UNIVERSITY OF AGDER

Promoting Private-Public Synergies for Managing Flooding in Kampala City

A case study of Bwaise, Parish III, Kawempe Division

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This Master's Thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.

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Declaration

I, **Susan Ajambo** hereby declare that this thesis: **Promoting Private-Public Synergies for Managing Flooding in Kampala City: A case study of Bwaise, Parish III, Kawempe Division,** is my original work and has not been previously submitted either in part or in whole to any institution of higher learning for any kind of award.

Name: Susan Ajambo **Date:** 3rd/ June/ 2013 **Place:** Kampala

Abstract

Many cities in the world, particularly those in Africa are faced with growing problems associated with flooding. Increased rain frequency and intensity alongside other factors such as settlement in flood plains, poor waste management, and increased surface run off exacerbate the situation. This study was undertaken to assess the possibility for effective collaborative management of floods in one of the cities in East Africa: Uganda. The focus was on effective reduction in vulnerability and risks from flooding through collaborative action. Local perceptions of why floods occur were explored and how communities adjust to them. Further, the possibility for collaborative action between the authorities and the flood prone communities was considered. In addition, the study attempted to establish a model with regard to how collaborative action should be organised.

Qualitative methodologies were used in this study and they included; unstructured interviews, observations, focus group discussions and document review. Study findings revealed the diversity in perceptions with regard to the causes of flooding. The identified causes were categorised into those that were internal to the community and those that were induced. Community coping strategies were found to be effective only in the short run and a suggestion was made that a better approach should incorporate both the short term and the long term strategies.

A further revelation pointed to the possibility for establishing collaborative flood management structures and was used as a basis to compile a model. However, it was acknowledged that though collaboration was possible it needed reconciliation of views and changes in attitude for it to be forged meaning fully. KCCA was considered, to be the best position to initiate such collaboration especially since it had the capacity and the resources to do so.

It was thus concluded that synergy was possible and a model on how it can possibly be organised was presented.

Key words: Private- public collaboration and Disaster Risk reduction

Acknowledgement

I am happy to express my sincere gratitude to the Norwegian Government and the Norwegian people at large for the study opportunity in Norway and for providing all the necessary financial support through the NOMA scholarship without which it may not have been possible to pursue this program.

I am also grateful to my supervisors; Arne Olav Øhyus and Sherry Bempah for the advice, support and guidance as I worked on this thesis. I also thank the staff and administration of the Department of Development Studies, Faculty of Economics and Social Sciences, University of Agder for the academic and moral support all the way through the program.

My fellow students on the Masters in Development Management programme are appreciated for the discussions on fronter and face book that provided timely responses to questions enabling me to follow through.

All my study participants are acknowledged both form KCCA and in Bwaise III parish. Thank you so much for the information that enabled me to come up with this report.

To all not mentioned, thank you so much

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Abbreviations

ARSDRR	-	Africa Regional Strategy for Disaster Risk Reduction
AU	-	African Union
CCCI	-	Cities and Climate Change Initiative
DRR	-	Disaster Risk Reduction
DRRC	-	Disaster Risk Reduction Committees
FGDs	-	Focus Group Discussions
IIED	-	International Institute for Environment and Development
KCC	-	Kampala City Council
KCCA	-	Kampala Capital City Authority
MDGs	-	Millennium Development Goals
NEPAD	-	New Partnership for Africa's Development
NGOs	-	Non-Governmental Organisations
UN	-	United Nations
UNISDR	-	United Nations International Strategy for Disaster Reduction
WB	-	World Bank

1.0 INTRODUCTION

The term "natural disaster" is used in reference to a hostile event resulting from natural processes of the earth that impacts vulnerable communities causing substantial damage, disruption and possible causalities and leaving the affected communities unable to function normally (Kreimer et.al, 2003, p.4). Natural disasters, which may be human induced or not, involve two basic components: a powerful natural force and disruption of a state of normalcy enjoyed by a community on a day to day basis. The affected community is defenceless against the powerful natural force and unable to cope without external intervention (Cap-Net-UNDP, Nile IWRM-Net, ISDR and UNOCHA, 2009, p. 5). The magnitude of these events vary: some kill and / or affect large numbers of people directly while others affect only a small population directly. Others involve small events that have a cumulative impact on the society (Pelling, 2003, p. 16). As such, regardless of the number of people killed or affected by a particular disaster, all natural disasters are important events requiring urgent attention.

Many countries of the world are frequently subjected to various natural disasters which undermine development efforts thereby retarding growth (Singh, 2010, p. 2). Worldwide, the number of people affected by and the damages from natural disasters are on the increase. In the year 2011, the number of disaster victims was 244.7 million. It was the largest registered since 2003. In the same year, estimated economic losses were US$ 366.1 billion which exceeded the record (US$) 246.8 billion registered in 2005 (Debby, Femke, Regina and Sylvain, 2012, p.12, 13 and Debarati, 2011). Examples of natural disasters include floods, severe weather, volcanic eruptions, earth quakes and other physical processes. This essay however, will focus on flooding, particularly urban flooding.

Floods were the major cause of disaster victims and damages in the year 2011 and they accounted for 56.7% (138.9 million) of the total number of disaster victims (Debby et.al, 2012, p.12, 13). They are a global phenomenon and between the years 2010 and 2011, destructive floods occurred along the Indus River basin in Pakistan, Queensland, Australia, South Africa, Sri Lanka, the Philippines, Serrana region of Brazil, following the tsunami on the north-east coast of Japan, along the Mississippi river, as a consequence of Hurricane Irene on the US East Coast, in Pakistan's southern Sindh province and in large areas of Thailand, including Bangkok (Abhas,

Robin and Jessica, 2012, p. 19). In addition to causing the death of many people, floods lead to extensive economic and financial damages thus they pose a serious development challenge.

Specifically, city floods are more disastrous compared to those that occur in other environments. This is because cities are characterized by large populations with interrelated functioning systems based on capital stock (Abhas et.al, 2012, p. 21) as such; disasters cause massive destruction and involve many casualties. With regard to floods, the United Nations International Strategy for Disaster Reduction (UNISDR Africa), 2011, p.5), observed that they can be very devastating and a single flood event has the potential to wash away overnight, decades of development efforts. City floods, present multiple short and long term consequences for people and economies and cause damages that require years to repair. They can be a major source of pollution as drainage overflow picks up potentially harmful substances from surfaces like oil, household chemicals and faecal material and transfers them to water sources. This poses major health risks to humans and the natural environment. Other consequences include: death from drowning; high likelihood of electrical shock; increased risk for water-borne and vector-borne diseases; damage of lifeline systems such as the water and sanitation infrastructure, among others (Cap-Net-UNDP et.al, 2009, p. 8). It is therefore significant to minimize the adverse effects of floods through effective precautionary measures, timely, appropriate and efficient organization and delivery of the needed services.

Flood associated impacts are particularly harsh for developing countries, posing a great threat to their ability to achieve the Millennium Development Goals (MDGs) and sustainable development. In these countries, flood fatalities are usually high due to the disproportionate impact of flood events on the poor and the socially disadvantaged, the majority of who reside in informal settlements prone to regular flooding (Abhas et.al, 2012, p. 20). A very high proportion of urban population growth in developing countries, takes place in dense, lower quality informal settlements called slums which are often at high risk of exposure to disaster hazards, particularly floods (UNISDR, 2010). Slummy areas are characterized by inadequate housing, infrastructure and service provision which increase the risk of flooding in these areas.

Uganda, one of the developing countries located in East Africa, experiences floods in its capital city Kampala city, as seasonal occurrences in periods of intense rainfall and el-Niño phenomena. Besides causing death due to drowning, the floods seasonally destroy public health facilities and trigger outbreaks of water borne diseases and malaria. In 2010, Kampala city floods affected over 350,000 people (Ministry of relief, disaster preparedness and refugees, 2010, p. 7). The most affected were the poor slum dwellers that are significantly vulnerable because of their environment- reclaimed wetlands and swampy grounds (Lwasa, Koojo, Mabiriizi, Mukwaya and Ssekimpi, 2009, p.8).

Managing floods in Kampala city city is the responsibility of Kampala city Capital City Authority (KCCA), a legal entity, established by the Kampala city Capital City Authority Act (2010) to govern and administer the City on behalf of the Central Government. KCCA works in partnership with international agencies like the World Bank and Non-Governmental Organisations (NGOs) to manage the flooding problem. Overtime, flood mitigation initiatives have focused on engineering works of maintaining and improving water channels (Musisi, 2012 and Musoke, 2011, p. 35 and 36). As emergency response, NGOs oftentimes provide equipment for cleaning and house hold items to the affected communities. Some of the flood prone communities too are occasionally mobilised by their leaders, civil society organisations or NGOs to clean drainage channels (remove solid waste).

However, very little impact has been registered in terms of reducing vulnerability and risks associated with floods have remained high. Flooding continues to be an urgent environmental and development concern in Kampala city (UNDP, 2012). Musoke (2011, p. 37) and Tenywa, Nasimanya and Ssengendo, (2008, p. 2), attribute the little impact registered by flood mitigation efforts to factors such as: uncoordinated practice, inadequate involvement of communities, unsustainable provision of hand outs and the negative attitudes by community members towards the interventions in place.

In a bid to reduce vulnerability and risks from flooding in Kampala city, KCCA and UN-Habitat's Cities and Climate Change Initiative (CCCI) formed a partnership in 2012 with a focus on Disaster Risk Reduction (DRR). DRR refers to systematic development and application of

policies, strategies and practices to minimize vulnerabilities and disaster risk and avoid the adverse impacts of hazards within the broad context of sustainable development (AU et.al, 2004, p.4). It is a proactive approach that emphasizes preventive action as opposed to relief work (African Union (AU), New Partnership for Africa's Development (NEPAD) and the international strategy for Disaster Reduction (ISDR), 2004, p.4). Vulnerability and risk reduction require bridging the relief-rehabilitation gap by investing in developing people's capacities to prepare and to cope with future disasters. The people who are directly affected do not only participate in mitigation efforts but are also enabled to respond promptly and flexibly to. This way, it is hoped that the underlying causes of vulnerability can be uprooted and the risks from disasters minimised.

The partnership between KCCA and UN-Habitat's Cities and Climate Change Initiative (CCCI), aims at developing an integrated strategy and action plan for managing the flood problem in Kampala city. The strategy is projected to incorporate policy recommendations and a mix of cost effective strategies that link urban drainage needs with other services, systems, functions, spaces and storm water flows. Currently, an assessment of the city's flood risk involving two spatial levels - city wide assessments and a detailed risk assessment of Bwaise community is on-going as a basis for developing the strategy and action plan (UNDP, 2012). This is in line with the Africa Regional Strategy for Disaster Risk Reduction (ARSDRR) (2004) which advocates for transforming disaster management towards a risk reduction approach.

The proposed strategy and action plan for Kampala city, presents an opportunity for designing interventions that focus on promoting societal safety and resilience. That way, it conforms to the focus in the DRR approach, which is to strengthen community coping capacity in a bid to promote resilience (Cordaid and International Institute of Rural Reconstruction (IIRR), 2011, p.1). The DRR approach emphasizes synergy and coordination, sharing efforts and benefits. It recognises that strong public-private partnerships characterised by well- functioning representative community organisations are prerequisite for effective programmes (Cordaid and IIRR, 2011, p.3). Public-private partnerships are argued to promote the ability to problematize multiple and complex processes and thus to a larger extent it enables comprehensive understanding of the causes and effects of the problem at hand (Keeley and Scoones, 1999, p. 5).

Zimmermann (2011, p.5), also observed that for rapidly urbanising Africa, community knowledge and resources need to be harnessed into DRR efforts. This implies that involving the affected communities in identifying, managing and implementation of risk reduction measures is inevitable for effective DRR programmes.

1.2 Problem Statement

Preparations for the development of an integrated strategy and action plan to manage the flood problem in Kampala city are underway. However, if significant results in vulnerability and risk reduction as well as strengthening capacity to cope with flood hazards are to be achieved, it is imperative that the framework of strategies and planning is efficient. The proposed strategy and action plan need to be comprehensive-incorporating perceptions and contributions of multiple actors across multiple interfaces and should be based on informed decision making.

The on-going assessment of the city's flood risk is an important step towards the development an efficient strategy and action plan. The findings will facilitate understanding of the causes and effects of floods and thereby inform the design of effective measures to minimize them. Equally important though, is information on the stakeholders in the Kampala city flood problem. It is important to know who they are, their interests and how these can be harnessed in the process of managing floods. This information is essential for the design of effective collaborative strategies which are key to successful reduction of vulnerability and risks according to the DRR approach. It is also important that the information used in planning is relevant and reliable thus the need for research into real life situations and contexts. Only such research provides evidence likely to be relevant in local contexts.

In a bid to contribute towards the development of an efficient flood management strategy based on collaboration, this study set out to investigate the possibility for collaboration between KCCA and the people who are directly affected by Kampala city floods. It was conducted among the people who reside and work in flood prone areas and it sought to understand their 1st hand experiences with the floods, their perceptions of the causes of floods and perceptions on synergy with KCCA and how such collaboration can possibly be organised. It also examined the

processes of on-going flood mitigation interventions so as to establish the different actors involved and the roles undertaken by the actors.

The findings of this study are significant in the planning process and the design of the proposed strategy and action plan for managing floods in Kampala city. Community experiences with floods provide information on community vulnerability and the risks from flooding. As such, it is informative for designing interventions to reduce them. In addition, this study is an important reference for designing an effective framework for collaborative, sustainable and cost effective flood mitigation interventions. It provides insight into how synergy can be organised at community level, the roles that the community can take on and what can be done at households and community level to reduce vulnerability and risks. It is thus a key reference for designing an effective implementation strategy based on collaboration. Furthermore, the findings are useful references for policy recommendations and decisions in the area of DRR and sustainable development at large. Other cities faced with a flood problem can also draw lessons from this study.

The study was conducted in Bwaise III parish, a slum area whose poor inhabitants are exposed to frequent flooding. The parish is located in a low lying area with a high water table and it is characterised by poor drainage thus subject to seasonal flooding during the rainy seasons. The area is a typical slum, highly built up with informal, temporary housing. It is located in a valley which is also a reclaimed wet-land with a high water table of less than 1.5 m below ground level in most of the area (Kulabako, 2010, p. 3 and Twinomugisha, 2008, p.11). The drainage is not only inadequate but also in a poor state as most of the drainage systems are fully silted (Gifford, 2006, p.141). As such, the Parish floods so many times a year as long as it rains making her poor residents highly vulnerable.

1.3 Study Objective and Research Questions

1.3.1 Main Objective

To assess the possibility for collaborative management of floods in Kampala city and how such collaboration can possibly be organised so as to promote sustainable reduction in vulnerability and risks from flooding.

