the nature of vulnerability and the identification of the most disaster-vulnerable groups within the community - at least in advance of hazards actually occurring - with the result that emergency managers are unable optimally to target assistance to those for whom hazards will be most dangerous.

Fortunately, there are ways in which these deficiencies can be addressed. The tools and insights of the social sciences should have utility to disaster managers as they seek to improve their understanding of and communication with their communities in the context of hazard preparedness and response. In particular, consideration of demographic structure and the principles of risk communication seem likely to pay dividends (UNISDR, 2004).

Disaster risk management framework acknowledges the steps of traditional practice of disaster management (preparedness, response, recovery, mitigation), but also argues on giving attention to more "proactive strategies, which can contribute to saving lives and protecting property and resources before they are lost" (UNISDR 2004). Emphasis is on risk reduction, which is defined as "the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society,

to avoid (by prevention), or to limit (by mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development” (UNISDR 2004).

Empirical evidence demonstrates that “societies which suffer a fragile physical environment, weak economies and inadequate social and institutional structures are disproportionately likely to make a disaster out of a natural hazard” (Ozerdem, 2006: 399). Communities with, for instance, high levels of poverty and crime, loose family ties, limited business opportunities, deserted areas, or weak infrastructures, will be more affected by natural disasters because any of these factors reduces people’s capacities to respond to an emergency situation (Klinenberg, 2000:91). Loose family ties, for example, probably affect individuals’ willingness to look for and assist relatives while high crime rates might result in citizens focusing on protecting their assets instead of helping others. In addition, victims as well as emergency responders will not have easy access to provisions due to extreme poverty and lack of stores in the economically depleted areas. The presence of just one of these factors could have a detrimental effect on the emergency response in the wake of a natural disaster (Lagadec, 2004: p. 168). Conversely, strong community links, resilient infrastructures, high population density, satisfying economic conditions, or significant commercial activity all have the potential to increase the community’s response and reduce the victims’ vulnerability to disaster consequences; thereby lowering the workload of official emergency responders and enhancing their capacities. However, the affected population’s socio-economic conditions do not only influence the workload of official emergency responders, they also partly define the particular environment in which search and rescue activities will take place. Socio-economic conditions indeed shape

i. Theoretical review

The theory of structuration is a social theory of the creation and reproduction of social systems that is based in the analysis of both *structure* and *agents*, without giving primacy to either. Further, in structuration theory, neither micro- nor macro-focused analyses alone are sufficient. The theory was proposed by sociologist Anthony Giddens, most significantly in *The Constitution of Society*, which examines phenomenology, hermeneutics, and social practices at the inseparable intersection of structures and agents. Its proponents have adopted and expanded this balanced

the behavior of the victims themselves, which in turn can affect the emergency response (Boin et al., 2005:59). Victims might have to survive on their own in a hostile environment in which the rule of law does not prevail anymore resulting in chaotic conditions and anarchical behaviors.

It is also worth mentioning that the socio-economic structure of affected populations can also influence political actors and, by extension, disaster management decision-makers. There might be more or less political pressure to act quickly, mobilize extensive resources, and attract media attention according to the socio-economic composition of the victims. In the field of crisis management, as in any other area of governmental activity, political will is a major factor in the process of resources allocation, both during the prevention/preparation phases and the emergency response (McConnell, 2003). The study also found early warning system and awareness building could reduce the suffering of the victims. However, Islam (2006) examined the impact of global warming on floods, vulnerability of floods, and effectiveness of warning. Roy *et al.* (2009) examined the impact of disaster (*Aila*) on livelihood of disaster-affected people. They found people in disaster-exposed areas suffer from food security, pure drinking water, proper sanitation and so forth.

To assess the impact of the social and economic environment on the emergency response, two aspects need to be explored: the affected populations’ attributes in terms of socio-economic indicators because this will influence victims’ capacities to rely on their own means to overcome the consequences of the disaster; and the victims’ socio-economic position within the wider community because this position might influence the local or regional political actors’ emergency response.

position. Though the theory has received much criticism, it remains a pillar of contemporary Sociological theory (Cutter, 2003).

Giddens observed that in social analysis, the term *structure* referred generally to "rules and resources" and more specifically to "the structuring properties allowing the 'binding' of time-space in social systems" (Bourdieu, 1977, p.83). These properties make it possible for similar social practices to exist across time and space and that lend them "systemic" form.

Agents—groups or individuals draw upon these structures to perform social actions through embedded memory, called *memory traces*. Memory traces are thus the vehicle through which social actions are carried out.

Structure is also, however, the result of these social practices. Thus, Giddens conceives of the duality of structure as being the essential excursiveness of social life, as constituted in social practices: structure is both medium and outcome of reproduction of practices. Structure enters simultaneously into the constitution of the agent and social practices, and 'exists' in the generating moments of this constitution (Chambe, 1992). Thus, structuration theory attempts to understand human social behavior by resolving the competing views of structure-agency and macro-micro perspectives. This is achieved by studying the processes that take place at the interface between the actor and the structure. Structuration theory takes the position that social action cannot be fully explained by the structure or agency theories alone. Instead, it recognizes that actors operate within the context of rules produced by social structures, and only by acting in a compliant manner are these structures reinforced. As a result, social structures have no inherent stability outside human action because they are socially constructed. Alternatively, through the exercise of reflexivity, agents modify social structures by acting outside the constraints the structures place on them (Giddens, 1993).

Giddens's framework of structure differs from that in the classic theory. He proposes three kinds of structure in a social system. The first is signification, where meaning is coded in the practice of language and discourse. The second is legitimation, consisting of the normative perspectives embedded as societal norms and values. Giddens's final structural element is domination, concerned with how power is applied, particularly in the control of resources.

Social systems have patterns of social relation that change over time; the changing nature of space and time determines the interaction of social relations and therefore structure (Bourdieu, 1977, p.83). Hitherto,

social structures or models were either taken to be beyond the realm of human control the positivistic approach or posit that action creates them—the interpretivist approach. The duality of structure emphasizes that they are different sides to the same central question of how social order is created.

II. METHODOLOGY

Study Area

The study was conducted in the lower Kano Plains. The area was selected due to it being rated as a flood disaster red zone (Ongwenyi, Denga, Abwao & Kitheka, 1993). Generally, Lower Kano Plains experience annual floods resulting into property damage and temporary evacuation of residents annually (JICA, 2007).

Kano Plain lies between longitudes 0°50'S and 0°10'S and between latitudes 33°05'E and 34° 25'E (National Environmental Management Authority, 2004). The economy of Kano Plains consists of agriculture, fisheries and a wide range of informal sector activities. In terms of cultivation, about 50,000 hectares of the Kano Plains are arable and can be cultivated. All the rice in the Kano Plains is produced through irrigated cultivation. Most of the water for irrigation comes from River Nyando, whose annual floods also displace a huge number of people (Miller, 2009).

Research Design and sampling

Research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem research. These includes (descriptive, correlational, semi-experimental, experimental, review, meta-analytic) and sub-type (e.g., descriptive-longitudinal case study), research problem, hypotheses, independent and dependent variables, experimental design (Nwandinigwe, 2005).

Sampling Strategies

Sample size determination is the act of choosing the number of observations or replicates to include in a statistical sample. the sample size used in a study is determined based on the expense of data collection, and the need to have sufficient statistical power. Using a confidence level determines how accurate a result will turn out with lower chances of error (Cohen, 2012). Sample sizes are judged based on the quality of the

resulting estimates. Alternatively, sample size may be assessed based on the power of a hypothesis test (Kasomo, 2007).

Therefore, to obtain suitable sample size for households to be interviewed, Slovin's equation as cited in the formula below was used.

$$n = \frac{N}{1 + N(\alpha^2)}$$

Where n = sample size

N = Sample frame

α = margin of error

The sample frame (N) shows the list of the population of the groups selected for the study. According to Slovin, if a sample is taken from a population, the

formula must take into account confidence levels and margin of error (Orodho, 2003).

The area has 12 Community based Organizations which are registered by the department of social services with active operations in Humanitarian activities (Njogu, 2002). As such, the study included 1 assistant county commissioner, 8 Chiefs, 19 assistant chiefs, 12,994 household heads (response), KRCS County Coordinator, Head of special Programmes for Kisumu County and 12 CBO Chairpersons.

Based on the study population estimates and using Slovin's Equation, the sample frame was computed and is presented in the table 1

Table 1: Sample frame

Category of respondents	Target Population	Sample size	Percentage
KRCS Director of Operations	1	1	100%
District Officer	1	1	100%
Chiefs	8	8	100%
CBO Chairpersons	12	12	100%
Households	12,994	388	1.58%
Total	13,036	437	3.35%

Source: Researcher (2017)

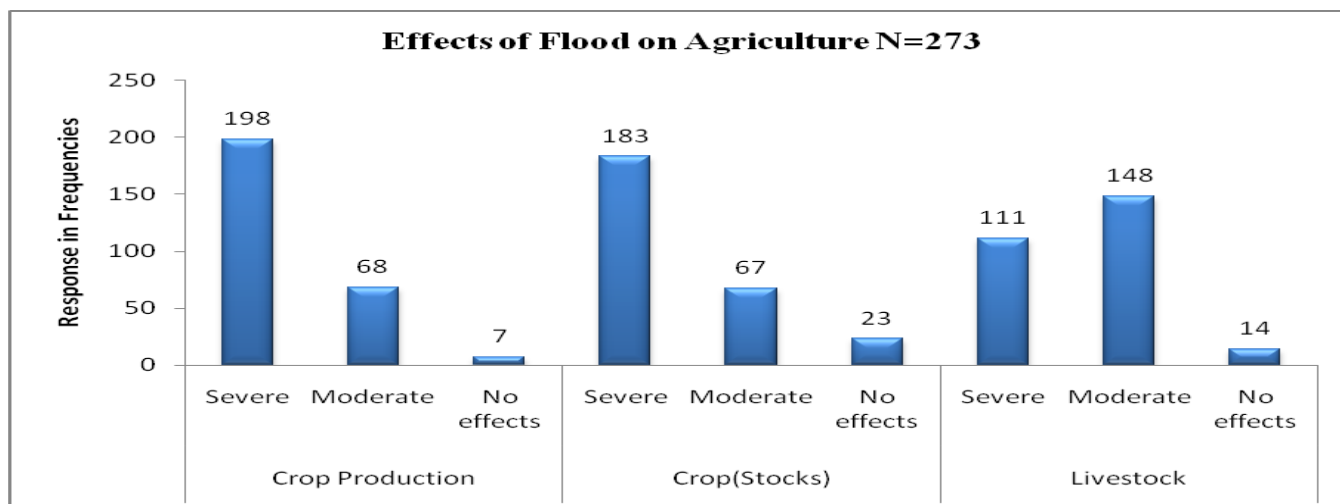
The primary Data collection methods include; questionnaires The Interview guide, Focused Group, Observation. While Internet Search, document

analysis are Secondary sources. The quantitative data was analyzed using SPSS and MS EXCEL Software Packages (Saunders, et, al. 2007)

III. FINDINGS

Effects of flood on Different Sectors in lower Kano plains

The study sought to find out the effect of flood on different areas. This was imperative in order to find out the level of severity of the effect. Figure 1 shows the response.



Source, Field Data, 2017

Figure 1 Effects of Floods on Agriculture

The study found that in all areas, severity of flood was high, with over 60% of the households indicating that the effects of flood in crop production, crop (stocks), health, water access, sanitation, infrastructure and housing was very severe. Figure 5.1 shows the response. This percentages clearly depict how the flood effects were always felt in various socio-economic sectors in Lower Kano plain. According to the findings ,(72.5%) indicated that the effects of floods on crop production was severe. When the effect of floods are severe on crop production and this being one of the major economic activities of the people of lower Kano then there is a high probability of food shortages.

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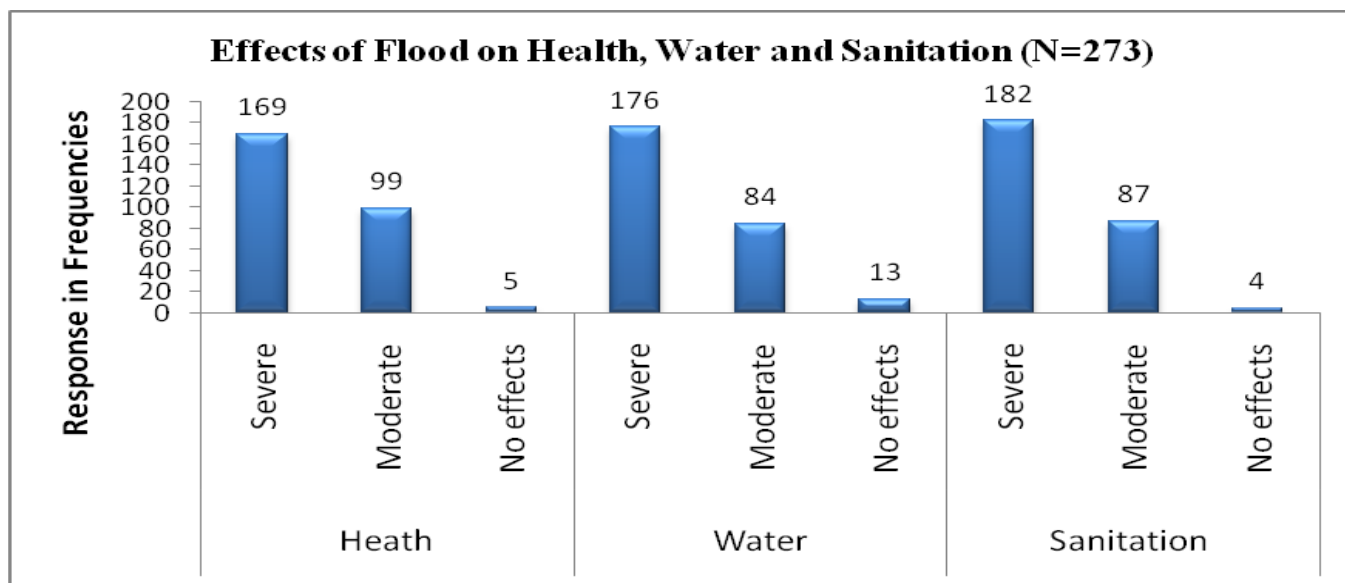
“As soon as it starts raining, we know the danger is eminent, it causes as awful feeling. I one time lost a lot my wares in the flood and was unable to report to work for three weeks. I had nothing to feed my family on” he further attested the houses submerged to flood water while houses collapsed and all valuable washed away” (Interview, Field data, 2017)

These findings support those of Njogu, (2002) who also found that floods destroy standing crops.