1.3.2 Research Questions

1. What are the causes and effects of flooding in Bwaise III, from the perspective of the community and KCCA?
2. What coping strategies, if any, have been adopted by the community and KCCA to minimise the effects of flooding and how effective have they been?
3. What are the key constraints to minimising the effects of flooding and how can they be overcome?
4. In what ways can KCCA and the households and/ or the community of Bwaise III Parish work together to reduce vulnerability and risks from flooding?

1.4 Research Area: Kampala City, Bwaise Parish III

1.4.1 Kampala City

Kampala city is constitutionally the capital city of the republic of Uganda and it is located in the central region. It is located on latitude 0 degrees 19'N, Longitude 32 degrees 35 E (Twinomugisha, 2008, p.4). It occupies an estimated area of 195 sq.km and lies at an average altitude of 3,910 ft. (1,120 m) above sea level. It is situated on a plateau spread over 24 low flat topped hills that are surrounded by wetland valleys. The city lies within the Equatorial region and experiences an equatorial climate with cool breezes from Lake Victoria and the mountains. The average annual rainfall received in Kampala city is 1,200mm, with temperatures ranging between 17 and 22^{o}C (Gifford, 2006, p.136). The rain occurrence pattern is however changing and it is expected that its intensity and frequency will continue increasing due to climate change.

Administratively, the city is governed by Kampala Capital City Authority (KCCA) a legal entity, established by the Kampala city Capital City Authority Act (2010) which replaced Kampala City Council (KCC). According to Section 5(3) of the act that became effective in March 2011, the Authority governs and administers the City on behalf of the Central Government. The act brought the governance of the city's affairs directly under the supervision of the central Ugandan government. KCCA is headed by the executive director who is answerable to the Minister for Kampala city Capital City. The city is divided into 5 divisions, 99 parishes and 811 sub-parishes.

The city divisions are; Central, Makindye, Nakawa, Kawempe and Rubaga and each of the divisions is headed by a popularly elected mayor who is largely ceremonial (KCCA, 2012).

The city is characterised by increasing population growth with 39.6 per cent of the national urban population. According to the 2002 population census, Kampala city had a population of 1,189,142 and a growth rate of 3.7% (Uganda Bureau of Statistics (UBOS), 2009, p.107). This trend has led to population pressure amidst inadequate planning and as a result informal settlements have been developed in high risk and prohibited areas such as wetlands which are especially prone to flooding. Much of the city is built on former wetlands and swampy ground and flooding is an urgent environmental concern for the city (UN-HABITAT, 2008). A very big proportion of Kampala city's population; over 60 % (Shelter and settlements Alternatives: Uganda Human Settlements Network (SSA/UHSNET), 2013) live in informal settlements/ slums, the majority of whom are the urban poor and the disadvantaged.

Alongside the challenge of unplanned urbanisation, other factors like poor waste management, particularly solid waste that blocks water channels increase exposure to flooding and secondary hazards in Kampala city. Secondary hazards include health issues like disease outbreaks which particularly afflict the poor. Floods are experienced seasonally in periods of rainfall. The city also faces the challenge of surface run-off, coupled with fragile drainage systems which makes the infrastructure, housing, social services and livelihoods vulnerable (UN-HABITAT, 2008).
Life in Kampala city slums is characterized by Poor drainage systems, frequent epidemics like cholera, diarrhoea, malaria and dysentery due to flooding, poor quality housing facilities, overcrowding, poor quality and unsafe water, poor sanitary conditions, poor garbage disposal, high levels of underemployment, low education and literacy levels, high level of household dependency ratios and inadequate social services and amenities (Gifford, 2006, p.141). Such features are worsened by the swampy physical conditions which make such areas significantly vulnerable to both the floods and the effects of the floods. Below is a map of Uganda showing the location of Kampala;

Figure 1: A Map of Uganda showing the location of Kampala City

Source: Google maps

1.4.2 Bwaise Parish III

The Parish is one of the slums in Kampala city found in Kawempe division. It is bordered by Kawempe to the north, Kyebando to the east, Mulago to the southeast, Makerere to the south and Kasubi to the southwest. It is located approximately 4km from the Kampala city Centre and has an area of 57ha. It is divided into six local administrative zones namely: Kamalimali, Bokasa, Bugalani, St. Francis, Katoogo and Kawaala road (Kulabako, 2005, p. 3). The Parish is located in a low-lying swampy location, a terrain which makes it significantly vulnerable to flooding.

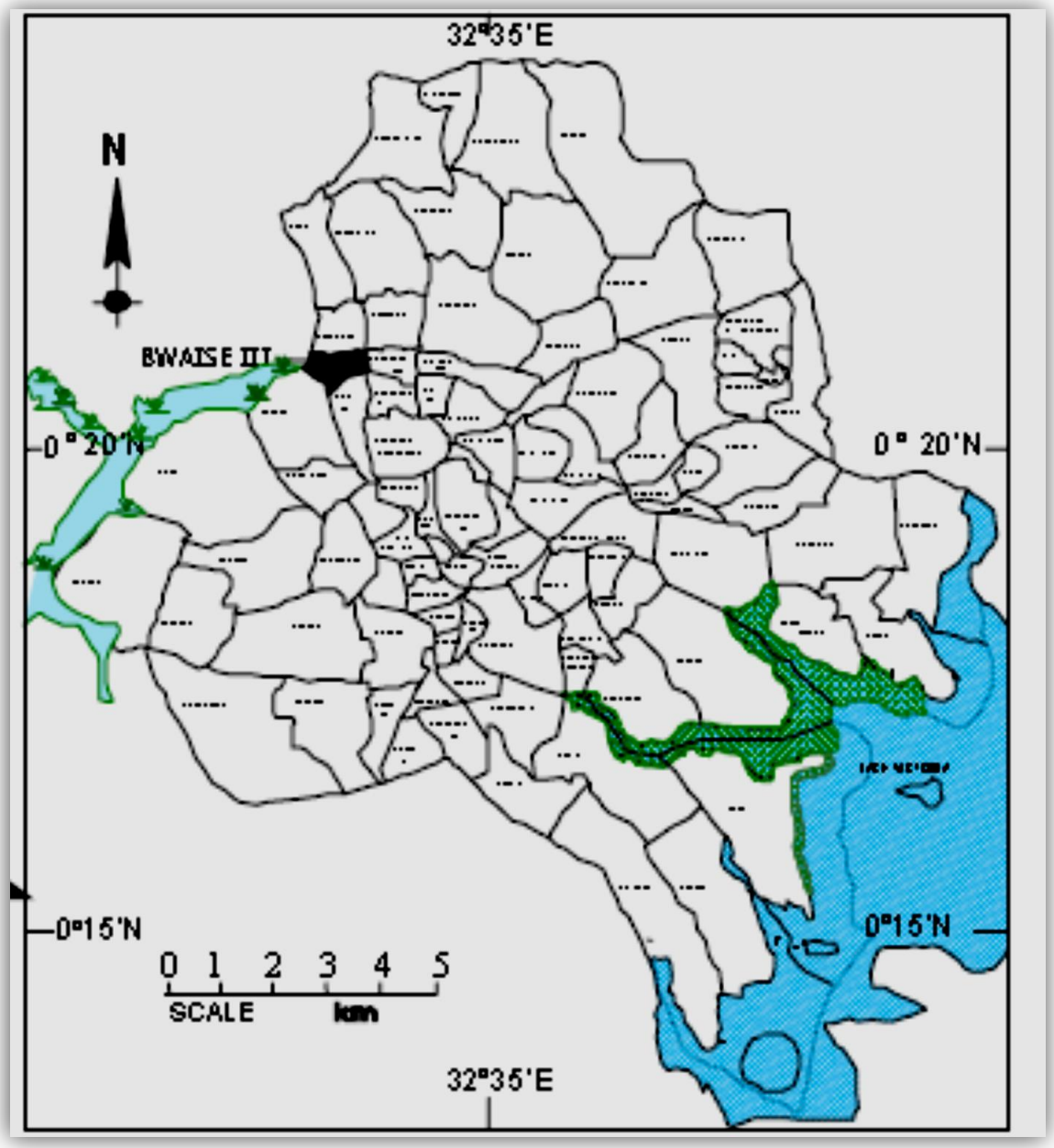
Indeed, it experiences frequent flooding and the UNDP (2012) refers to it as Uganda's representative 'hot spot' with regard to flooding.

Bwaise III Parish is densely populated and according to the 2002 population census, it had a population of about 15 000 people with an annual population growth estimated at 9.6 percept which is above the national average (Katukiza, 2010). Its average population density was 27000 persons/km2 (Uganda Bureau of Statistics (UBOS), 2002). The majority of the residents are low income earners, involved in small scale activities within the area. The Parish is also largely unplanned and highly built up with a mixture of housing, shops, schools, religious buildings, markets and health centres concentrated in the same area. As such a significant number of people, households, infrastructure, livelihoods and social services are exposed to severe impacts of destruction, damage, dampness and health challenges whenever it floods.

The everyday life of the residents of Bwaise III is interrupted whenever flooding occurs. In addition to many families relocating during the rainy seasons (often twice a year), infrastructure such as Schools, health centres and shops are often made temporally inaccessible. Classrooms and school grounds for example, are often flooded which forces the schools to close temporarily. This justifies it as a study area for this research.

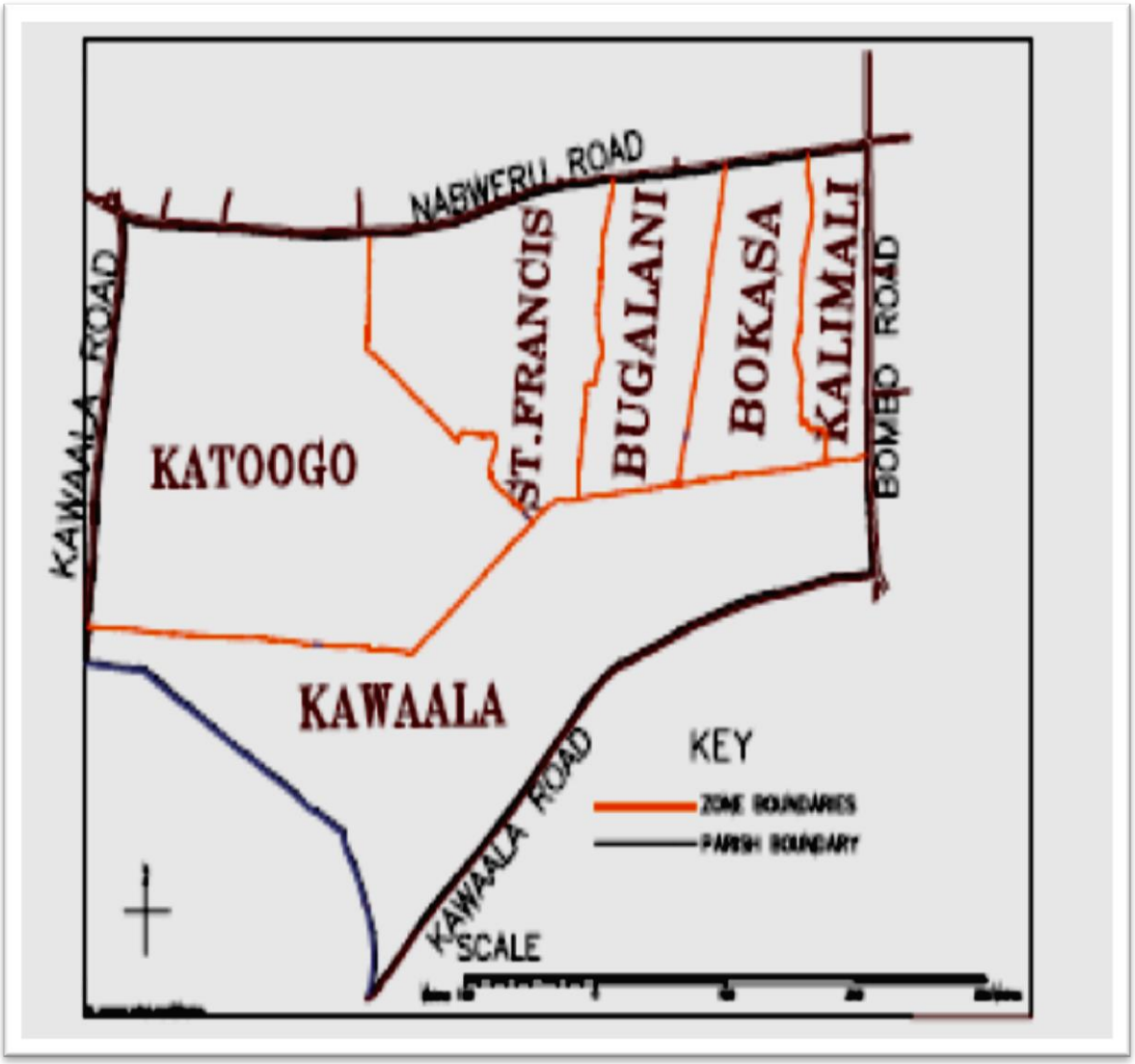
Below are two maps: one of Kampala city showing the location of Bwaise III and another showing its six administrative zones;

Figure 2: Map of Kampala City showing the location of Bwaise III



Source: Kulabako (2005, p.4)

Figure 3: Administrative zones in Bwaise Parish III



Source: Kulabako (2005, p.4)

2.0 LITERATURE REVIEW

This section presents a review and analysis of existing literature related to the research topic. Specifically, this section examines literature about the DRR approach, the causes and effects of urban flooding particularly, the causes of flooding in Kampala city, the constraints to effective reduction of risks from flooding and the importance of private- public collaboration in disaster risk reduction. In addition, the section presents the theoretical framework showing the perspective through which the research topic was examined.

2.1 The Disaster Risk Reduction (DRR) Approach

Disaster Risk Reduction is a crucial component of wider plans aimed at addressing development challenges. According to the United Nations (2010, p. 16), DRR refers to policies , strategies and measures aimed at making people, villages, cities and countries more resilient to hazards and reduce risk and vulnerability to disasters. It is a comprehensive approach to disaster management and it includes decisions and activities in the areas of prevention, mitigation, preparedness, response, recovery and reconstruction and rehabilitation. Prevention, mitigation and preparedness are undertaken so as to avoid or minimize the impact of potential disasters. On the other hand, recovery and reconstruction focus on reducing the impact of hazards through actions aimed at restoring functioning of affected communities and systems. DRR is thus a complex and comprehensive approach with great potential for effective disaster management.