Effects of Floods on Health, Water and Sanitation

About (67%) indicated that the effect of floods on crop stocks were severe. Combined flood effect severity in crop production and crop stocks reduces the peoples purchase power and thus affecting their livelihood. As regards to effect of floods on livestock, the majority at (54.2%) indicated that it was moderate. In the case of livestock, the effect of floods were moderate since animals could be evacuated to other regions thus reducing the effects. A participant reported loss all his wares during flood and not being able to worth for three weeks

Prolonged flooding often limits people’s ability to earn money and replant quickly after floodwaters recede because either the cropping season is over or agricultural support is not available (Bose, 2008). Vulnerable people should be given various financial and material options, so that they can choose what works best for them. The decision to provide food, cash, a combination of both or something else should be based on an objective problem analysis and clear aims and not on what resources are available, what the agency has the capacity to distribute or the donor’s preferences.



Source, Field Data, 2017

Figure 2 Effects of Floods on Health, Water and Sanitation

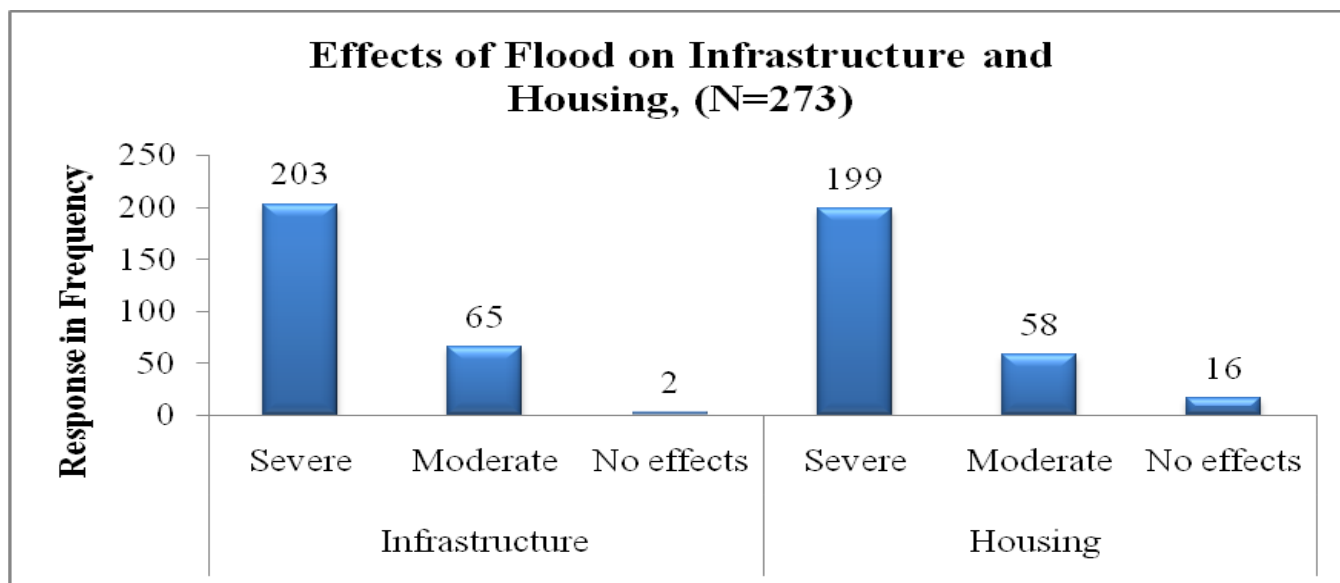
This study also revealed that about (62%) indicated that flood effect on health was severe. The flood water provided environment for breeding of mosquitoes hence rising cases of malaria. Effects of floods on water access and sanitation were severe and recorded (64.4%) and (66.6%) respectively. Contamination of water in an event of flooding through mixing with soil and poisonous waste also placed this population at a risk of contracting various diseases. The contaminated water affected both the people and the animals hence impacting on agriculture.

During the floods seasons, people were exposed to diseases such as cholera, bilharzia, and typhoid. Thus McCluskey (2001) also points that the potential for disease outbreaks is always present after a disaster. Good understanding of water and sanitation conditions, disease surveillance, and speedy response to warning and above all, preparedness of health agencies are the preconditions to reduce the spread of diseases and preserve the quality of the environment during and after flooding. McCluskey (2001) further showed that the risks of disease are greatest where there is overcrowding and where standards of water and

sanitation have declined. This often happens in situations of massive population displacement away from the flooded area and prolonged stay in flood shelters without adequate water supply. People themselves, national authorities and relief agencies in many flood-prone areas have had to develop mechanisms and technologies in order to sustain populations living in flooded environments. Initiatives to improve water supply or water systems should incorporate long-term sustainability.

“They can increase to epidemic levels even in a moderate flood, particularly in rapidly expanding urban areas with their often poor environmental conditions. Water-borne diseases are preventable through provision of clean water and sanitation (Interview respondents.” (Field Data, 2017)

Effects of Flood on Infrastructure and housing



Source, Field Data, 2017

Figure 3 Effects of Floods on Infrastructure and housing

With the destruction of infrastructure and housing the respondents indicated that the effects of floods were severe at (74%) and (73%) respectively. In cases of infrastructure such as roads, the accessibility to the markets become a problem hence some agricultural produce barely reach the market in time. These findings were also justified by the KRCS director, during the interview session, where he also reiterated that;

During the Large sediments could be deposited on roads thus making them impassable. In addition to that, even foot paths were covered by flooding water hence hindering mobility. As

regards to houses, many structures were brought down by the force of the flooding water. In some cases, houses were submerged in water or totally destroyed thus rendering people houseless (Field Data, 2017)

The findings show that flood affects to a great extent the infrastructure and housing of the area. Mercer and Kelman (2008) also found that during extreme weather events transport infrastructure can be directly or indirectly damaged, posing a threat to human safety, and causing significant disruption and associated economic and social impacts. Flooding, especially as a result of intense precipitation, is the predominant cause of weather-related disruption to the transport sector.

Effects of floods on Fishing Industry

Respondents were probed on effects of floods on fishing industry. Therefore, residents were asked to indicate whether they agreed or disagreed with the statements. Table 2 show the response.

Table 2 Effects of floods on Fishing Industry

Statement	Agree		Don't know		Disagree	
	F	%	F	%	F	%
Flood affects water quality for fish growth and reproduction	169	61.9	56	20.5	48	17.6
Flood interfere with accessibility to fishing grounds	171	62.6	88	32.2	14	5.1
Flood interferes with fish market	148	54.2	101	37.0	24	8.8

The study found that flood affects water quality for fish growth and reproduction as shown by 61.9% of the respondents. Only 17.6% of the respondents disagreed with the statement as 20.5% remained neutral. It was also found that flood interfere with accessibility to fishing grounds as agreed by 62.6% of the respondents. More than half of the respondents at 54.2% agreed with the statement that flood interferes with fish market, in terms of destruction of transport facilities. From these findings, it can be deduced that flood affects fishing industry through interfering with water quality, accessibility to fishing grounds or beaches and fish markets. Horsfall and Spiff (1998) equally collaborated the seriousness of erosion problems in the Niger Delta fisheries when they reported that in the Niger Delta, river banks, stream bank and river bed

erosion is a major problem that hinder effective fishing.

Effects of Floods on Productive Assets

Floods have far reaching implications on the livelihood of households and which is suddenly lost and felt for many years to come. In this study, respondents were asked to indicate their experiences on productive assets during floods. Out of 384 sampled households, 383 (99.7%) indicated that their house belongings were damaged while 1(0.3%) did not. Furthermore, 374 (97.4%) reported depreciation of house value with a paltry 10 (2.6%) did not report this effect. About 381 (99.2%) of the households whose houses were impacted by floods also reported loss and distress to the pets while 3 (0.8%) did not.

Table 3 Effects of Floods on Productive Assets

	Frequency	Percentages
Household belongings	383	99.7%
Depreciation of house value	274	97.4%
Loss and distress to the pets	381	99.2%

The results in this tally are in agreement with Tobin and Montz (1997) who demonstrated that the value of houses decreases immediately after flooding, but recovers 2-3 years and (Yeo 2003) who noted that investment in a flooded area would have a knock-effect on housing if substantial migration occurs. Findings of a study by RPA (2005) in England and Wells show that damage to and loss of memorability and irreplaceable items was ranked as a major impact by respondents. Although ranked below the effort of getting a house back to normal, having to leave home, and anxiety

about future flooding, the loss and damage of memorabilia was ranked above health impacts. From FGD findings, it emerged that some households were forced to relocate to alternative areas while some households send their children to stay with relatives. Relationships within the family were also tested by living in temporary accommodation. This, in a way disrupted their pattern of life and social networks. Some moved temporarily to higher grounds and return to their usual resident's liter.

5.6 Effects of Floods on Transportation

Nyando basin has two major trunk roads in addition to some primary networks. The primary networks are made from marram. The study sought to find the effects of floods on the transport networks.

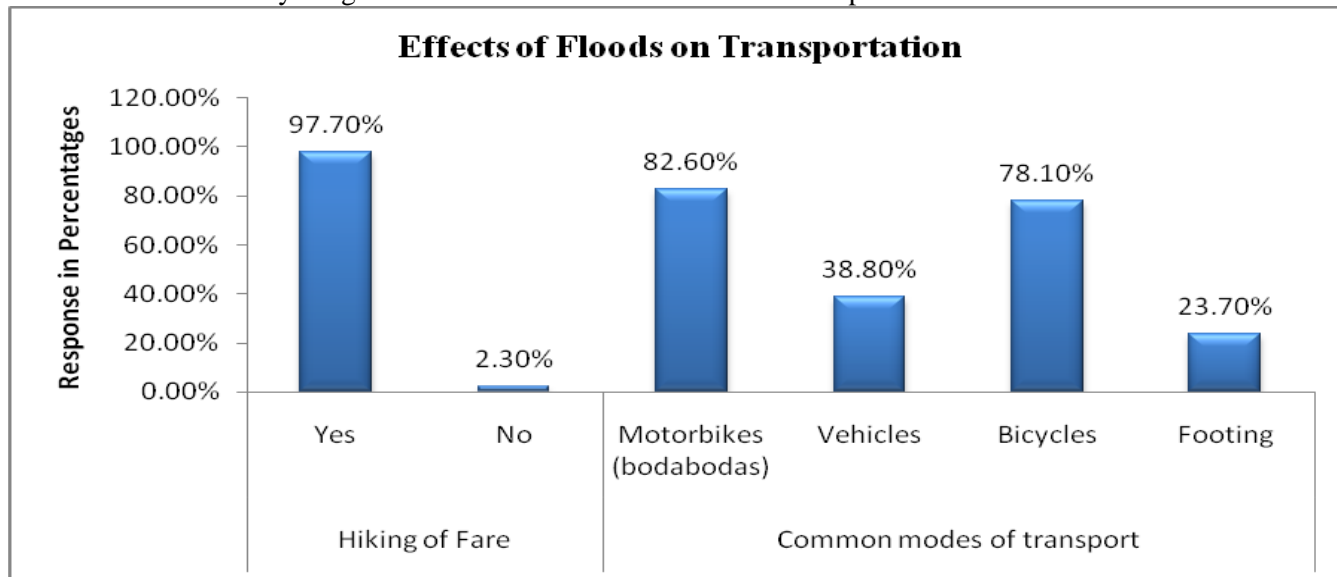


Figure 4 Effects of Floods on Transportation

Findings indicated that 375(97.7%) of the respondents reported hiking of fare during the flooding season while 9 (2.3%) of the respondents did not. The study observed that the most common mode of transport in Kano is the motor bike and the bicycle commonly known as “*bodaboda*” used in seasonal/marram roads and “*matatu*” Which are used for long distance travels, as shown by 82.6% and 78.1% respectively. Nyando basins have seasonal roads known as all-weather roads. Transport is usually affected during flooding periods hampering services provision because roads became in accessible while others get damaged.

The floods also damage irrigation infrastructure such as intake structures, canals and drains. Roads were completely cut off resulting in the isolation of communities for long periods and disruption of transport, communication and business activities. The effects experienced include shortage of food and other basic supplies in the study area. Relief operations coordinated by the government and other relief and humanitarian agencies during flood disaster were also affected due to destruction of transport infrastructure. From the FGD it also emerged that;

“The fares normally sky rockets therefore hindering movements of people from one place to another. The damage to infrastructure not only exacerbates impacts of flood disasters, but also creates problems in the evacuation of the affected

population. Because of the interrelationship between the infrastructures and other sectors of the economy, disruption of infrastructure also disrupts socio economic activities leading to loss of livelihood as well as scares resources to coping with reconstruction”. (Field data, 2017)

When the disruption of infrastructure and roads takes too long, it may result in the material impoverishment of the neighborhood, social impoverishment and migration of people. This adversely impacted investment and development activities in the area and in certain cases crippled the frail economy of the region. Consequently, it can be concluded that the resistance, resilience and susceptibility of the infrastructure determine the degree of household’s vulnerability as well as that of the community that they are situated. The study also establishes that most of the roads had either partly or completely damaged, making them at many times impressive.

This chapter has analyzed the findings from questionnaire survey of households, interview and FGD in three locations flooded within the period of 2010-2014. Overall, (77.1%) of the households had been affected adversely by floods out of the sample. It is also clear from the above analyses that floods have adverse effect on socio-economic status of livelihood of households in lower Nyando basin. The floods deposits that tangible impact of floods was more severe

than intangible effects. The education sector suffered massive losses. Learning was disrupted due to submerged schools and damaged infrastructure. Household suffered emotionally due to loss of memorabilia. Insecurity was reported in three locations. Houses, most of which were made of poles or mud were destroyed in one way or the other forcing families to relocate to other alternative areas. Regarding water and sanitation was found to be the main source of water.

The study concludes that, both government and households recognize the seriousness of flooding problem and recognize the need to mitigate its impact. However there is little coordination between government and household mitigation activities As a result even longtime residents who have long experience with flooding continue to suffer heavy personal and property losses.