Disaster Management has within the last decade undergone a paradigm shift from the traditional centralized approach (reactive emergency management) towards a decentralized approach - incorporating DRR (Yodmani, 2000, p.8). The decentralized approach integrates actions aimed at mitigating the impact of disasters as well as preparing for them in development planning. It perceives disaster management broadly, as a combination of emergency response and measures to reduce disaster risks (Ahrens and Rudolph, 2006, p. 208). It places more emphasis on preventive action than on relief management. As such, the approach is forward – looking and a key determinant for sustainable development. Therefore, in consideration of the increase in the numbers and effects of disasters, the decentralized approach is imperative if some lives are to be saved and if the MDGs and sustainable development are to be achieved.

However, Integrating DRR in development planning is faced with challenges ranging from financial constraints to low prioritization of DRR on development agendas. Schipper and Pelling (2006, p.26) note that DRR work is less visible compared to relief work thus it is unattractive for governments chasing votes and international recognition. International funds are also more readily availed when countries declare a state of emergency than for DRR work. In addition, it is widely acknowledged that some disasters are a consequence of failed development, yet the blame for disasters is in most cases is placed on the disaster other than the conditions of vulnerability. The above factors do not only act as disincentives for the prioritisation of preventive action on development agendas but also as barriers to the achievement of the MDGs and sustainable development. As Anderson and Woodrow (1998), cited in Schipper and Pelling (2006, p.26) argue, they steer vulnerability in the long term.

The need for DRR is more urgent in urban areas or cities than in other environments because the effect of disasters on cities is usually more ruinous. This is because, the majority of the world's population and the vast majority of wealth are concentrated in cities and the number of causalities and damages from disasters are usually massive. It is also of concern that the world's mega cities are located in areas prone to disasters and in smaller urbanising cities, the infrastructure and institutions are ill equipped to cope with disasters (Cassidy and Sophie 2012, p. 8). DRR is thus important for the world's mega cities as well as the urbanising cities. In fact, the urbanising cities have the opportunity of factoring DRR in urbanisation plans so as to build resilient cities.

Recognising the significance of building cities that are resilient to disasters, the UN founded a campaign named; *Making Cities Resilient-My City is Getting Ready!* in May, 2010. The campaign seeks to encourage and support all urban centres to reduce risks and become resilient to disasters. By signing on to the campaign, cities pledge to take steps aimed at increasing resilience to disasters. The campaign acknowledges that cities build resilience through a process of urbanization and planning, on one-hand, and the result of specific actions to reduce disaster risk on the other. It further advocates for city-level resilience- activities taken at city level in selected urban centres (Cassidy and Sophie (2012, p. 10).

2.1. 1 Hyogo Framework of Action (HFA)

A key instrument for implementing Disaster Risk Reduction (DRR) is the Hyogo Framework for Action (HFA) which was formulated in 2005 by the United Nations (UN) to guide actions aimed at systematic reduction of disaster risks (UN, 2005, p.12). It provides general principles that should be localized by national governments to suit local contexts. Its overarching goal is to build resilience of nations and communities to disasters, by achieving substantive reduction of disaster losses in lives, and in the social, economic, and environmental assets of communities and countries by 2015. Based on the principles in the HFA, the African union developed a comprehensive DRR strategy for Africa- African Regional Strategy for Disaster Risk reduction (ARSDRR) in 2004. This was in a bid to localise the HFA principles to the African context. The ARSDRR was re-affirmed in 2009 during the Second Africa Regional Platform for DRR, in Nairobi, 5-7 May, 2009. The strategy stresses private – public partnerships, good governance, strong local level organizations and use of participatory approaches as prerequisites for effective DRR Practice (Cordaid and IIRR, 2011, p.3 and UNISDR, 2010). As such, African countries are guided by the principles contained in ARSDRR in planning, designing and implementation of DRR programmes.

2.2 Causes and effects of Urban Flooding

Urban flooding is a major problem in many cities worldwide. It is a serious and growing challenge to development and the lives of people.

2.2.1 Causes of Urban Flooding

The causes of flooding in cities are various, ranging from the location of the cities to challenges of urbanisation and population increase, to factors related to climate change like heavy rainfall overwhelming drainage capacity.

Location of Cities in Areas Prone to Flooding: A major cause of urban flooding is the physical location of some urban centres. According to Cassidy and Sophie (2012, p. 8), many of the world's mega cities are situated along flood prone coastlines or along rivers. This makes them vulnerable to extreme weather events and sea level rises and exposes them to flooding and coastal erosion. Mumbai, a mega city in India, for example, is built on 7 islands and it is only 5m above low tide level which exposes it to coastal flooding. On the other hand, Saijo city in Japan

is located on a mountainous terrain in Ehime prefecture and as such it is exposed to extreme rainfall, typhoons, mud and land slides and flooding. In 2011, heavy rains due to the monsoon season adversely affected coastal cities in Thailand, the Philippines and India among other cities (Debby et.al, 2012, p.26).

In the developing world, a very high proportion of the urban population growth, particularly the poor settle in natural flooding areas such as valleys, swamps and wetlands (Abhas et.al, 2012, p. 22). These areas do not only have a high water table but also soils with high moisture content like clay soil. This means that infiltration in such areas is less compared to areas with other types of soil like sandy soil. The unregulated construction in such areas means flooding for those settlements as a result of increased surface run off amidst less infiltration. In addition, such areas are generally characterised with inadequate and inappropriately designed drainage systems which exacerbates the flooding problem.

Changes in Land Cover due to Urbanization: Urbanisation leads to changes in land cover which consequently causes flooding. It is characterised by construction of houses, roads and paved impermeable areas on large pieces of land which reduce water infiltration and increases surface runoff thereby causing floods. Constructions alter the land surface through soil compaction and removal of vegetation and the natural water ways which affects the natural water flows. In urbanised areas, natural waterways which are flexible and can adjust to changes in the frequency of heavy rain are replaced with concrete channels which often get silted up. A combination of the above factors, increases surface runoff from rain fall and exposes many urban centres to frequent flooding (Douglas, Alam, Maghenda, Mcdonnell, Mclean and Campbell, 2008, p. 189).

The challenge of increased surface run off is exacerbated by the low standard of the drainage systems in many countries. In addition to the drains being inadequately constructed, they are poorly maintained and often get blocked by silt, construction debris or solid waste. A study about flooding in Africa, conducted by Douglas et.al (2008, p. 190) found that lack of attention to waste management and to the construction and maintenance of drainage channels are a major factor aggravating the flood problem in Africa. On the other hand, Marka, Weesakula, Apirumanekula, Aroonneta and Djordjevic´b (2004, p. 284) observed that many cities in the

developing countries that were growing rapidly, lacked the funds to extend and rehabilitate existing drainage systems as such the extent and frequency of flooding that they experience is higher than in other cities. The low standards of the drainage systems amidst increased surface runoff account for higher flood incidences and magnitude in cities in the developing world.

Effects of Climate Change: Climate change has been widely acknowledged as one of the drivers of natural disasters including flooding. According to UN habitat (2009, p.7), the effects of climate change are manifested in extreme climatic events such as, rises in sea level, changes in rain fall patterns, floods and storms. Such events have continued to increase at an unprecedented level and largely affect towns and cities which are faced with issues of poverty, inadequate infrastructure and environmental degradation (International Institute for Environment and Development (IIED), 2010, p. 1). The rise in sea level is a challenge to coastal cities and leads to flooding and coastal erosion. Examples of cities affected by climate change include; Esmeraldas-Ecuador, Maputo-Mozambique and Sorsogon- Philippines. In 2006, Sorsogon city was hit by two super-typhoons, which caused widespread devastation and it was projected that it would experience prolonged monsoon rains causing rainfall exceeding 2,800 to 3,500 mm per year. Similarly, it was predicted that Maputo would experience sea level rises as a result of global warming which would lead to flooding in its lowest areas (UN habitat, 2009, p.8 and 10).

2.2.2 Effect of Urban Flooding

The effect of flooding can be grouped into three: direct damages, indirect damages and social consequences. Direct damages relate to material damage and direct effect on people, indirect damages relate to disruptions and costs arising from flood while social consequences relate to psychological effects of a long term nature (Marka et.al, 2004, p. 285).

Direct Damages: Urban flooding causes direct damages which are usually catastrophic. They are a major challenge to development because of the huge economic losses in terms of production as well as damage to property and goods involved. In 2011, flooding in Thailand, for example, caused an estimated US$ 40.0 billion of damages. Major industrial areas with production facilities were affected and it was estimated that 25% of the world's supply of components for computer hard drives manufactured in Thailand were directly impacted. Such

damages are significant because their impacts affect the whole world due to the networked world economy (Debby et.al, 2012, p.26). Urban floods also damage buildings and other private and public infrastructure like roads. In addition, urban floods claim and affect many lives given the higher concentration of people in cities. In 2011, heavy rains due to the monsoon season claimed hundreds of lives and adversely affected millions of people in Thailand, Cambodia, Bangladesh, the Philippines and India (Debby et.al, 2012, p.26). Urban floods, particularly affect the urban poor in developing countries because they are concentrated in flood prone areas which are characterised by poor service provision. This makes flood impacts worse for them.

Indirect and Social Damages: Urban flooding also leads to secondary and often long term effects which include: limiting or completely hindering the functioning of traffic systems in case of street flooding (Schmitt, Thomas and Ettrich, 2004, p.302). Such effects lead to delays and associated consequences such as loss of business and opportunities. Other secondary effects are disease out breaks, reduced nutrition and educational opportunities and loss of livelihoods. This way, floods erode community resilience and other development goals especially when the community has to cope with floods constantly ((Abhas et.al, 2012, p. 21). Marka et.al (2004, p. 285) also identifies effects of a more psychological character such as decrease of property value in frequently flooded areas and delayed economic development.

2.3 Causes of Flooding in Kampala city

The causes of flooding in Kampala city are diverse and they include: encroachment on wetlands and settlement in low lands and flood plains, inadequate drainage systems and poor waste management, urbanisation and climate change.

2.3.1 Encroachment on Wetlands and Settlement in Low Lands and Flood Plains

A major cause of flooding in Kampala city is encroachment on wetlands and swampy areas where flood waters would naturally drain. Wetlands are reclaimed and used for construction of commercial and industrial property. This leads to blocking of natural drainage channels thereby causing flooding elsewhere, particularly on the streets (Douglas, 2008, p.195). Kampala city also experiences what Douglas et.al (2008, p.191) refers to as localised flooding particularly in the slums. Many of the slums in Kampala city are located in swampy low lands which make them vulnerable to flooding from surface run off from uphill and natural streams. Bwaise slum, for

example, is located in a swampy valley being surrounded by the hilly locations of Kawempe, Nsooba, Kamwokya, Mulago and Makerere. The flooding problem in Kampala city slums is worsened by the clay soil in swampy locations that allows less infiltration, regular blockage of drainage channels by waste and debris and soil compaction as a result of the area being heavily built up.

2.3.2 Inadequate Drainage Systems and Poor Waste Management

Kampala city is generally characterised by inappropriately built and inadequate drainage systems. Specifically, Kampala city slums are characterised by inadequate infrastructure and sanitation where drainage channels are also open sewers that run through neighbourhoods. Drainage channels are also not cleaned regularly and most of them are silted. In addition, Kampala city faces a challenge of waste management. The standards of refuse collection, transportation and disposal are generally low and as such there is a lot of dumping in open sites and when it rains heavily, solid waste is water-swept into the drainage channels. The problem in low lying areas is worsened by garbage from up gradient areas and more often, drainage channels are blocked by silt and garbage (Musoke, 2011, p. 26). Thus, poor drainage systems and waste management are major causes of flooding in Kampala city. This was also observed by Mabasi (2009, p.4) who noted that a significant proportion of the population in slum areas is not served by solid-waste collection services. Therefore, garbage and plant growth can quickly clog drains, leading to localized flooding with even light rainfall.

2.3.3 Urbanization and Climate Change

Another cause for flooding in Kampala city is the increased covering of the soil with buildings and compacted walkways. Kampala city dominates the urban landscape of Uganda and it accounts for 339.6% of the national urban population. The city covers an estimated land area of 1895 sq km (Lwasa, 2010, p. 167). According to the 2002 population census, Kampala city had a population of 1,189,142 and a growth rate of 3.7% (Uganda Bureau of Statistics (UBOS), 2009, p.107). As such Kampala city's land cover is so much changed and most of it is covered with buildings, roads and impermeable pavements. Most of her soil is compacted and infiltration is very limited which increases surface run off and consequently floods.

It is worse in urban poor settlements such as Bwaise, which are heavily built up. Some of the buildings or infrastructures in slums are constructed in drains thereby obstructing flood water movement (Douglas et al, 2007, p. 191). Indeed, Action Aid (2006) observed that run off in Kampala city slums is six times that which would occur in natural terrain. This is worsened by the effects of climate change which according to Mabasi (2009, p. 3) include; heavy and/or prolonged rainfall which produces very large volumes of surface water in the city, overwhelming the drainage systems. Lwasa (2010, p.167) also noted that due to increased precipitation, flood events increased from an average five in 1993 to nine events by 1997.

2.4 Constraints to Effective Reduction of Risks from Urban Flooding

Various arguments have been raised as constraints to effective management of natural disasters including urban flooding. Recognising that urban flooding is a natural disaster, constraints to effective reduction of disaster risks were adopted as constraints to effective reduction of risks from urban flooding. They include: absence or limited capacity of technical institutions that promote DRR; limited practice of risk identification and weak knowledge management; governance weaknesses and focus on emergency management.

2.4.1 Absence or Limited Institutionalization of Risk Reduction and Disaster Management

A baseline study to establish the status of disaster risk reduction in Africa, found that the lack of or limited institutionalisation of DRR in Africa was a major challenge to the effectiveness of disaster management. In many countries, technical institutions in the area of DRR were inexistent and where they existed, their services were limited by resources and capacity among other constraints. Most policy frameworks in the area of DRR also needed quality upgrading (UNISDR (Africa), 2011, p. 5). Institutional frameworks provide an enabling environment in which local people can be empowered to prevent disasters. They assign responsibilities and show the scope of DRR strategies. However, many countries lack the capacity to design effective frameworks and as such disaster management interventions have failed to adequately help reduce risks.

The importance of institutionalisation is emphasized by Cassidy and Sophie (2012, p. 39) who argue that building resilience to disasters in cities is most effective where city and local level

structures are established. Such structures can be in form of; councils, committees, authorities, agencies, and other local disaster risk management institutions. Local level institutions enable cross sector collaboration while national institutions enable city level collaboration. Institutions are a basis for partnerships and multi stakeholder participation which arguably yields sustainability. According to them many cities that have institutionalised have managed to reduce risks to disasters. They provide examples such as: San Francisco, California (USA) city which is recognised as a leader in sustainability because of the tremendous progress towards building resilience. They note that the strength of the city's resilience was largely the product of comprehensive institutionalization of disaster risk reduction and the participation of a wide range of actors in various programmes, committees and activities (p.45).