5.7 Socio-Economic Factors Affecting the Operations of the Humanitarian Organizations

The residents of lower Kano plain views regarding the socio-economic factors affecting the operations of the humanitarian organizations during the flooding were also sought and measured on a five point LIKERT scale where strongly agree (SA) = 5, agree (A) = 4, neutral (N) = 3, disagree (D) = 2 and strongly disagree (SD) = 1. Further, the researcher computed the frequencies and percentages as well as the mean regarding each statement. The results of the findings on were as presented in Table 4

Table 4 Socio-economic Effects on operation of Humanitarian organizations

Statement	SA F(%)	A F(%)	N F(%)	D F(%)	SD F(%)
There are always more fish during floods and so we cannot move away from this place	174(63.0%)	64(23.4%)	21(7.7%)	6(2.2%)	8(2.9%)
I do not have enough money to relocate and set up a new in higher areas away from flood	182(66.0%)	65(23.8%)	17(6.2%)	6(2.2%)	3(1.1%)
This area is valuable and good for us even if floods come because the soils become fertile after floods	161(59.0%)	71(26.0%)	9(3.3%)	28(10.3%)	4(1.5%)
Floods bring about more food and water thus making this area ideal for us.	113(41.4%)	51(18.7%)	39(14.3%)	31(11.4%)	39(14.3%)
We do not have any formal employment and so must rely on fishing and farming for our needs hence we cannot relocate	178(65.2%)	69(25.3%)	13(4.8%)	7(2.6%)	6(2.2%)
I do not have enough income and so whatever is given by Humanitarian Organizations is so small that it cannot sustain my needs during floods	196 (71.8%)	51(18.7%)	12(4.4%)	5(1.8%)	9(3.3%)

(Source: Field data, 2017)

Key: F=Frequency, SA = 5, Agree= (A) =Neutral= (N), Disagree= (D), Strongly Disagree = (SD)

The study found from Table 5.4 based on the response of the household members that floods in the region were also attached to some economic benefits. For instance, majority of the respondents at 174(63.7%) indicated that there were always more fish during floods and so they could not move away from the flood prone areas. This perception could therefore hamper successful and effective of humanitarian operations such as evacuation. This support the observation made by Oluseyi and Oloukoi (2013) who also found that in predominantly Christian communities, the water spirits are still revered and is believed to be involved in day-to-day activities of the communities. In some communities, they hold the belief that the water spirit is responsible for a good fish catch and if the spirits are annoyed the fishes may not enter the nets and will result in poor catch for fishermen.

Further, when probe on why they could not move to a higher place, majority of the respondents (household heads) at 182(66.7%) indicated inadequate availability of resources such as money to relocated to more safer lands and this could be attributed to low economic status of the majority of the respondents, hence impeding the implementation of some of the operations by the humanitarian organizations. Lagadec (2004) also documented that victims as well as emergency responders will not have easy access to provisions due to extreme poverty and lack of stores in the economically depleted areas. The presence of just one of these factors could have a detrimental effect on the emergency response in the wake of a natural disaster (Lagadec, 2004:168).

Over half of the respondents (household heads) at 161(59.0%) indicated that reluctance to relocate to safer areas was due to agricultural reasons. For instance, this portion of respondents indicated that the

“No single organisation can handle the disaster response effectively without the help of other organisations, although each organisation can have their own programmes and do what they like. However, there should be coordination and cooperation among the actors (humanitarian organizations) during the flood management as this will help in avoiding duplication of activities and enhance effective response the disaster management. This can be done through setting up committees that represents the organizations to allow sharing of information on

area was valuable and good for them even if floods come because the soils become fertile after floods. Similarly, 113(41.4%) confirmed that floods brought about more food and water thus making the flood prone areas be ideal for their living. The study also found that most of the respondents could not relocate to safer grounds during floods because whatever was given by Humanitarian Organizations was so small that it could not sustain their needs during floods, as indicated by 196(71.8%) of the respondents. Further, 65.2% of the respondents indicated that they did not have any formal employment and so must relied on fishing and farming for their needs hence they could not relocate to safer areas.

From these findings, it could be deduced that some of the major reasons for reluctance to relocate to safer grounds during flooding was due to economic reasons and inadequate of resources to start a new life in new areas during flooding. This supports the study by Stivers (2007) who reveal that the governmental failure to act and step outside the rules whenever necessary during the flooding seasons or any natural calamity might have been generated by the socio-economic characteristics of affected populations.

Other challenges that emerged during the interview with the officials of humanitarian organizations were duplication of roles among the organizations. All the respondents were of the view that they came together in order to avoid duplication and make judicious use of the available resources. Generally, all the respondents echoed the same view and this is captured in a statement made by interviewee in response to a question about challenges they face in addressing flooding in the area. One of the officials working with the Kenya Red Cross Society offered that;

operations so that others will not do the same things.” (Field data, 2017).

This view shows a strong indication that duplication and resource management were key factors that influenced effective management and addressing of flood by humanitarian organizations in lower Kano plains. Another challenge that was mentioned by officials of the humanitarian organizations during the interview was lack of inclusive measures to manage floods in lower Kano plains in the interview. One of the officials had this to say;

Inclusive structural measures like embankments can provide protection against

many types of flooding. Flood control alone, however, often does not provide a robust, long-term solution for addressing flood risk. Such efforts at flood control in flood prone area have produced limited solutions, sometimes even exacerbating flooding problems, when applied in isolation from overall policy in the floodplains. However, such structures may offer solutions to critical aspects of the flooding problem if they are used in conjunction with other non-structural measures, are planned and

implemented with the participation of local people and with an understanding of possible negative consequences, and are integrated in the overall developmental policy (Field,2017).

These findings show that inadequate inclusive measures would hurt prompt and effective response by humanitarian organizations during flooding. Rudduck, (2002) also found that failing to include all the stakeholders of flood response including the affected communities would jeopardize efficient response to flood by the humanitarian organizations.

Challenges facing humanitarian organization in responding to flood in Lower Kano Plain

Communication Challenges

Effective communication is critical to drive material along the relief aid network within and among the field/aid workers (Krause, 1999). According to Russell (2004), disaster can damage telecommunication infrastructure. If an event happens in a densely populated area, thousands of people can try to make

calls at the same time overloading the system. NGOs recognize the importance of communication. Those with sufficient resources have developed internal communication solutions. The ability to have real time information on victims, volunteers, logistics, and financial information allows the humanitarian organization to respond in an efficiently coordinated manner (Rudduck, 2002).

Level of communication among humanitarian responders

The respondents were first asked to indicate the level of communication among the management in the organization.

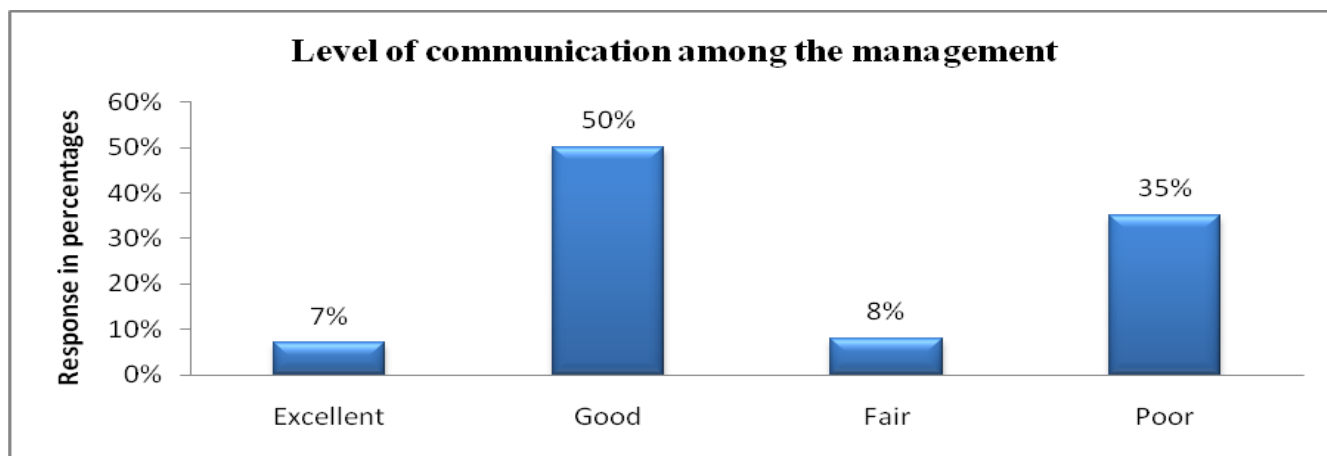


Figure 5 Level of communication among humanitarian responders
 (Field data, 2017)