2.4.2 Limited Practice of Risk Identification and Weak Knowledge Management

Another constraint to effective reduction of disaster risks is the absence of or limited assessment of risks. The first step in risk reduction is to understand the risks that need to be reduced, however, some countries, particularly in Africa, neither do vulnerability nor capacity assessments before they intervene. This means that their ability to make informed decisions and take informed actions is hampered by unavailability of relevant information. Timely and relevant Information play a crucial role in effective risk reduction. Therefore, absence of such information or failure to make good use of it is a key constraint to effective reduction of risks from disasters such as urban flooding (UNISDR (Africa), 2011, p. 6). The importance of effective utilisation knowledge in risk reduction was long recognised by Whitea, Katesb and Burtonc (2001, p.81) who observed that knowledge influences the approaches used in disaster management through facilitating general understanding of the natural disasters science and its changing focus. A study conducted by Misanya (2011, p.67) too, concluded that indigenous knowledge is an asset for disaster management.

2.4.3 Governance Weaknesses

Disaster risk reduction denotes shared responsibility because it aims at empowering people to take timely and adequate action to protect themselves, their livelihoods and their environment. Yet, governments explicitly regard civil protection against disasters as a key governance responsibility. Therefore, effective risk reduction requires coordination of disasters responses

between the state and the people. On the contrary, (African Union (AU), New Partnership for Africa's Development (NEPAD) and the international strategy for Disaster Reduction (ISDR), 2004, p.7) observed that while most African countries espoused decentralized implementation of disaster risk reduction interventions, devolution of authority to lower administrative levels was limited. This was attributed to the fact that most disaster risk reduction systems are agency-centred and top-down, have inadequate competencies and resources to fulfil decentralized responsibilities, and lack adequate partnerships with communities. This is a major weakness that has overtime hindered effective disaster risk reduction

In addition, Ahrens and Rudolph (2006, p. 210) argue that, effective governance in DRR requires particular attention to be paid to political and economic institutions, as well as factors related to the capacity of relevant individual actors and organizations. They add that the way policies are formulated influences their quality which in turn has consequences for processes including disaster management programming. Indeed, meaningful partnerships in which all actors participate in decision making are a key aspect of governance aimed at reducing vulnerability and risk. The UNDP (2004) cited in Ahrens and Rudolph (2006, p. 210) sums it up through the observation that, 'Participation, rule of law, transparency, responsiveness, consensus orientation, equity, effectiveness, efficiency, accountability and strategic vision are key factors when implementing a governance structure aimed at sustainable development and disaster risk reduction.

Another aspect of weak governance in disaster risk reduction institutions is the low level of gender sensitivity in disaster policies and programmes. There are gender differences in vulnerabilities, disaster impacts, coping strategies and response measures. Yet, most national disaster management frameworks, especially in Africa, lack explicit gender objectives.

2.4.4 Focus on Emergency Management

Another constraint to effective disaster risk reduction is absence in many countries of an integrated approach to disaster management. Disaster Management is understood by many as basically relief work instead of as a combination of emergency response and measures taken to reduce disaster risks. Relief work often focuses on immediate emergency needs, with an

emphasis on food aid distribution and other hand-outs. Consequently, the underlying causes of vulnerability remain. Reactive emergency management is limited with regard to reducing vulnerability and risks from disasters. The relatively longer history of emergency response management of disasters has proved beyond reasonable doubt the inability of such an approach to up root the underlying causes of vulnerability (African Union (AU), New Partnership for Africa's Development (NEPAD) and the international strategy for Disaster Reduction (ISDR), 2004, p.4). Vulnerability and risk reduction require bridging the relief-rehabilitation gap by investing in developing people's capacities to prepare and to cope with future disasters. Emergency response concentrates less on bridging this gap and building people's capacity thus it is limited in reducing vulnerability.

2.5 Importance of Private- public Partnerships in Risk Reduction

Partnerships between the state or its organs and the people have been widely acknowledged as crucial for effective DRR programmes. In fact, one of the Priority areas of the HFA (2005- 2010) is to strengthen disaster preparedness through the involvement of individuals and communities in hazard prone areas in planning and implementation of disaster mitigation measures (UN, 2005, p.12). This is argued to be the basis for reducing vulnerability and strengthening capacity to cope with hazards. Similarly, the UNISDR campaign, *'Making Cities Resilient-My City is Getting Ready!'* emphasizes that disaster resilience is a product of government engagement of its citizens and other stakeholders in the process of disaster risk reduction- actions aimed at identifying, managing and lessening the impacts of natural and human-induced hazards (Cassidy and Sophie 2012, p. 8). Zimmermann (2011, p.5), focuses on rapidly urbanising Africa and Asia and contends that they particularly, need to harness community knowledge and resources in DRR efforts. Such partnerships are argued to promote sustainable reduction of vulnerability and risks, empowering and an aspect of good governance as discussed below:

2.5.1 Promotion of Sustainable Reduction of Vulnerability and Risks from Disasters

Public – private partnerships have been found to promote significant and sustainable reduction in vulnerability and risks from disasters. A number of studies have shown how involving communities through actions like the establishment of community structures can be an effective way of disaster risk reduction. In Bangladesh, for example, the Community–Based Cyclone

Preparedness Programme was able to achieve good results in terms of limiting casualties and losses when the community was involved in the implementation. Local community efforts were acknowledged as remarkable and to have greatly contributed to the success (Singh, 2010, p.16). Likewise, Genda Ada community in Ethiopia was able to attain significant and sustainable results when the community was involved in identifying the causes of the problem. Collaboration between the state and the people facilitated understanding of the link between the drought problem and the reckless behaviour practices. The community came to a realisation that they had a role to play in changing the situation, got organised into networks and took action to that end (Cordaid and IIRR, 2011, p. 45).

Clearly, involving the community right from the problem identification phase is important for understanding the problem at hand and harnessing the efforts of actors in the process. Disasters prone communities are not only directly affected but are also the first responders when disasters strike. This would be enough justification for their involvement.

2.5.2 Promotion of Community Empowerment

Many scholars have argued that private- public partnerships promote community empowerment. Community empowerment has also been acknowledged to play a major role in sustainable development. Samah and Aref (2011, p. 191 and 192) observed that community empowerment is a product of participation. Participation enhances the ability of the community to make changes based on their own needs after realising the root of their problems. This process however, is facilitated by actors such as the state through enabling relationships and structures. By exercising their capabilities through participation in establishing, organizing, implementing and managing activities, communities can gain more control over their lives, while at the same time strengthening existing individual abilities. Participation allows individuals to practice their potentialities and experience the actual empowering process. Therefore, public – private partnerships are inevitable if community and individual empowerment are to be realised. Indeed the kind of participation that is empowering is that in which both the state and the people are actively involved at all levels in an atmosphere of respect and mutualism.

2.5.3 Promotes Good Governance

Public – private partnership is an aspect of good governance and commitment on the part of national governments (Cordaid and IIRR, 2011, p.3). Roseland M (2000, p. 106) argues that good governance involves establishing democratic structures that enable stakeholders genuinely cooperate in the process of decision making. He argues for true collaboration which he terms as 'shared decision making'- where planning is done with stakeholders and not for stakeholders. This implies recognition the views and interests of all stakeholders are legitimate. One way this can be done is by utilising indigenous knowledge.

A study conducted by Misanya (2011, p.67) found that communities are more inclined to cooperate with the development efforts if they are involved and listened to. They value their knowledge and believe that it is reliable thus when projects draw on it, they are happy. However, Mercer, Kelman, Taranis and Suchet (2009) observe, that little application of indigenous knowledge is considered in development planning especially in relation to environmental hazards and risks. The acknowledgement of indigenous knowledge largely remains in theory and not in practice. This is a probable explanation for the negative attitudes that local people often portray when externally designed projects are implemented in their areas. Therefore, this trend can likely change with the kind of governance that actively and meaning fully involves the people.

However, the implementation of effective partnerships in DRR remains a challenge. Most of the literature, advocates for partnerships as crucial in promoting resilience yet they do not show how effective partnerships can be established and managed successfully. Pelling (2012, p.36), observed that the management of effective partnerships fills a vital gap in disaster studies. In a similar vein, Irvin and Stanbury (2004, p.58) observe that the benefits of citizen participation make it difficult to envision anything but positive outcome, yet there are conditions under which participation can be costly and ineffective. They specifically note that citizen participation is so costly that failure to adopt the resultant decisions makes it pointless. In addition, they argue that when heavily influenced by opposing interest groups, it can result in worse decisions. This argument brings to the fore the challenge of superficial involvement of the people in development which is a reality in many countries. True, there is growing advocacy to think

globally, but it is important to examine local activity within the global context. Failure to do this is what likely leads to failure or inability to adopt the decisions reached. Considering general consensus that involvement of the people is important, other than overlook it based on the challenges it may entail, care should be taken to ensure that such principles are adapted to the local contexts.

2.6 Theoretical Frameworks

Various frames were used in this study to guide its design- how it was conducted, the research questions used and how the data was analysed. The frames provided concepts and explanations on which the decisions undertaken in this study were based. The frames are discussed below:

2.6.1 The Grounded Theory

The design of this study was based on the grounded theory which focuses on discovering theory from data systematically obtained from social research (Glaser and Strauss, 1967, p. 2). The theory holds that research work should strive for the exact underlying processes so as to inform interventions that help resolve the problem and not on guesswork or preconceptions (Charmaz 2006, p. 521). This implies that research based on this theory should be guided by a few pre-determined ideas which should merely be guides. Research decisions thus remain open to adjustment based on the reality derived from the data and observations made. In line with this, the researcher identified an area of interest and carried out a literature review, drafted research questions, thought through the sampling scope and data analysis procedures in preparation for field work. However, these only served to guide initial data collection and kept changing in the course of the study based on the data and the reality in the community. Data collection and analysis were also done concurrently as a basis for understanding the data and making the changes deemed necessary in the course of field work.

As such, the procedures and strategies followed in this research were informed by the data and existing processes in the research area. Meanings were also modified through an interpretive process resulting from social interactions in the course of the research.

2.6.2 The Social Capital Theory

This theory provided the framework for this study, right from the research questions to data analysis. The social capital theory is a network theory that focuses on investment in social relations with expected returns. This study adopted Lin (1999, p. 35)'s definition of social capital as, "resources embedded in a social structure/social relations which are accessed and mobilized in purposive actions". A major ingredient in this definition is recognition that the social structure / social relations embed resources that can be used to pursue purposeful objectives. This study acknowledged that social networks are important resources for solving individual and collective problems and set out to investigate the possibility of investing in social capital - social networks so as to solve the flooding problem in Kampala city. The main research question was; 'What is the possibility for private- public collaboration for effective management of the flooding problem in Kampala city'.

Lin(1999, p. 40) argued that by investing in social capital, actors in the social network gain access to embedded resources to enhance expected returns of instrumental or expressive actions. He adds that instrumental action is taken to obtain resources not possessed by the actors while expressive action is taken to maintain resources obtained by the actor. The theory thus focuses on collaborative social relations characterised by interdependence and sustainability. Drawing on this, this research focused on collaboration between the public and the civil society as a basis for promoting sustainable reduction in vulnerability and risks from flooding. One of the objectives of the research was to assess how such collaboration can possibly be organised and this theory provided insight into the kind of questions to include in the interview guides for example, questions on the workings of existing partnerships and suggestions for effective partnerships were included on the guide.

This study was also guided by the perspective in social capital that focuses on group level capital. According to Lin (1999, p. 32), this perspective dwells on how groups develop and maintain social capital and how collective assets enhance individual member's abilities. As such, a major interest of the perspective is on the elements and processes through which social capital is generated and maintained and how norms and trust as well as other properties such as authority are essential in this process. Based on this, this research explored perspectives and

processes in the area of flood management as a basis for understanding existing constraints and building arguments for promoting effective and sustainable collaboration.

Further, data analysis in the area how private- public collaboration could possibly be organised was guided by Ostrom's social capital approach of co-production. The approach provided a framework that was used to guide data analysis focusing on how public-private collaboration could possibly be organised. Ostrom (1996, p.1073) proposed joint activity of citizens and governments as an approach to creating synergy. The approach implies that 'public and private actors are enmeshed together in the process of production and synergy is produced by the intimate entanglement of public agents and engaged citizens. Evans (1996, p: 1036) clarified that co-production involves complementarity and embeddedness, the former denoting a division of labour, in which the government delivers collective goods that complement inputs from the private actors. Embeddedness on the other hand, was argued to refer to ties that connect citizens and public officials. Advancing the same line of argument, Bhatti (2000, p.1043) argued for public policies that capitalize on complementary relationships and he opined that this has the potential to fill in between the public and the private sectors and help make each of them more effective. Data analysis in the area of collaboration used the above ideas as a basis for arguments and making conclusions.

2.6.3 Expand - contract model of disaster management

The research also based on the Expand- Contract model to define effective DRR practice in disaster prone communities. The model holds that effective disaster management involves measures in the area of prevention, mitigation, response and recovery. It further specifies that all measures can be carried out at all times in a disaster-prone community if vulnerability and risks are to be minimised (Twigg et al, 2000 cited in Victoria, n.d, p. 272). This study recognised that effective DRR practice involves on-going actions- before disaster strikes, during and after disaster strikes. On the same note, the interview guides included questions about prevention, mitigation, response and recovery. This was in appreciation that effective planning and implementation of disaster management interventions should incorporate actions aimed at prevention, mitigation, response and recovery as provided in the model. Further more, the model was also used in data interpretation and analysis as arguments relating to effective risk reduction

drew on its principles. Therefore, it provided a frame work for data analysis and drawing conclusions focused on effective reduction of vulnerability and risks from disasters.

3.0 QUALITATIVE METHODOLOGY

This chapter presents the details of the methodology employed in this study. Specifically, the chapter discusses the research strategy, the research design, the study scope, sampling techniques, data collection tools and methods, data analysis, ethical considerations and the challenges encountered.

3.1 Research Strategy

This research adopted a qualitative strategy for its suitability to meet the research objectives. Bryman (2008, p.26) argued that adoption of a research strategy is largely determined by the type of social problem being investigated. A major consideration in this is the way the research question/s is formulated. A research question that seeks to investigate world views of a particular group of people is best suited for a qualitative strategy which is sensitive to how participants interpret their social world. In this regard, a qualitative strategy was considered appropriate for this research because the specific research questions sought to understand the perspectives of the people directly affected by floods and those obligated to manage the flooding problem.