According to the study findings, 136 (50%) of the respondents interviewed indicated that the level of communication in the organization within the management was good but not to employees and (7%) of them indicated that it was excellent while (8%) of them indicated that it was fair and (35%) of them said it was poor. It was an implication from the study that there was only effective communication between top level managers only but poor trickle down of

information to the lower level employees thus making work difficult due to lack of basic and timely information as indicated by Haselkorn and Mark, (2005) who portrays the drastic repercussions of not having timely and accurate information to help in planning. It is interesting from interviews was that?

“It was an implication from the study that there is effective communication between top level managers only but poor trickle

down of information to the lower level employees thus making work difficult for us due to lack of basic and timely information hence, the situation of the

members continue to deteriorate since more food aid cannot be increased without basic information” (Field Data, 2017).

Logistic Challenges during Relief supplies

The respondents were first asked to show the flow of relief supplies into the organizations warehouses. The following were the findings as shown in Figure 6

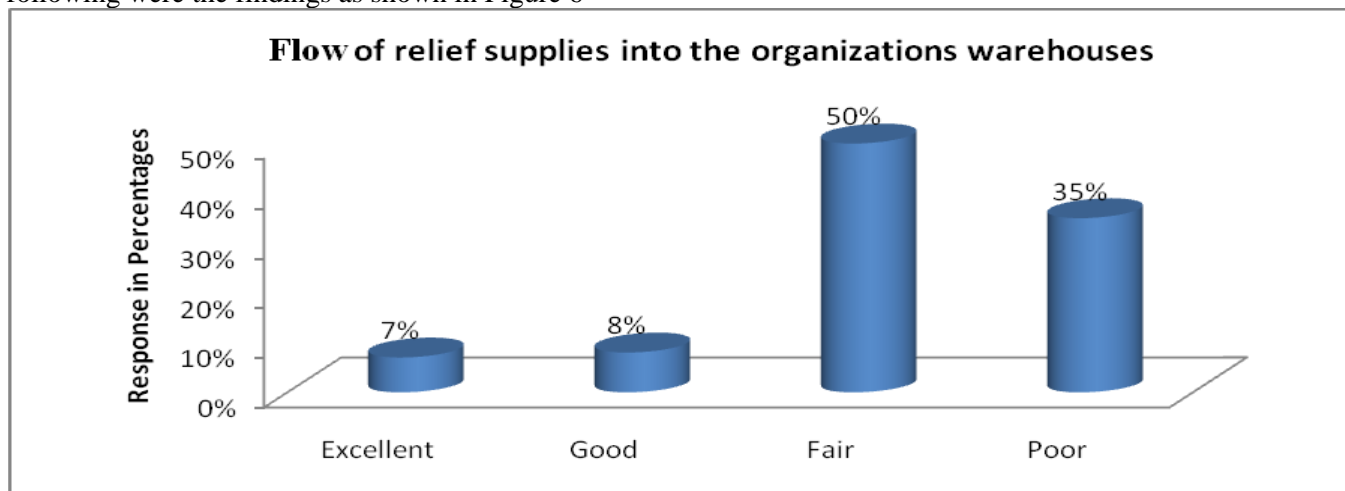


Figure 6 Logistic Challenges during Relief supplies

Field data, 2017

As indicated in Figure 4.2, (50%) of the respondents interviewed indicated that the flow of relief supplies into the organizations warehouses was fair since there were many challenges encountered during transportation of relief supplies like lack of communication and poor road networks. While (35%) of them indicated that the flow of relief supplies into the organizations warehouses was poor due to poor road and communication networks, 8% of them said that the flow of relief supplies into the organizations warehouses good due to good management practices and (7%) of them indicated that the flow of relief supplies into the organizations warehouses was excellent due to effective communication and planning. The findings implied that there were challenges encountered during the supply of relief materials to warehouse which included poor planning, poor communication and bad roads. During the interview one of the officials had this to say;

“Coordination is often difficult because of the many groups involved and often inadequate infrastructure, cause serious

logistical and administration problems for humanitarian organizations Making humanitarian supply chains generally suffer due to poor planning which leads to increased costs or the inability to deliver goods, and poor collaboration,” (Field data, 2017)

This shows that poor coordination with the humanitarian organization was a challenge to their efficient operations during floods. Humanitarian logistics is characterised by large-scale activities, irregular demand and unusual constraints (Oluseyi and Oloukoi 2013). The problems can range from a lack of electricity supplies to limited transport infrastructure including ‘controlled’ environment with some minor variability (e.g. traffic congestion).

5.8.4 Reasons for poor flow of relief supplies

The respondents were also asked to show the reasons for poor flow of relief supplies. The following were the findings as shown in Figure 7.

3.