Another consideration was the data collection methods that would enable the collection of the required data. Bryman (2008, p. 26) argues that the research strategy and methods have to be dove- tailed with the research questions being investigated. This implies that consideration should be made of both the strategy and the data collection methods appropriate to the data needs. This study sought to explore the behaviours, values and beliefs of the participants. This called for qualitative methods that would enable building the necessary rapport such as the unstructured interviews. Such methods were well aligned to the data needs but also to the qualitative research strategy.

3.2 Research design

The study followed a case study design as it entailed a detailed and intensive analysis of a single flood prone community. Various communities in Kampala city experience seasonal flooding yet the study was conducted in only one of those communities; Bwaise parish III. Bwaise III was used as an exemplifying case with an objective of capturing the conditions of a frequent flooding area. According to Bryman (2008, p. 56), the notion of exemplification implies that cases are

chosen because they epitomise a broader category of cases. Bwaise III is one of the communities in Kampala city, affected by seasonal flooding thus it was considered a suitable context for answering the research questions. The Parish only provided an apt context for working through the research questions as opposed to being representative of other frequent flooding areas so that the findings could be generalised. The aim was to generate an intensive examination of a single case as a basis for engaging in a theoretical analysis. Thus as Bryman (2008, p. 57) argues, the issue of concern to the researcher was not the generalisation of findings rather generation of data to support theoretical arguments.

3.3 Study scope

The study was conducted in Bwaise Parish III and covered its six zones of Kamalimali, St. Francis, Bokasa, Kawala road, Katoogo and Bugalani. It explored the behaviours, perceptions and values with regard to the flooding problem and the possibility for synergy. Field work was conducted over a period of 8 weeks in the months of January and February, 2013. The participants were residents and workers in Bwaise, Parish III and officials from KCCA. A total of 10 FGDs and 26 in-depth interviews were conducted. The study respondents were 142 including those who participated in the FGDs. Of these, 80 were women while 62 were men.

3.4 Sampling

Sampling was done purposively and at two levels: selection of households and selection of interviewees. According to Bryman (2008, p.375) purposive sampling is linked to the selection of units with direct reference to the research questions. In line with this, a pre-visit was made to the study area and it was established that those affected by the floods were residents, business owners and workers in the area. It was also established that some households were women headed while others were men headed. Some of the residents were also living in rented households while others were living in owner houses. Some of the residents had also lived in Bwaise III for years. Thus, the selection of interviewees aimed at capturing the various perspectives based on the identified categories: residents as well as business owners and workers, women as well as men, those living in owner and rented houses and those who had lived in the area for a longer time as well as those who were new comers to the community.

The pre-visit also established that apart for KCCA in partnership with the international organisation such as the WB, there were no local or non- governmental organisations working in the area of flood management in the Parish. Flood mitigation activities undertaken by the community were mobilised by community leaders. There were no Disaster Risk Reduction Committees (DRRC) in the parish and that the few organisations that had ever provided relief items to the community did so through KCCA. As such, the perspectives of local leaders and KCCA officials were sought thus including them as study participants. This study thus benefited from integration of views and experiences of the different categories of the study population.

Snow ball sampling was also used particularly to select women headed households and residents who had lived in the area for long.

3.5 Data collection Methods

Primary data was collected using FGDs, in depth interviews and observations. Documents were also reviewed to generate secondary data. Utilisation of varied data sources and methods aimed at the benefits of triangulation. According to Bryman (2008, p.379), triangulation leads to greater confidence in findings which is a quality measure for qualitative research. Notes were taken for the interviews and FGDs and at the same time, responses were recorded. This was done to ensure data quality. Bryman (2008, p.451) observes that recording responses serves to complement the natural limitations of human memories, allows thorough examination of what people say and permits repeated examination of answers thus it ensures data quality. Interview notes were also used for respondent validation, as they were read out to the participants at the end of the interview to confirm with them that their world and perspective had been correctly understood. It also provided an opportunity for additions, clarifications and subtractions to the data. Bryman (2008, p.377) acknowledges the importance of respondent validation for qualitative research quality and argues that it enhances the credibility of the findings.

3.5.1 In-depth Interviews

In-depth interviews were used to generate rich and detailed information with regard to the causes, effects and coping strategies adopted to mitigate flooding. As Bryman (2008, p. 437) posits, the flexible nature of qualitative interviewing enables adjusting the emphasis as

significant issues emerge in the course of the interview. This makes this method appropriate for studies guided by the grounded theory. Probing was used to delve into the experiences of the participants so as to generate both the depth and breadth of the data which are important for quality qualitative studies. Interview guides were prepared (appendix). A total of 26 in-depth interviews were conducted: 24 interviews were conducted with households in 4 parishes: 6 interviews in each parish while 2 interviews were conducted with KCCA officials.

3.5.2 Focused Group Discussion (FGDs)

A total of 10 FGDs were conducted: 4 FGDs were conducted with women and another 4 with men while 2 FGDs were conducted with community leaders. FGDs were used to discuss the possibility for partnerships and how they can possibly be organised. They also served to highlight the differences in perceptions between the men and the women as women only and men only discussions were held. Guides were also used to enable focusing of the discussions.

3.5.3 Observation

Data was also collected through overt observation. Using this method enabled the researcher to take photos of the flooding situation and the physical coping strategies adopted by the community without suspicion. Most of the data collected using this technique was in form of pictures.

3.5.4 Review of documents

Documents were also reviewed to generate secondary data and these included: KCCA reports and work plans, reports of research studies carried out in in the study area and on flooding in Kampala. Document review started as part of planning for the study and continued throughout the study. It therefore guided the development of the data collection tools and also served to triangulate primary data generated through interviews.

3.6 Data analysis

Data analysis was guided on the grounded theory and it progressed concurrently with data collection- data analysis began soon after the collection of initial data. Transcripts and field notes were reviewed and coded.

Coding was done in three stages: (1) the data was read and re-read through so as to conceptualise it after which it was grouped into categories. The categories emerged from the data it self and were based on the researchers interpretation of the data. (2) The generated categories were then considered against the study context and patterns of interaction. This enabled connections between the categories thereby reducing on the data or categories generated and (3) the data was focused through relating the generated categories, refining them and developing them further. This culminated into generation of 'core categories'- those that are most revealing about the data or that make the most analytic sense to categorise the data directly and completely (Bryman, 2008, p.543). This implies that the data was re-explored and re-evaluated in terms of the generated categories until theoretical saturation was achieved. Theoretical saturation was used in this study as defined by Bryman (2008, p.542) as a point where a category has been fully developed and there is no need for further collection or reviewing of the data.

Care was taken to ensure that the connection between the collected data and the conceptualisation was maintained. According to Bryman (2008, p.542), this can be achieved through constant comparison of phenomenon and it entails being sensitive to contrasts between categories. In this study, relationships between categories were explored and this guided the collection of further data where it was necessary. Throughout the analysis process, general thoughts about significant remarks and observations were written down. Quotations and specific evidence from the data was used to support the categories.

As part of the analysis, a workshop was held in which the preliminary findings were presented to the study participants and other community members. Workshop participants were led through a process of analysing the preliminary findings and offering suggestions for the way forward. The workshop was also used for respondent validation since preliminary findings were shared and the participants had an opportunity to comment.

3.7 Ethical considerations

All the study participants were given an opportunity for informed consent before they participated in the study. An information sheet clearly explaining; the purpose of the study,

issues of voluntary participation, confidentiality and benefits of their participation was prepared. The sheet was either read by the participants or read out to them depending on their preference, and they were asked to sign it if they consented to participation.

The study participants were also given an opportunity to ask whatever questions that they had about the study and were informed of their freedom to withdraw from the study at any time with no consequences whatsoever.

3.8 Challenges

A major challenge for this study was that field work extended for a longer period than planned. This resulted from the unpredictable rains that made the area inaccessible on some days during which data collection had been scheduled. Some families had also relocated to their relatives homes thus could not be found in the study area. As such, field work stretched over a period of two months instead of the one month originally planned. This called for re-planning so as to complete the study in time.

Another challenge was the expectation by some of the sampled community members to be paid (money) for their participation. Some asked to be paid before they could be interviewed. However, after explaining the purpose of the study there was mixed reactions; some consented unconditionally; others only availed a specified amount of their time, while a few households did not consent. For the participants who could only avail some of their time, the interview was adjusted to fit in their circumstances. For the households that did not consent, they were replaced by the next eligible household until sample saturation achieved.

Another challenge was getting men to participate especially at the household level. The men were never at home during the day time because many were workers. To get them involved, working places of the men in the sampled homes were sought and these many were interviewed at their places of work even if they worked outside the community.

The community was suspicious of outsiders, particularly researchers due to the rumour that KCCA had plans of sending them off their land. They suspected any outsiders to be spies for KCCA. To be able to engage them, I had to move with one of the area leaders and for some

participants, they insisted that they be interviewed in the presence of their leader. This had issues of confidentiality and these were explained to the participants yet some insisted and for those, they were interviewed in the presence of the leader but confidentiality could not be guaranteed for such cases and this was clearly communicated.

4.0 EMPIRICAL FIELD FINDINGS

This chapter presents key findings established in the study. The presentation is based on the research objective and research questions below:

The research objective was: To assess the possibility for collaborative management of floods in Kampala city and how such collaboration can possibly be organised so as to promote sustainable reduction in vulnerability and risks from flooding.

The study was guided by the following research questions:

1. What are the causes and effects of flooding in Bwaise III, from the perspective of the community and KCCA?
2. What coping strategies, if any, have been adopted by the community and KCCA to minimise the effects of flooding and how effective have they been?
3. What are the key constraints to minimising the effects of flooding and how can they be overcome?
4. In what ways can KCCA and the households and/ or the community of Bwaise III Parish work together to reduce vulnerability and risks from flooding?

4.1 Causes of flooding in Bwaise Parish III

The interviews conducted with households and KCCA officials and the FGDs held with community members and leaders pointed to various causes of flooding in Bwaise III Parish. The advanced causes were both internal (originated from within the community) and external (induced from outside) to the community. Community perspectives were largely based on their experiences while the perspectives of KCCA officials were basically scientific and technical-representing the ideology of the authority. Worth noting though, was that a few community members explained causes in an objective and technical manner.

Below are the causes advanced by the study participants:

4.1.1 Internal Causes

Dumping Garbage in Drainage Channels: The majority of the participants including officials from KCCA attributed the flooding problem to dumping solid waste in the water drainage channels. The participants explained that the parish was heavily built up and many households did not have designated places for dumping garbage. KCCA acknowledges the challenge of waste management in the city and reported that by June 2012, the Authority was only able to collect 29, 543 tonnes/month of garbage out of the estimated 15000tonnes generated daily (over 40000 tonnes/month) (KCCA, 2013, p.8). An official from KCCA noted that the Authority had registered over 70 private garbage collectors, but most of the residents in Bwaise III parish, could not afford to pay for the services. As such, there was a lot of dumping both directly in drainage channels and on the road sides. The waste dumped along the road was eventually washed into road side drainage channels during heavy rains leading to their blockage and consequently flooding. A community member commented,

> *People have filled water channels with garbage; they dump rubbish everywhere and they usually do this in the night so it is even hard to apprehend them. Quite often you wake up in the morning only to find garbage dumped on the road side and in the water channels, even on people's verandas and this has greatly contributed to the flooding problem…When the water channels are blocked, the water from uphill simply spills over the area…*

The community leaders also acknowledged the challenge of garbage disposal and explained that it had led to some channels being filled. Giving an example of the old Nsooba channel, they observed that it was initially 7 (seven) feet deep but currently had a depth of only 2 (two) inches. They however noted that the garbage problem did not originate entirely from the Parish as some of the garbage was washed down from uphill during heavy rains. One of the leaders reasoned,

> *The biggest volume of waste in the channels comprises mineral water bottles and surely, that water is not taken by the people of Bwaise III, they cannot afford to drink that water and even if you checked with the shops around, not many of them stock mineral water. That means that the bottles come from uphill… we also have some people who have started using garbage for income generating activities like making briquettes and this has definitely led to the reduction of the waste that is dumped.*

Indeed, the garbage dumped in road side storm water channels was observable as shown in the photo below:

Figure 4: Solid waste dumped in a water channel in Bwaise Parish III

Source: (Author, 2013)

It ought to be noted though that the garbage problem in the city does not only signal challenges of waste management but also poverty and attitudinal issues. All the six zones in the parish were faced with a challenge of garbage.

Settlement in a Swampy Valley: This was majorly pointed out by KCCA officials as an issue contributing to the frequent flooding situation in Bwaise III Parish. The officials explained that the parish was located in a swampy valley where surface run-off after downpours settled naturally and thus flooding occurred whenever it rained. Indeed, the study found that the zones that were further down in the valley: Katoogo, St. Francis and Kawaala road experienced more frequent flooding than the zones that were quite uphill: Kamalimali, Bugalani and Bokasa. Flooding in the down hill zones was reportedly more intense and flood waters took a longer time to subside because of a higher volume of surface run-off received coupled with the soil type in the swamps which allows very little infiltration.

The officials noted further that the Parish was heavily built up and many of the buildings were erected in water ways thereby increasing spill over. A combination of these factors greatly contributed to the flooding situation in Bwaise III Parish. Some community members also acknowledged that settling in swamps contributed to the flooding situation. One of them commented,

> *The problem is that we are in a wet land and some kind of a valley, so water does not flow to pour into drainage channels…people have also filled the area with soil and have blocked water flows that now flood the area.*

Figure 5: The Swampy Surroundings of Katoogo Zone, Bwaise Parish III

Source (Author, 2013)

Some community members however, did not out rightly acknowledge their location to be a factor in the flooding problem; yet, they recounted experiences that testified to this fact. One of them narrated,

> *I remember one time when surface run-off from up hill flooded this area yet it had not even rained here but in another place up hill…we also have a problem of natural springs which penetrate the floors of our houses and fill our houses with water. Even when it is dry season, our houses are often filled with water and we have to pour it outside.*

It should be noted though that, not all community members either directly or indirectly recognised settlement in a swampy valley to be a factor in the flooding problem. Some community members particularly, those who had lived in the parish for a long time did not agree

with this view. The arguments they presented were largely influenced by the history of flooding in the area which they were well acquainted with. One of them argued,

> *Bwaise III has always been a swamp and I remember we used to grow a lot of yams here but we never experienced floods here until the 1990's…the floods have increased so much in recent times… when I hear people saying that the floods come because we are in a swamp I don't understand what they actually mean…they just want to use this as an excuse to grab our land but we will not let them…*

While this argument appears well-founded, it is important to note that it is a bit emotional. The study found that there was anxiety in the community due to the awareness that KCCA planned to evict encroachers from wetlands. Indeed, the participants who owned land in the parish were on the defensive all through the interviews, trying to justify their settlement in the area. Some of the justifications were; that they had bought the land and had agreements to that effect, others said that they had taken a step to register with the Buganda land board and paid the 'busulu', land tax regularly, others were worried that they had invested in the area, constructed houses and that they had lived there all their life and that the land act protected them. Such fears could have stimulated such emotional arguments. Officials from KCCA, in line with the annual report FY 2011/12 acknowledged that the authority was working with the Department of Wetlands in the Ministry of Water and Environment, to gazette wetlands in the City (KCCA, 2013, p.9). They however, did not say anything about the fate of the parish in this.