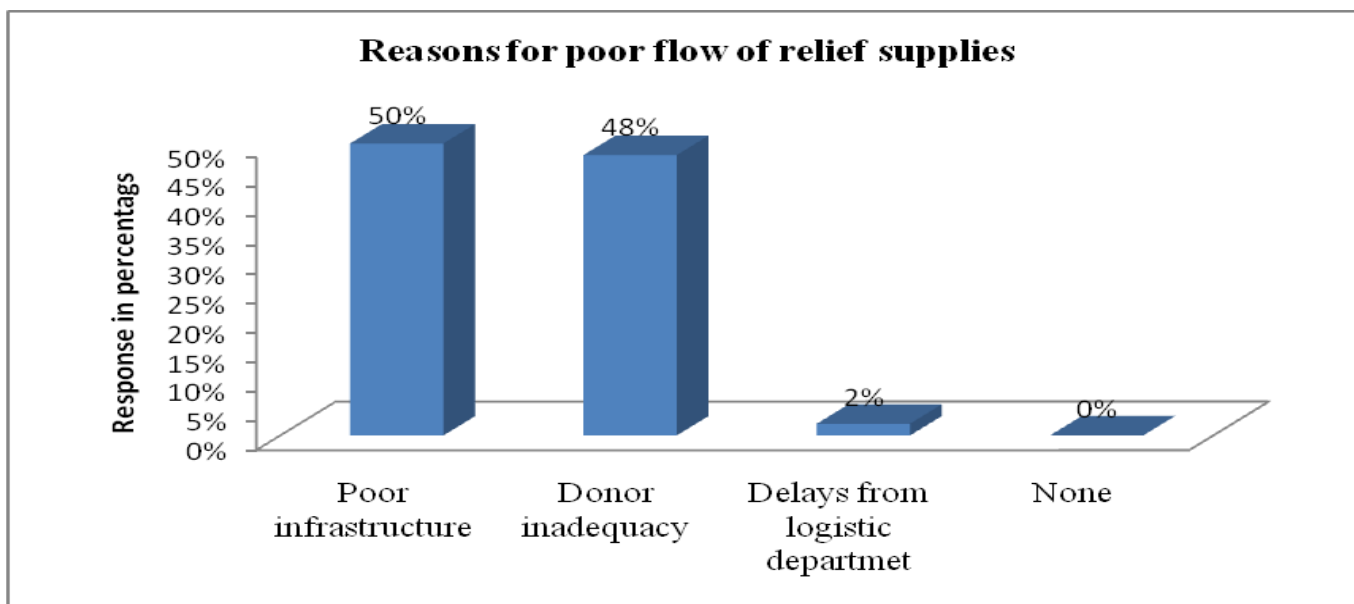


Figure 7 Reasons for poor flow of relief supplies

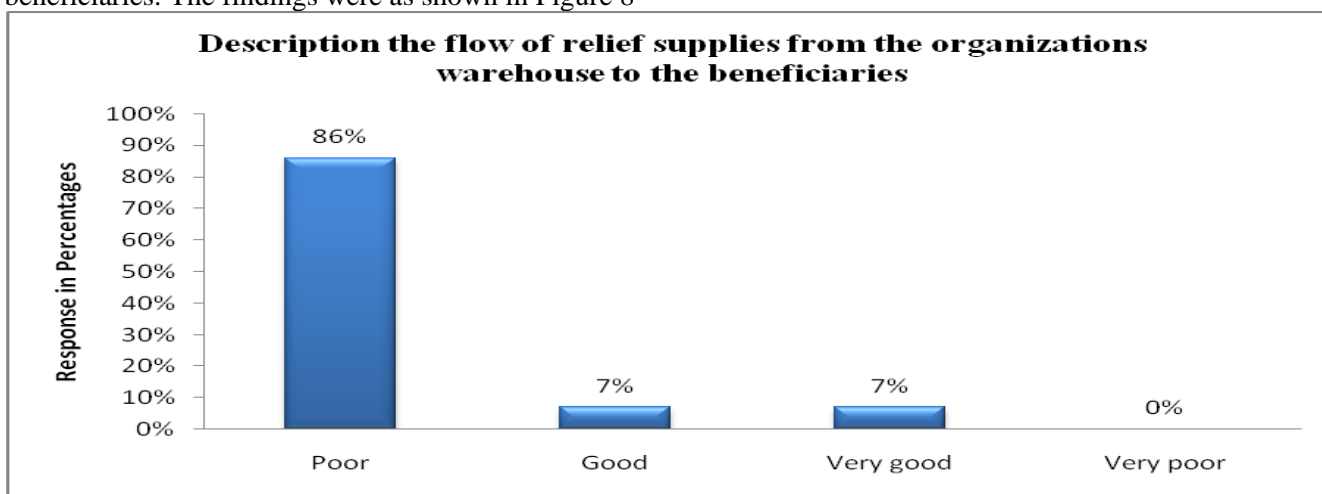
Source, Field data, 2017

As indicated in Figure 5.3, (50%) of the respondents indicated that poor roads were the major cause of delays of relief supplies into the organizations warehouses due to fewer efforts by the Government to construct and repair the roads. While (48%) of them indicated that donor inadequacy was another challenge that was experienced during the supply of relief materials to the right destination. This was due to lack of lack accurate information for effective planning. infrastructure

Only (2%) of them said that delays that were caused by suppliers due to lack of transit vehicles and unworthy road vehicles. Insecurity was another challenge suggested. The findings implied that infrastructure is a night mare in the area that causes delays in flow of relief supplies. This agrees with Van Wassenhove (2006) that there are several parts to prepare for effective flow, these include knowledge management (planning) and resources like

5.8.5 Description of flow of relief supplies from the organizations warehouse to the victims of floods in Lower Kano plain

The respondents were also asked to describe the flow of relief supplies from the organizations warehouse to the beneficiaries. The findings were as shown in Figure 8



Field data, 2017 ; N=273

Figure 8 Flow of relief supplies from the organizations warehouse to the victims of floods

As indicated in Figure 5.3, (86%) of the respondents indicated that there was poor flow of relief supplies from the organizations warehouse to the beneficiaries

due to poor coordination of logistical issues by the management and inadequate funds to facilitate the activities. While (7%) of them said that the flow of

relief supplies from the organizations warehouse to the beneficiaries was very good and good. The findings implied that there was a big problem in the flow of

supplies from the point of storage to the point of consumption.

5.9 Effects of staff motivation during Relief Aid distribution

In establishing the effects of employee motivation as a challenge, the study found that (46%) of the respondents indicated that there were measures in place for staff motivation in the organization which included differentiated salaries, field allowances, promotions

and yearly salary increment. Over half of the respondents at (54%) said that they were not motivated in any way due to a lot of challenges experienced during Relief Aid distribution (Figure 5.7). The findings implied that relief workers were highly demotivated which resulted to poor performance.

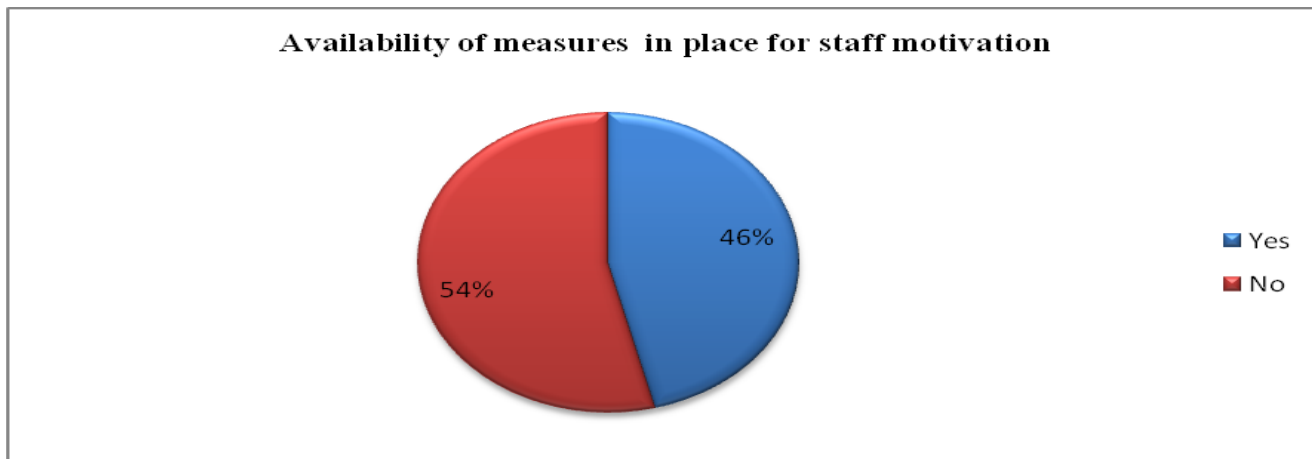


Figure 9 Effects of staff motivation during Relief Aid distribution
Field data, 2017

5.10 Rate of motivation during Relief Aid distribution

The respondents were asked to show rate of motivation during Relief Aid distribution. The findings were as shown in Figure 10