All the same, the argument highlights a knowledge gap with regard to the causes of flooding on the part of some community members, especially where the link in the aspects involved is not very straight forward. In addition, it portrays the gradual trend in the flooding situation that could be explained in terms of increase in surface run off due to growth in impermeable land cover (buildings, roads and pavements) both uphill and within the community.

4.1.2 External Causes

Inadequate and Poorly Maintained Drainage System: The study respondents revealed that the drainage system in the Parish was inadequate, inappropriately constructed and poorly maintained and as such contributed to the flooding problem. This was pointed out by both the KCCA officials and some community members. The community members explained that the drainage

channels were narrow and not well connected. To exemplify the situation, one community member explained,

> *If only these channels were constructed in such a way that they connect to each other…but this is not so, Nakamiro channel, for examples is not connected to any other channels but just pours into us…*

Another concern raised by the community was that the channels are poorly maintained and many of them were silted up. KCCA officials recognised the inadequacy and poor maintenance of the drainage system in the whole city, not just Bwaise III. Indeed, KCCA (2012, p.65), undertook an update and extension of the Kampala drainage master plan, 2002 and its 2013-2014 action plan includes; widening, deepening and lining of tributary channels such as Nakivubo, Nalukolongo, Kinawataka and Lubigi. The Nsooba drainage channel project with support from the WB is also under construction.

Construction of the Northern Bypass: It was widely held among the community members that construction of the northern by pass route had intensified the flooding problem in the parish. They explained that the construction of the road blocked some of the water channels thereby increasing surface run –off. The road was also constructed on a raised land (*the arrow in figure 6 shows the northern by pass)* and as a result, run off from uphill reportedly bounced back into the settlement area especially Katoogo and Kawaala road zones which are neighbouring the road.

> *The northern by pass has increased flooding in our area because it was constructed in a wet land and they filled up the area with soil to raise the land on which it was constructed. So the water that formerly settled in that part just flows back into our homes…*

Climate Change: This factor was not raised by any of the study respondents but was inferred from the stories told by community members with regard to the flooding problem. Many participants commented that the rain fall pattern had greatly changed. Rain fall was intense and the rainy season prolonged which increased run off and consequently flooding. During periods of extended rainy seasons, flood waters accumulate to the level of people's chests and it is very risky,

Sometimes, the water is so much and it is at the level of my breast area (roughly 140cms high)…these days, the rains are very unpredictable, there was a day when it rained the whole night and continued raining up to around mid day the next day… it was terrible, we almost drowned and we just had to relocate to our relatives…this bed here was floating on water…

4.2 Effects of flooding

The study findings revealed both direct and secondary flood effects faced by the community. There were also variations in the perceptions of flood effects between the men and women in the community. The views of the women largely focused on reproductive roles while those of the men focused on the productive roles. The perceptions of KCCA officials were general to Kampala city, not specific to Bwaise Parish III. For example, they mentioned effects such as loss of lives, destruction of property and infrastructure. However, no death from flooding was reported by any of the community members in the Parish. They explained that they did not have specific information on Bwaise III as the flood risk assessment of on going and had not yet been concluded.

It should be noted though that the some community members took advantage of the floods to but cheaper products, establish businesses and to rent cheaper houses and or fail to pay house rent promptly.

4.2.1 Direct Effects:

Loss of and Damage to Household Property: The community members explained that during floods, the water washed away a lot of household property. Household items that can float such as clothes, saucepans, cups, plates and Jerricans among others were washed away with the water, never to be recovered. This was pointed out by mainly the women who explained that those items were mainly used by them in taking care of their homes. One woman commented,

Our dishes, jerricans, basins and other things are washed away in the flood waters and the most hurting thing is that we have opportunists among us, people who will brave the waters just to steal the items that are floating and sell them at a cheap price…

There were conflicts among community members over such items as the owners felt they ought to be returned by those who supposedly picked yet the other party was not willing to do so. The latter took advantage of the floods to accumulate household items and to sell them cheaply to earn a living.

Household property like the chairs, beds, beddings and electronics like televisions were also reportedly damaged by the floods. In fact many of the households did not have chairs in their sitting rooms. Some respondents showed pieces of wood in the compound explaining that their furniture had been damaged. Fortunately, no cases of electric shock as a result of floods were reported.

Damage to buildings: This was predominantly mentioned by the men and women who headed households. They explained that the walls of their houses were dump most of the year which weakened them. Indeed the damage to the houses was visible as shown in the photo below;

Figure 6: A House in Bwaise III Parish Damaged by Floods

Source (Author, 2013)

The floors were also reportedly damaged by the natural springs. The participants were concerned that each year, they had to set a side some money for house maintenance which made it very

hard for them to save so as to do other things. Indeed some houses were being reconstructed. This, they explained, affected their ability to improve their lives. Apparently though, most the women headed households had not repaired their houses for some time *(figure 7).*

Figure 7: A House under Reconstruction in Bwaise III

Indeed, quite a number of hard ware shops had been established up hill to sell construction materials. The owners of these shops most likely target the people in the parish to sell their products. When the participants were asked why they had to incur such costs instead of shifting to another area, they responded that they owned the land and that it was difficult to sell it off at a reasonable price. In addition, they explained that repairing the house was much cheaper than relocating to another area- the cost of getting established in another area was much higher.

Effects on Livelihoods: Some of those interviewed had lost their sources of income to floods. A woman who used to rear chicken for a living explained that in one night, floods killed of the 300 birds and has never been able to recover. She now only survives on property income with her 6 children being a widow:

It rained at night and for some reason I never heard the rain so I did not move to save my birds and in the morning, 300 of the chicken had died in the floods and the ones that did not die fell sick and eventually died also. I have not been able to start again…

The participants who owned shops in the area also explained that he woke up one morning only to find the rice, sugar and flour that he had in stock filled with flood water. I incurred a huge loss and since then I have stopped stocking such items for fear of the floods and of course it has affected my income. Incomes were also affected when people's work areas were made inaccessible by the floods. A participant who was also a property owner explained that she appeared unreasonable when she demanded house rent from her tenants yet she knew very well that they had been cut off from work by the floods,

During the floods, the tenants did not pay rent promptly and there is nothing that you can do so you just have to bear with them… our rent is also very small compared to what is paid in other places that do not flood…

Health Challenges: many challenges were reported with regard to being surrounded with dirty water for days. The participants explained that there were sharp objects in the flood waters and these cut many people who walked through them. The latrines also reportedly flooded and faeces floating on flood waters were a common scene. This caused serious health hazards like disease out breaks. The women specifically, who spent hours in flood waters as they carried out their household roles explained that they had developed infections in their feet. Two study participants also explained that they were once bitten by snakes in the flood waters.

The men on the other hand found it hard to go for work as the roads became inaccessible. Those who owned cars parked up hill and this meant that they had to walk through the floods to get to their cars. They explained that they had to carry extra clothes and on reaching up hill, they changed into clean clothes and continued to their work places. Quite a number of laundry services known locally as 'dobi' were established uphill and provided water for their customers to wash before changing into the clean clothes. They also washed the soaked clothes for a fee.

Disruption of Social Services, Particularly Education: the schools in the parish were quite often disrupted by the floods which made them temporarily inaccessible. The effects of floods were manifested in the level of student absenteeism in the rainy season. The community

members explained that when it rained heavily and they considered it unsafe to send the children to school, then the children missed school. A primary school administrator commented,

> *…Our students get problems getting to school when the roads are filled with water and are impassable. Their homes too fill with water and they are kept in double decker beds so they do not attend until the flood waters subside…*

Similarly, a participant who doubled as a parent said,

> *When it floods, our children can't go to school because we fear that they drown…*

Some respondents also noted that at times the schools relocate to other areas. One of the participants said,

> *The nearest primary school also has a secondary school which is located up hill and sometimes when the school premises are flooded, the primary school children have classes in the premises of the secondary school…*

The Rights of Children Impinged on and the Workload Increased for Women: in the times of floods, the children in the parish are kept in doors on top of double decker beds until the flood waters subside. This means that the children do not play at all, thus their right to play is invaded by the floods. This was pointed out by the women and they were saddened by this situation.

> *No mother can be happy when their children are confined in one place but the only way that we can keep our children safe is by keeping them on top of the beds…we also make sure that they do not play because if they do they may fall into the water and drown…they stay there until the flood waters decrease…when they want to go to the toilet, they have to call you to carry them there or provide something for them to use because at times the latrines are also flooded…*

The women too are faced with an increased work load. In addition to their daily chores, the women had to carry their children on their backs to and from school whenever it flooded, that is if they decide that they go to school. The work load involved in ferrying the children was determined by the number of children they had. A primary school administrator commented,

The children have to be carried by their parents on backs or shoulders to school. The uniforms and shoes are carried in the bags and they put them on when they get to school. That is the life here and it has become our normal life…if the water is not too much, the school truck helps in picking the kids to schools.

This was not something that the women did in the morning and the evening only but even when the children were at school and it threatened to rain, they rushed to pick up their children. Some women said that they typically had a lot of work to do when it flooded yet they had to keep an eye on the children.

4.2.2 Indirect Effects

Diseases: the community members explained that they had a challenge of diseases associated with floods the most common being malaria. There were very many mosquitoes in that area due to the stagnant water in the environment. This affected their work and school life as they could not work or go to school when sick. In addition to the malaria challenge, the women complained of infections in their feet which they attributed to staying in water and dirty water at that for extended periods of time. Almost all the women who were interviewed had this problem. One of them observed,

I have an infection in my feet and not only me but other women around but I think it is because we stay in water for a long time. You stand in flood water as you cook, wash and do other household chores. We actually stay in flood waters all day and only get out of it when you climb into your bed…

Treated with Disrespect: the majority of the study participants complained that they were despised by friends, workmates and relatives simply because they reside in an area that experiences flooding. One participant recalled,

My workmates always tease me when for example, I buy drinking water… they make statements such as, 'you mean you still need water', 'Haven't you had enough water from the floods' and it is annoying. They disrespect you and treat you like you are less human…in fact there is also one radio station that keeps making the statement, 'water is life nga tosula Bwaise' ('water is life, as long as you do not live in Bwaise)

Thievery: the study participants explained that the houses of community members who relocated temporarily to other places during floods were often broken into by thieves. They noted that this set them behind as they often came back to empty houses and had to start afresh- buying house hold items.

4.3 Coping strategies and their effectiveness

The study identified various coping strategies adopted by both the community and KCCA with regard to flooding. The strategies adopted by the community were largely short term as opposed to KCCA that focused on long term or strategic strategies. Community strategies were largely ineffective, offering short term relief and in some cases adding to the vulnerability of the other community members. The identified strategies are explained below:

4.3.1 Community Coping Strategies

Community coping strategies are categorised into there: those that aimed at preventing the flood waters from entering the houses; those aimed at minimising the damage and those aimed at preventing secondary effects.

Strategies aimed at Preventing Flood Waters from Entering Houses: the most common strategy in this category was raising the level of the land surrounding the houses in a bid to side line flood waters. The compounds of a number of houses in the parish were visibly raised to the extent that the houses appeared as if they had sunk into the ground. Some homes had heaps of soil in the compound. The soil was imported from outside the Parish by those who could afford. The participants noted that this mechanism provided some form of protection but it was only short lived as the soil was eventually washed away and the flood waters found their way into the houses again. This mechanism did not also provide complete protection even in the short run as the roads continued to flood and residents of these households still had to use flooded roads.

It was also noted that in the long run, the soil poured into the compounds accumulated to the level of the windows of the house and the house had to be rebuilt so as to raise it to a normal level- remove the roof and add to the length of the house *(See figure 8)*. This implies that the strategy was expensive and not all the households in the parish could afford it. It also reportedly increased vulnerability and risks to flooding if neighbouring households had not done the same.

The volume of flood water in the neighbouring homes was reported to increase as a result of that strategy. Clearly, the strategy was not only ineffective in the long run but was also unsustainable.

Figure 8: Using Soil as a Coping Mechanism against Floods in Bwaise III

Source (Author, 2013)

Some houses had raised barriers constructed in the door so as to prevent flood waters from entering as shown below:

Figure 9: A Raised Barrier (Arrow) to Prevent Flood Waters into Entering the House

Such barriers were also only effective depending on the volume of the flood waters. Their effectiveness in the face of intense rain fall as a result of climate change was very limited. A community member said,

> *The volume of flood waters is sometimes much and the barrier becomes useless, the water jumps over it and enters the house…*

The local leaders in Katoogo zone also noted that they tried to mobilise community members to *clean the water channels* within the community every last Saturday of the month. They however noted that this arrangement was not very successful as very few community members participated in it. Interviews with community members indicated that most of them were not aware of this arrangement and as such did not participate in it.

Strategies aimed at Minimising Damage: The community had established a local *warning system based on use of mobile phones.* Some community members had been entrusted with the responsibility of calling others whenever it was raining especially at night. This was aimed at waking them up to enable them take action to protect themselves and their property. They contributed airtime to those entrusted with the responsibility. Another strategy was based on the spirit of good neighbourhood. In case the rain came and a neighbour was a way, the other neighbours came in to help protect the property of the others. Mobile phones were also used in this strategy in such a way they in case they needed instructions from a neighbour who was away on anything aimed at minimising damage, they would call and the beneficiary would refund the airtime on return. Some of the study participants who had benefited form this arrangement hailed it to be beneficial and very practical. However, its effectiveness was limited by the ability to buy airtime.

Another strategy in this category was quite risky yet predominantly used in the community. The community members, who did not have double decker beds, raised their beds by placing them on top of well arranged bricks. Some tied their valuable items including heavy ones like the chairs in the ceiling of their houses using ropes. This was very risky due to the possibility that the items placed could fall off and cause more damage. There was also a possibility for the beds to fall

from the bricks. As if that is not enough to worry about, some community members kept their children, the elderly and other disadvantaged family members on top of those items to protect them from the effects of floods.

Figure 10: A Bed (black arrow) Placed on Top of Bricks (yellow arrow)

Source (Author, 2013)

As earlier hinted, some schools relocated and had classes in places other than their usual location. This was also considered disruptive by the study respondents, who explained that it was difficult to know where the children would have classes,

> *The relocation of school children is not a good thing but we have nothing to do…sometimes you drop them at the usual school and when you go to pick them up, you find that they had classes in another area…*

Strategies to Prevent Secondary Effects: the only strategy adopted by the community to prevent secondary effects was consistent use of mosquito bed nets so to prevent the transmission of malaria. Many of them noted that the strategy had effectively helped them to minimise malaria transmission. Mosquito bed nets had reportedly been distributed in the community by the local government and all households had reportedly got.

4.3.2 Strategies Adopted By KCCA

A strategy adopted by KCCA was the cleaning of road side drainage channels, removing garbage and de-silting them. The community members acknowledged that KCCA staff were sometimes seen cleaning the water channels in the parish. However, they noted that this was not done regularly. A community member commented,

> *What KCCA does is to pass by, do some little cleaning and then take months…this cannot solve the problem as the channels need to be cleaned regularly not just periodically…*

The community members noted that for this strategy to be effective, the channels needed to first of all be widened then cleaned regularly. They noted further that the channels needed to be appropriately connected to other channels so that they pour the water into other channels and not in people's residences.

A long term strategy by KCCA was the construction the new Nsooba drainage channels with support from the World Bank which was on going.

Figure 11: The New Nsooba Channel under Construction

Source (Author, 2013)

The community members were very optimistic about the construction of the new Nsooba channel noting that it was wide and could easily be connected to tributary channels from within the parish. They noted that even though the channel was yet to be completed, they were already experiencing a change in the flooding situation: decreased surface run-off was reported and the period within which the flood waters disappeared had also reportedly reduced. This was widely reported in the uphill zones of Bokasa, Bugalani and Kamalimali.

Alongside the optimism expressed, however, many were concerned about the maintenance of the channel when complete. A participant noted;

> *We hope that the Nsooba channel is properly maintained, it will help us but if it is left to fill with garbage and silt, them am afraid, we shall live like this forever…*

Noticeably, one community member observed that the land scape of the area would make it a challenge for the tributary channels from within the parish to pour into Nsooba Channel. He explained that the channel was constructed a bit up hill yet the channels in the parish, particularly Katoogo Parish were at a low level. Kawaala Road zone too, was blocked from the channel by the northern by pass (road) thus her residents did not see themselves benefiting from the Nsooba Channel,

> *We are on the other side of the channel and it is not possible that they will dig through the road to just to connect us to the channel…we are invisible in this, we do not matter and planners do not even think about us…*

4.4 Constraints to Reducing Vulnerability and Risks from Flooding

Questions about constraints to reducing vulnerability and risks from flooding were asked as part of the study and the responses got were categorised into three: individualism, reliance on ineffective and unsustainable coping mechanisms and absence of collaboration between KCCA and the community.

4.4.1 Individualism

The majority of the community members decried the practice of working to benefit individual households when the problem being addressed was faced by the whole community. Specifically,

they mentioned the practice or reclaiming the swamp in parts – filling soil in the compounds of isolated households other than working collectively to solve a common problem. One respondent advised,

> *We need to work as a community to solve this problem of floods, we are not benefitting from individual homes working to keep themselves safe…*

Indeed, coping practices adopted by individual households proved ineffective and even those households were not able to prevent flood risk completely and sustainably.

4.4.2 Reliance on Short Term Coping Mechanisms

This factor was pointed out by mainly KCCA officials who explained that there was need for adoption of strategic coping mechanisms so as to solve the flooding problem. They noted that the community had over time adopted temporary strategies that had failed to satisfy the measure of effectiveness. In fact, far from solving the flooding problem, they argued, the strategies adopted over time only increased vulnerability and risks.

Some community members also recognised the need to shift from the short term strategies to the strategic ones. They referred to the Nsooba channel as an example of a strategic project that they felt was significant in solving the flooding problem. However, they were concerned about the reaction of the community members if for example, more land was needed to expand the drainage channels. A community member wondered,

> *If KCCA decided to widen the channels within the community, it would be a good thing and very helpful yet it is likely to face a challenge of acquiring land for expansion. Our people are funny in a way that they are tired of floods but I doubt that they would sacrifice a few meters of their land for construction of proper drainage systems…*

To affirm the above concern, one respondent said,

> *If KCCA wanted to use my land to construct water channels, they would have to pay me and good money…if they are not willing to pay then to hell with their projects…I can use this land even the piece that you call small in other ways and earn money from it, I am a poor man and my land is all I got…after all we have learned to live with floods…*

Deducing from the quotation above, the attitudes of such community members towards projects aimed at helping them is an extra constraint which is likely to stand in the way of significant strategic interventions.

4.4.3 Non Involvement of the Community in KCCA Activities

The community members were not happy that KCCA did not involve them in their activities. Quoting one the community leaders, she said,

> *KCCA works in a funny way, they come to work in your area and yet they cannot inform you. When I find them working, I thank them for the work and continue with my own business. The ideal way should be that they even plan with us and work with us in our area but they do not…its funny how you go in an area and start cleaning with out even talking to the people who you think make the place dirty*

This view was generally held by the community members and they felt that if KCCA involved them in its activities, it would enhance the effectiveness of the interventions,

> *If KCCA works with people in the area to for example, maintain the water channels, it can be done very well… The people from the community should be responsible for maintaining the channels full time instead of them passing by once in a while…*

Specifically, community members explained that whenever they tried to get together to de-silt the old Nsooba channel, KCC would arrest them on the account that they were meddling in activities that did not concern them. Such practice, they added, cannot help in solving the problem of floods.

4.5 The possibility for collaboration and how collaboration can possibly be organised

This study considered the possibility for collaboration between KCCA and the community for flood management and found factors that could be used as a basis for forging collaboration as presented below:

4.5.1 The possibility for collaboration

The findings revealed that KCCA and the community could be brought together by the common interest in the flooding problem. KCCA is charged with managing Kampala and thus it has a stake in the flooding problem experienced in the city. Similarly, the study participants perceived the problem of floods as one of the major challenges that they faced. When asked for their opinion on the major challenges facing the community of Bwaise III, all the respondents indicated that it was the flooding problem,

> *I have been in Bwaise all my life and floods are the biggest problem that we face here…*

The problem of floods thus presents a common area of interest between KCCA and the community Bwaise that can possibly be exploited to promote net working to solve a common problem. The community is interested in seeing the flooding problem solved while KCCA has not only taken steps to solve the problem but has also officially charged with managing the challenges experienced in the city. Existence of a common ground is usually the first step in collaboration.

In addition to the common ground, the study revealed that both the KCCA officials and the community members appreciated the need for working collaboratively to solve the problem. The study sought the opinion of both parties with regard to collaboration and all the parties believed that it would be a good idea. A KCCA official commented,

> *That would be great and would make like a lot easier for the authority if the communities cooperated and also worked hand in hand with us…the challenge is that communities are hard to work with sometimes, they delay the processes and some times their attitudes are problematic…*

Similarly, a community commented,

> *The problem of floods is beyond what the community can solve, we do not have control over this and the government and in this case KCCA should come in to help us. Besides, the people here are very low income earners and we cannot afford on our own and we*

will be happy to work with KCCA… only that we do not know the goals of KCCA, it is rumoured that it wants to evict us so were suspicious…

Based on the quotes above, clearly both parties appreciate the importance of collaboration. However, along side that recognition is fear of what the researcher refers to as the 'unknown'. The community is suspicious of the authority while the authority is also concerned about the processes and the attitudes of the community members. The good news though is that suspicion can be cleared through collaboration. At the same times, attitudes do change and collaboration presents the best opportunity for influencing the attitudes of others.

4.5.2 How Collaboration can possibly be organized

It was widely held that collaboration could be organised in such a way that meaningful participation is achieved and in a sustainable way. Community members specifically suggested that formation of community committees was very important. They suggested formation of committees in the areas of waste management, maintenance of drainage systems, early warning among others. The community members felt that since they live in the community, they should be entrusted with the responsibility of cleaning the channels and KCCA can only provide support and supervision.

5.0 EMERGING ISSUES, DISCUSSION AND ANALYSIS

In this chapter the issues that emerged from the findings are discussed and analyzed. The issues that emerged from the findings included; cause of floods and the knowledge gap, context specific risk assessments for effective reduction, long term versus short term coping mechanisms and Conflict as a key ingredient for establishing collaboration.

5.1 Causes of floods and the knowledge gap

The importance of understanding how people interpret their own world is highlighted. This is especially important for development given that the perceptions of development actors are bound to differ. Perceptions differ and different levels including the community and individual levels. This study brought to the fore the differences in perceptions from both within the community and externally (KCCA) with regard to the flooding problem in Bwaise III.

Contrary to the view held by some development practitioners that community members are by and large ignorant and cannot understand their own world, the study found quite the opposite. Some of the community members articulated the causes of flooding in an objective and technical manner. This affirms what the renowned scholar Paulo Freire (1972, p. 32) said that all men regardless of their status are capable of understanding their own world. He argued against treating people like objects being saved from a burning building and advocated for the involvement of people in interventions aimed at developing them. This obliges development practitioners and government institutions like KCCA, to consider the way they do their work, particularly the involvement of the people for whom interventions are meant.

It was also interesting to establish that community members were aware of community practices that contributed to the flooding problem. The mentioned community practices such as dumping garbage in water channels, settlement in wetlands and individualistic implementation of coping strategies that added to the vulnerability of others. This realization is important in harnessing the efforts of the affected into actions aimed at solving the problem. In addition, it argues for the incorporation of indigenous knowledge in development planning. The use of indigenous knowledge has been advocated by various scholars including Misanya (2011, p.100) who concluded that indigenous knowledge is important for the involvement of communities in

development projects, changing their attitudes and for building their capacity and empowering them. Indeed, the knowledge exhibited by community members with regard to the causes of floods can arguably provide a strong foundation for their empowerment and attitude change. However, Misanya warns against relying wholly on this indigenous knowledge arguing that it is limited in terms of its applicability to different contexts. In line with argument and considering that this study was of a case study type, care should be taken not to assume that the findings of this study apply to all the flood prone areas in Kampala. Rather, this study only exemplifies the flooding situation in flood prone communities.

This study, with regard to the causes of floods also established that there was a knowledge gap among some community members on some of the causes of floods. This was so particularly for causes that were not stand alone rather, were connected to other factors. For example, some members could not see the connection between settling in wetlands and flooding. This connection in the case of Bwaise III included factors to do with the parish being in a valley, being heavily built up and blockage of water channels a combination of which contributed to the flooding problem. This calls for concerted effort aimed at enlightening the community on any unclear issues before they could be expected to collaborate with other actors. The importance of knowledge in any development intervention cannot be overlooked. The ARSDRR (2004, p. 6) notes that knowledge and information are important for making informed decisions as such its provision is timely in managing the flood problem collaboratively.

5.2 Context Specific Risk Assessments for Effective Risk Reduction

The findings showed that KCCA officials were not aware of the specific risks related to floods in Bwaise III. On the contrary they had a general understanding of the effects of flooding in Kampala. As such, they mentioned that death was an effect of floods in parish yet it no death from floods had ever been reported in the parish. This highlights a very important aspect of having context specific information before planning for interventions is undertaken. Failure to do so, would likely lead to mis-firing with intervention. As a result very little or no impact will be yielded. Commendably KCCA in partnership with UN Habitat have undertaken flood risk assessment to aid the development of an integrated flood management strategy. It is important that therefore that the results of the assessment are flowed carefully to guide the development of

the strategy. This will facilitate the development of an efficient strategy. On the other hand, it would comply with the standard set out the ARSDRR (2004, p.6) which advocated for risk identification and assessment before intervening.

5.3 Long Term versus Short Term Coping Strategies

The study found that the coping strategies adopted by the community were by and large short term while those adopted by KCCA were strategic. The short term strategies were found to provide relief for only a limited period thus not sustainable. On the other hand, the long term strategies, particularly the construction of the new Nsooba channel were hailed by the community. The study participants recounted that the benefits of the Nsooba channel project were evident even before its completion and they were optimistic about the end results. Important to note though, is that the short term strategies adopted by the community provided some protection while they lasted. Their major limitation was that they were individualistic in nature, confined to individual families thus unable to offer complete protection. Arguably then, they are capable of offering effective temporally protection if implemented on a community level scale. Therefore, it is feasible not to dismiss them on the basis of their being ineffective or non sustainable in the long term rather they should be used hand in hand with the long term strategies so as to reduce vulnerability and the risks from flooding.

In addition, the community coping strategies had an element of combining actions aimed at prevention, mitigation, response and recovery, though not perfectly. It ought to be remembered at this level that the expand contract model adopted for this study, advocates for disaster management actions incorporating measures in all the 4 strands. It specifies that all measures can be carried out at all times in a disaster-prone community if vulnerability and risks are to be minimised (Twigg et al, 2000 cited in Victoria, n.d, p. 272). As such, community coping strategies provide a good ground on which to build better long term and short term measures.

Further more, community perceptions on coping strategies contradicted with those of KCCA. This was because; the community perspectives were majorly based on then ‘here and now’ concept while those of KCCA were strategic. The contradiction was manifested in the aspects involved in long term strategizing. Long term strategizing as per the KCCA plans entails

widening existing drainage channels which implies using the land resource to achieve this. The challenge in Bwaise III was that the community members claimed to own the land and many of them would not be willing to sacrifice a few centimetres to facilitate the process of improving the drainage systems. Some of their responses seemed to indicate that they had lived to accept the floods as a state of normalcy. According to Pelling (2012, p.25), regular exposure to the perverse effects of flooding had the potential to reduce people's willingness to viable solutions as risks become an accepted and normalised part of every day life. Sadly, some of the community members in Bwaise III were arguably in this state and this poses a major challenge for actions aimed at solving the problem.

5.4 Conflict as a key Ingredient for Establishing Collaboration

The study identified a number of factors that could suffice as conflicts between KCCA and the community. Community members were suspicious of the KCCA agenda in the community and were anxious that the authority had plans of evicting them from their settlement. On the other hand, KCCA officials felt that community members were hard to deal with claiming that they always exhibited negative attitudes towards any interventions even those intended to help them. Commonly, the existence of conflicts would out rightly be considered a disincentive for collaboration. In this study, however, a different perspective is held which looks at the would-be disincentives as key ingredients for collaborative relations.

I argue that instead of focusing on the attitudes exhibited is not helpful, rather, the parties should focus on clearing the misconceptions and then there will be no more misconceptions and finger pointing. For example, if KCCA cleared the suspicions by, for example, explaining their motives, the suspicion will cease to exist and a lot of things will likely change including the negative attitudes cited. In the social capital theory of Co production, Ostrom (1996, p.1073) argues that the state or the state agency, in this case KCCA, has the responsibility of creating social capital. This implies that it takes the initiative to involve the community and to establish an enabling environment to enable the generation of social capital. The importance of social capital in this case cannot be over stressed. KCCA, as a state representative in this case, has the capacity and the resources to involve the community unlike the community thus the step taken by KCCA is significant. Not withstanding the role of working with the communities in good governance which is internationally recognised.