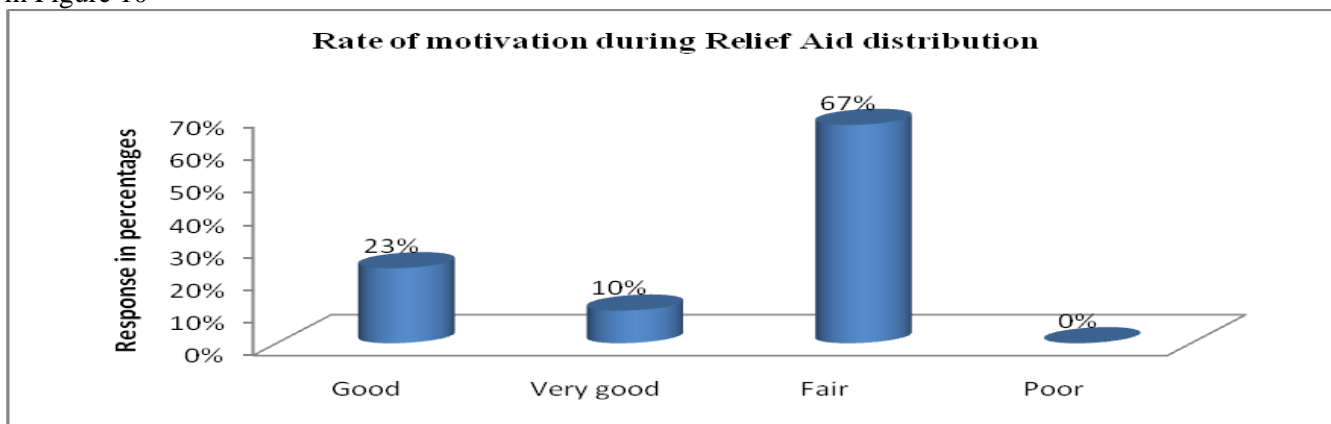


Figure 10 Rate of motivation during Relief Aid distribution
Field data, 2017

As indicated in Table 4.11. (23%) of the respondents indicated that motivation during Relief Aid distribution was good due to field allowances. (67%) of them indicated that motivation during Relief Aid distribution was fair due to security issues, untimely and inadequate allowances and lack of staff promotions. while (10%) of them indicated that motivation during

Relief Aid distribution was very good due to opportunities to interact and learn more from beneficiaries. These findings implied that people are motivated and able to work harder and more efficiently if employees are paid on basis of the amount and quality of work performed, managers providing rewards, long term employment, promotion, goal

setting, feedback, and commitment(Frederick Taylor 1963). One of the respondents interviewed had to say:

“The employees who are involved and committed to an organization goals are motivated to increase productivity by provide to motivate employees include, money (bonuses, Stock options, pay), benefits, flexible schedules, job responsibilities and duties, promotions, changes in status, supervision of others, praise and feedback, a good boss, strong leaders,

IV. CONCLUSIONS AND ECOMMENDATIONS

Based on findings, it can be concluded that floods in the region were also attached to some economic benefits. For instance, there was fishing taking place during floods and so residents in flood prone areas could not move away from the flood prone areas. This perception could therefore hamper successful and effective of humanitarian operations such as evacuation. There were also inadequate availability of resources such as money to relocate to safer lands and this could be attributed to low economic status of the majority of the respondents, hence impeding the implementation of some of the operations by the humanitarian organizations. The study also concluded that most of the respondents could not relocate to safer grounds during floods because whatever was given by Humanitarian Organizations was so small that it could not sustain their needs during floods.

The study also sought to find out the influence of local community's social factors on the operations of humanitarian organizations in Lower Kano Plains during flood seasons. Based on this objective, the study concluded that Humanitarian Organizations personal did not understand their culture so they could not help them well during flood management. It was also concluded that majority of the respondents were reluctance to relocate to safer grounds during flooding because of their ties with their ancestors and that they were not ready to leave their ancestor's land. The study also concluded that village elders understood the significance of their ancestral land and as such they would always give them the correct information during floods, which they heavily relied on more than the information given by the humanitarian organizations. It was also concluded that a significant number of the respondents believed that flood was a way through which their fore fathers cleaned them from evil doers and so they could not accept gifts from foreigners during flood.

inspirational people and nurturing organizational culture”(Field data, 2017).

This shows that good employee motivation enhance service delivery and hence good response to floods. Similarly, Islam (2006) found that motivation of employee's offers may benefits to the Organisation and also to the employees. This suggests the importance of motivating employees. Motivation acts as a technique for improving the performance of employees working at different levels.

The study found out that quite a number of challenges are faced by relief aid workers during relief aid distribution in Kenya. Therefore, this study recommends that employee-manager relationship should be enhanced to enable the organization to achieve the long term goals. This would be achieved by managers adopting organizational culture that is open to communication and democratic style of leadership. Bottom up decision making culture should be encouraged by the management. The study found out that there was poor communication between employees and top level management. Therefore, the study recommends that managers need to involve workers in decision making and empower them through trainings. The study found out that money was not the only motivator but working conditions and other incentives motivated staff to work effectively like trainings, foreign trips/team buildings, promotions, rewarding of best staff and open culture of communication. This aspect of motivation according to the staff suggestions increases commitment and team spirit.

On challenges facing the humanitarian organizations during flooding, the study concluded that poor communication between the managers and the field workers and between the managers themselves could hamper good operations by the organizations. The study also concluded that relief supplies into the organizations warehouses was fair since there were many challenges encountered during transportation of the relief supplies like poor donor supply due to lack of communication and planning and poor road networks. Poor roads were the major cause of delays of relief supplies into the organizations warehouses due to fewer efforts by the Government to construct and repair the roads infrastructure in the region. It was also concluded that there were measures in place for staff motivation in the organization which included differentiated salaries, field allowances, promotions and yearly salary increment even though they

suggested that an effective criteria needed to be established.

The government, through various ministries concerned with community development and disaster management, should design sustainable mitigation measures such as economically empowering the communities to minimize the impact of floods and the associated risks not only in Lower Kano Plain area but also in other flood prone areas.

It emerged from the study that social factors discussed herein had an influence on vulnerability to flood risk. There is need for the government to prepare and mitigate the consequence of floods by assisting the most honorable like orphan, women's, the aged and widows to build flood proof/resistant house or houses rising above the ground. Suitable flood prevention materials and equipment should be made available by the govern men in such risky Ares at subdued rates. Affected households should be given an option of being relocated to safer sides. The results of this study revealed that economic factors had a great influence on vulnerability of households to flood rise. Official response only deals with relief to keep off starvation

and despise with little attention to the economic recovery of the community on long term basis. Based on this finding, this study recommends that, emergency and disaster response, and preparedness be increased by the government to bring about sustained resilience of Nyando communities through diversification of livelihood and copying strategies.

On the impacts of flood on households, this study found out that homes, roads, business, education and households' help were most imparted by floods. The study recommends that the county government of Kisumu set aside funds of emergency, build strong infrastructure like schools, hospital and bridges by adhering to laid down flood proofing regulations, building well equipped rescue centers, hospitals and investing more on preparedness. Kisumu county government initiative to control house construction in the basin and across the natural drains should also be increased. Multispectral approach food mitigation as opposed to single sector should be should be promoted as there are inter-linkages in terms of flood impact on various aspects of society.

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