6.0 CONCLUSIONS

This chapter presents the conclusions drawn from the study. The conclusions are based on the research objective which was;

To assess the possibility for collaborative management of floods in Kampala city and how such collaboration can possibly be organised so as to promote sustainable reduction in vulnerability and risks from flooding.

The chapter is divided into two sections: the possibility for collaboration and how collaboration can possibly be organised.

6.1 The Possibility for Collaborative Management of Floods in Kampala City

An analysis of the findings, point to a possibility of establishing collaboration between KCCA and the flood prone communities in Kampala city for effective management of floods. This conclusion is based on a number factors revealed in the findings. One such factor is the existence of a common interest that can be used to draw the parties together. KCCA, as the official administration body in the city is charged with solving the problem experienced in the city among which is the flooding problem. In other words, solving the flood problem in the city is KCCA's business. On the other hand, the flood prone communities experience the effects of floods regularly and are interested in seeing the problem solved. The case study of Bwaise III, a flood prone area which was adopted as an exemplifying case, revealed that flood prone communities consider flooding as one of their major challenge. Many of them have not been able to accept the flooding situation even if it has been on for a long time. As such, managing the flooding problem, in terms of reducing vulnerability and risks serves as a common ground on which collaboration can be forged.

However, this is not expected to come so easily since the current relationship between KCCA and the flood prone areas as exemplified by Bwaise III is tense, mired with suspicions and misconceptions. It is characterised by accusations and counter accusations, KCCA on one hand distrusting the flood prone communities and the flood prone communities on the other hand anxious that KCCA has ulterior motives. Meaningful collaboration cannot be established amidst such an atmosphere. This means therefore, that for such collaboration to take place, efforts should be made to clear the suspicions. I argue that once this is done the other aspects of the

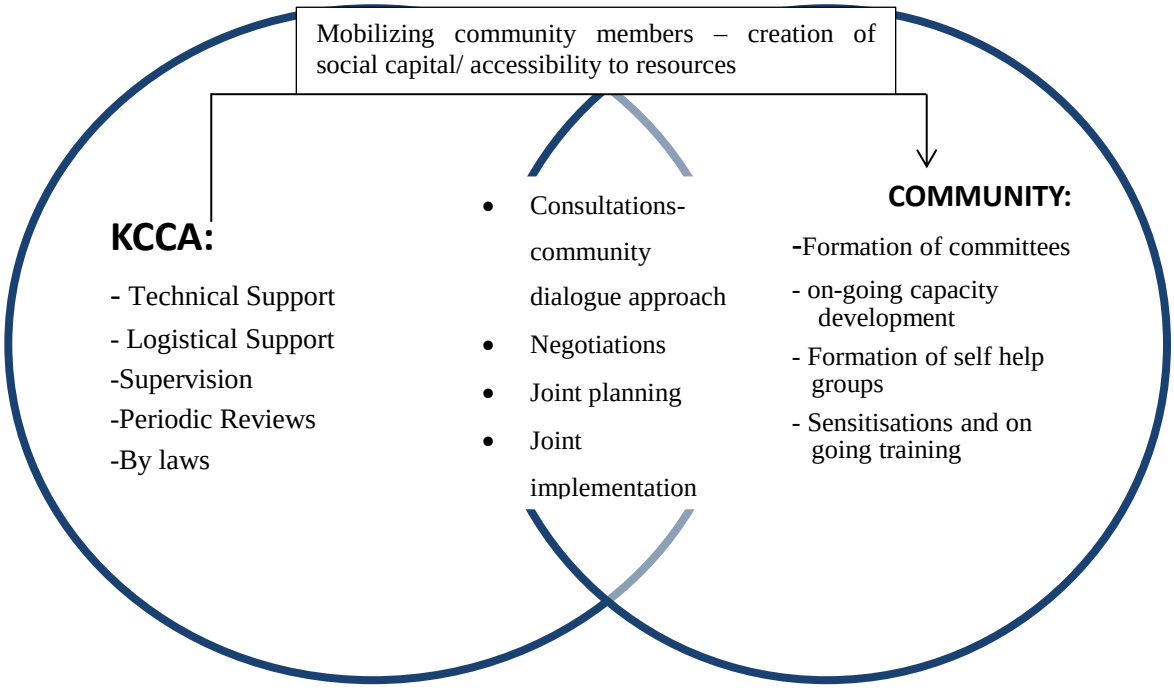
conflict can gradually be cleared including attitude change. This argument is however advanced, fully recognising that attitude change does not come over time, it is a gradual process of building trust. Thus the formation of meaningful collaboration is a matter of time.

The establishment of collaboration is also dependant on the willingness of KCCA to take steps in that direction. KCCA as a government body is the best position of the parties considered here to initiate collaboration. KCCA also has the resources and capacity to initiate such collaboration unlike the community. Therefore, as long as KCCA does not steps in this direction, collaboration is likely to remain a dream

6.2 How Collaboration can possibly be organised

The illustration below presents the researcher's model with regard to how collaboration can be organised;

Figure 12: An Illustration of how Collaboration can possibly be organised



Source (Author, 2013)

As shown in the model above, KCCA can take the initiative to mobilise the community for action. Through doing this, KCCA should aim at generating and accumulating social capital. This implies that social interactions between KCCA and the communities should focus of group formation so that community participation is collective. It is assumed that this would enable access to resources in various forms such as advice, knowledge and power among others. This way the capacity of the community to cope with the flood hazard is strengthened. The intersection part of the model shows the ideal level of community participation for meaningful social interactions.

KCCA thus retains the supportive role, both technical and logistical and takes over overall supervision of the activities. Activities are jointly initiated and implemented in this model.

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APPENDICES

Appendix 1: Data Collection Tools

IN-DEPTH INTERVIEW GUIDE FOR HOUSEHOLDS

Ice Breaker

1. How long have you lived in Bwaise III?
2. What are the major problems facing the community in Bwaise III?

Perceptions

3. In your opinion, are floods a major problem in the community? Why do you think so?
4. How are floods a threat to you and the community? Why do you feel that way? **Probe:** Have you always felt that way? Are floods increasing or decreasing? What could be the reasons for this?

Causes and effects

5. What factors, do you think contribute to floods in Bwaise? **Probe:** factors internal and external to the community.
6. How do floods affect you and your family? **Probe:** Experience with evacuation, accessibility to social services, effect on source of livelihood, effect on vulnerable family members like the elderly, disabled and children.

Coping Strategies

7. What adaptive strategies have you put in place at house hold level to deal with floods? **Probe** for responsive measures undertaken shortly before or during the flood occurrence and anticipatory or long term measures
8. How successful do you think the strategies have been? **Probe** for specific information on strategies at household level.
9. What do you think are the key constraints to the effectiveness of the coping strategies in place? **Probe:** constraints to house hold.

Partnerships

10. What are you and others doing to try and help in terms of reducing the consequences of floods?

11. In what ways does the community works together to deal with floods? **Probe:** for specific activities and the actors involved in implementing them

12. What has been done by KCCA to help house holds and the community to cope with floods in terms of reducing the consequences?

13. How is the community involved in the strategies undertaken by NGOs and KCCA? **Probe:** for community involvement in decision making, planning, implementation, Community resources used.

Possibility for Partnerships

14. What do you think should be done to help households and the whole community to cope? **Probe:** What local committees, civil society organizations, NGOs and KCCA can do.

15. If the community was to work together with NGOs and KCCA, what activities do you think can be undertaken by households, the community, NGOs and KCCA? Probe: What do you think would be the best way to work together?

Thank you

Proposed Introduction and Ethical considerations

My name is Ajambo Susan and I am a student on the Masters of development Management degree programme with the University of Agder, Norway. I am conducting a study on managing floods in Kampala. I am trying to find out ways in which the flood prone communities can work with Kampala City Council Authority (KCCA) and civil and non Governmental organizations to effectively manage the problem of flooding in Kampala. Your responses are very important to me and will hopefully help to form efficient partnerships that will reduce the vulnerability of the people and risks resulting from floods in those areas. If you agree with this, I will ask you some questions and record your answers. I will go over what I have written at the end for you to confirm.

I will use the information collected from this and other interviews to write my masters thesis.

I plan to share my thesis report with the stakeholders in flood management in Kampala including:

- The community of Bwaise III
- Kampala City Council Authority
- NGOs involved in flood management like; UN Habitat, Plan Uganda and Red Cross Society among other
- Civil society organizations

It is voluntary for you to participate in this study. This means that you can decide to participate or not. You can also withdraw from the study at any time. All of the answers you give will be confidential. This means that I will use the information you give in my thesis report but will not disclose your name or any information that may lead to you being identified. If we should come to any question that you don't want to answer, just let us know and we will go on to the next question.

Please feel free to ask me any questions now or at any time during the discussion. Are there any questions that you would wish to ask me at this point?

Is it okay for me to conduct the interview now?

Guide for local leaders, committees and Organizations

Perceptions

16. What are some of the major problems of this community?
17. Is flooding one of the major problems to the community? Why do you think so
18. How are floods a threat to the community? Why do you feel that way? **Probe:** Have you always felt that way? Are floods increasing or decreasing? What do you think are the reasons for this?

Causes and effects

19. What factors, do you think contribute to floods in Bwaise? **Probe:** factors internal and external to the community.
20. How do floods affect the community Probe**:** Experience with evacuation, accessibility to social services, effect on source of livelihood, effect on vulnerable family members like the elderly, disabled and children

Coping Strategies

21. What adaptive strategies have you as community leaders/a committee/ an organisation put in place to help the community to deal with floods? **Probe** for responsive measures undertaken shortly before or during the flood occurrence and anticipatory or long term measures
22. To what extent have these strategies been instrumental in reducing vulnerability and risks to floods at household level and community level, if at all **Probe** for specific information on the different strategies mentioned

23. What are the key constraints to the effectiveness of those strategies? How can the strategies be improved?

24. What can other stakeholders do to help? Probe: What can be done at house hold level, community level, by the local leaders, local organisations, KCCA among others?

Perspectives about KCCA initiatives

25. What do you think about the way KCCA addresses issues related to floods? Do you think their initiatives address the issues in the community effectively? Why or why not?

26. Do they have accurate information about the flood situation and risks in the community? Why do you think so? How knowledgeable are they about the risks faced at household and community level?

27. How important are their contributions to reducing vulnerability and risks? How successful have they been in reducing vulnerability and risks and strengthening coping capacity at house hold and community level? **Probe** for specific information on the different strategies mentioned

28. What are the key constraints to the effectiveness of those strategies? How can the strategies be improved? What can the others stakeholders do to improve them?

Processes

29. To what extent does KCCA involve the community in planning, decision making and implementation of initiatives? **Probe:** for specific people or groups of people that directly work with and the ways in which they work with KCCA.

30. In what ways do you cooperate with KCCA on flood management in the area? Describe your activities with regard to their plans and initiatives

31. Are you satisfied with the quality of communication between you and KCCA? **Probe:** specific information on the nature and type of communication.

32. What influence do you have on KCCA with regard to decision-making? To what degree do you feel involved with KCCA?

33. In what ways do you support KCCA in the area of flood management? What benefits do you experience from working with them?

Partnerships

34. What is the quality of cooperation between community organisations and committees involved in flood management and KCCA? Would you characterize the cooperation as a partnership? Why or why not?

35. How can the cooperation be improved? Probe for cooperation at household and community level and among local organisations and KCCA

36. In what ways do you think the community can work together to reduce vulnerability and risks to floods? How can community coping capacities be strengthened? **Probe:** for specific activities and issues that can be to reinforce cooperation and strengthen capacities at house hold level and community level.

37. What can KCCA do to strengthen coping capacities of the community?

38. If the community was to work together with KCCA, what activities do you think the community can take up; which ones can KCCA take on and which ones would require joint action? Probe: What do you think would be the best way to work together?

39. Any miscellaneous comments or questions?

Thank you for participating

DEMOGRAPHIC CHARACTERISTICS

Interviewers' Name_____

Date_____

PLEASE TICK (√) ONE BOX THAT APPLIES

PARISH _____

ZONE Kalimali ☐ Bokasa ☐ Bugalani ☐

St. Francis ☐ Katoogo ☐ Kawaala ☐

1) Sex of the respondent Male ☐ Female ☐

2) Age of the respondent (Please write) _____ (Completed years)

3) Marital Status

Single ☐ Married ☐

Divorced/Separated ☐ Widowed ☐

HOUSE HOLD CHARACTERISTICS

4) Sex of the house hold head

Male ☐ Female ☐

5) Main Source of livelihood

Employment income ☐ Business enterprise ☐ Property Income ☐

Family Support ☐ Organizational support ☐ Other ☐

Please Specify; _____

6) Educational level of the household head

No formal Education ☐

Less than Primary Education ☐

Primary Education (P1-P7) ☐

Secondary School Education (S1 – S6) ☐

College or University Education ☐

Other ☐ Please Specify, _____

7) **Activity Status of the household head**

Working ☐ looking for Work ☐ outside the labour force ☐

Other ☐

Please Specify; _____

8) Housing occupancy Tenure

Owner occupied ☐ Rented ☐

Other ☐

Please Specify _____

9) Number of rooms used for sleeping

_____ **(Please write the number of rooms).**

10) Number of people who live in the household? *(Brothers, sisters, cousins, etc. including the respondent)*

_____ **(Please write the number of People).**

11) **Activity Status of other family members**

Working ☐ looking for Work ☐ outside the labour force ☐

Other ☐

Please Specify; _____

HOUSING CONDITIONS (To be observed)

12) Type of Housing Unit

Detached house ☐ Semi detached house ☐ Flat ☐

Tenements ☐ Servants quarters ☐ Hut ☐

Others ☐ Please Specify, _____

13) Durability of Dwelling Unit

Permanent ☐ Semi permanent ☐ Temporary ☐

14) Construction Materials for dwelling units

a) Roofing materials

Permanent	**Temporary**
Iron sheets ☐	Tins ☐
Tiles ☐	Thatch ☐

Asbestos ☐ Polythene ☐

Concrete ☐

Others ☐ Please Specify, _____

b) Wall materials

Permanent	**Temporary**
Concrete ☐	Unburnt bricks with cement ☐
Cement ☐	Unburnt bricks with mud ☐
Stones ☐	wood ☐
Burnt /stabilized bricks ☐	Mud and pole ☐
	Tin ☐

Others ☐ Please Specify, _____

c) Floor materials

Permanent		**Temporary**	
Concrete	☐	Rammed Erath	☐
Bricks	☐	Wood	☐
Stone	☐		
Cement screed	☐		

Others ☐ Please Specify, _____